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November 5, 2015

FILED ELECTRONICALLY

Federal Aviation Administration
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RE: Draft Advisory Circular 20-ICA, Instructions for Continued Airworthiness
Draft Order 8110.54B, Instructions for Continued Airworthiness Responsibilities,
Requirements, and Contents

To Whom It May Concern:

The Aeronautical Repair Station Association (ARSA) is encouraged by the Federal Aviation Administration's (FAA) renewed interest in revising policy regarding the content and availability of Instructions for Continued Airworthiness (ICAs). ARSA applauds the agency for its efforts to encourage the development and distribution of airworthiness information that is vital to maintaining aviation safety. The above-referenced draft guidance documents (collectively, the "draft guidance"), however, fail to address some of the most fundamental ICA-related issues and incorporate previous guidance that is contrary to Title 14 CFR.¹ For that reason ARSA respectfully requests the agency revise the draft documents accordingly.

ANALYSIS

1. Draft Guidance Continues to Incorrectly Define Who is a Design Approval Holder.

The draft guidance ignores the plain language of part 21 and narrowly defines the persons or entities classified as design approval holders (DAHs). Section 21.1(b)(4) expressly defines a design approval to include type certificates (TCs), amended and supplemental type certificates (ATCs, STCs), parts manufacturer approvals (PMAs), technical standard order authorizations (TSOAs), and other approved designs.² While acknowledging this definition the agency then proceeds to disregard it entirely³ by

¹ All regulatory citations are to Title 14, Parts 1 through 199 of the Code of Federal Regulations (CFR) unless otherwise noted.

² § [21.1\(b\)\(4\)](#). Design approvals within the ambit of § 21.1 also include repair designs such as those required for approving technical data associated with major repairs and major alterations.

³ Compare [Draft FAA Order 8110.54B app. B para. 9](#) (defining design approvals in accordance with §21.1) with [Draft FAA Order 8110.54B para. 10](#) (stating design DAHs under the order include only TC

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concluding that DAHs “are limited to the holder[s] of a ... TC, STC, amended TC or [an] amended STC” and that ICAs need only be developed for type certificated products and major changes to those products.⁴

The following excerpts from part 25, appendix H and part 33, appendix A emphasize that the ICA requirements apply to all articles eligible for installation on a type certificated product and therefore to all DAHs as defined in § 21.1(b)(4). The pertinent language in part 35, appendix A for propellers replicates the quoted paragraphs for engines.

H25.1(b)

The Instructions for Continued Airworthiness for each airplane must include the Instructions for Continued Airworthiness for each engine and propeller (hereinafter designated “products”), for each appliance required by this chapter, and any required information relating to the interface of those appliances and products with the airplane. If Instructions for Continued Airworthiness are not supplied by the manufacturer of an appliance or product installed in the airplane, the Instructions for Continued Airworthiness for the airplane must include the information essential to the continued airworthiness of the airplane. (emphasis added)

H25.3(b)

Maintenance instructions. (1) Scheduling information for each part of the airplane and its engines, auxiliary power units, propellers, accessories, instruments, and equipment that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross references to the Airworthiness Limitations section of

and STC holders). See also [Draft FAA Advisory Circular 20-ICA paras. 5-6](#) (drawing the same distinction).

⁴ [Draft FAA Order 8110.54B app. B para. 10](#); [Draft FAA Advisory Circular 20-ICA para. 5](#).

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the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the airplane. (emphasis added)

A33.1(b)

The Instructions for Continued Airworthiness for each engine must include the Instructions for Continued Airworthiness for all engine parts. If Instructions for Continued Airworthiness are not supplied by the engine part manufacturer for an engine part, the Instructions for Continued Airworthiness for the engine must include the information essential to the continued airworthiness of the engine. (emphasis added)

A33.3(a)(6)

Scheduling information for each part of the engine that provides the recommended periods at which it should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection the applicable wear tolerances, and work recommended at these periods. However, the applicant may refer to an accessory, instrument, or equipment manufacturer as the source of this information if the applicant shows that the item has an exceptionally high degree of complexity requiring specialized maintenance techniques, test equipment, or expertise. The recommended overhaul periods and necessary cross references to the Airworthiness Limitations section of the manual must also be included. In addition, the applicant must include an inspection program that includes the frequency and extent of the inspections necessary to provide for the continued airworthiness of the engine. (emphasis added)

A33.3(b)(4)

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

Part 21 requires the “holder of a design approval” to furnish a complete copy of ICA to the owner of a product and any other person required to comply with the terms of

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those instructions.⁵ The regulations unequivocally instruct that the issuance of *any* design approval—including PMAs, TSOAs and other design approvals—carries an attendant obligation to develop and distribute ICAs.⁶ In direct contravention of part 21 the draft guidance creates two classes of design approvals, only one of which is deemed sufficiently important to be required to comply with § 21.50(b), the pertinent airworthiness standards or, where applicable, minimum performance standards. The definition of a DAH must be revised to comport with the regulatory definition of design approval in § 21.1(b)(4) before the guidance is finalized. Furthermore, the revised guidance must clarify that ICAs are required for design approvals at both the product and component levels.

2. Component Level ICAs Must Include Basic Maintenance and Overhaul Information.

It is axiomatic that the airworthiness of a product depends on the airworthiness of its constituent components. An essential requirement for maintaining the airworthiness of a product or other article is the availability of work instructions that are based on approved technical data. Indeed, the FAA began requiring DAHs to make maintenance data available for *all* type certificated products because the dearth of maintenance information “often did not provide a sound basis for maintaining the airworthiness of aircraft.”⁷ The agency remedied this problem by specifying in the applicable airworthiness standards the information essential to continued airworthiness which therefore must be developed and made available to persons required to comply with those instructions.⁸ Even though the airworthiness standards are focused at the product level, the quoted language from parts 25, 33 and 35 clearly state that the ICA requirements apply to all articles installed on the aircraft, aircraft engine or propeller. Moreover, the airworthiness standards recognize the importance of component maintenance information. For example, engine and propeller DAHs must provide information related to a component’s interface with the

⁵ § [21.50\(b\)](#).

⁶ *Id.*

⁷ Airworthiness Review Program; Amendment No. 8A: Aircraft, Engine, and Propeller Airworthiness and Procedural Requirements, 45 Fed. Reg. 178, 60177 (Sept. 11, 1980) (to be codified at 14 CFR pt. 21). Importantly, maintenance and overhaul manuals were required to be prepared long before the current ICA rules were adopted in 1980. For example, engine maintenance manuals were required as early as 1941. They had to be furnished to both owners and maintenance providers. Manuals for other products were required in 1950 (rotorcraft), 1952 (propellers) and airplanes (1970). In 1980, § 21.50(b) extended the “make available” requirements to all type-certificated products and created a standardized ICA format.

⁸ See, e.g., §§ [23.1529](#), [25.1529](#), [25.1729](#), [26.1-26.49](#), [27.1529](#), [29.1529](#), [31.82](#), [33.4](#), [35.4](#), and referenced appendices.

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product, as well as on-wing maintenance and overhaul instructions, including details of repair methods for worn or otherwise substandard parts and components along with the information necessary to determine when replacement is necessary.⁹

The FAA has consistently espoused the view that proper maintenance of articles, once removed from an aircraft, is essential for ensuring the continued airworthiness of the aircraft.¹⁰ Nevertheless, the agency's current interpretation of the regulations indicates that component maintenance information, typically contained in maintenance manuals (CMMs), need not be developed or made available to maintenance providers unless it is incorporated by reference into a product level ICA¹¹ or included in the Airworthiness Limitations section.¹² Even in the limited instances when a CMM must be made available, the draft guidance narrowly construes a DAH's ICA obligations. The draft guidance states, in pertinent part, that if the ICA "indicates that a component is to be *removed and replaced* as a remedial action, but make[s] no reference to component maintenance information, any such component maintenance information that exists does not constitute ICA and therefore is not subject to the distribution and availability requirements of § 21.50(b)."¹³

The FAA's position towards component-level ICAs fails to advance aviation safety because it ignores the importance of component maintenance in ensuring that a product conforms to its approved design and is in condition for safe operation. Moreover, this position is fundamentally inconsistent with the most basic tenets of system safety and safety management principals. By creating two classes of design approvals and not requiring component maintenance information be made available because a component can be removed and replaced, the FAA curiously signals that component maintenance has no impact on a product's airworthiness. While it is true that a component can be removed and replaced, it is typically not replaced with a *new* component. Maintenance personnel frequently remove a component from an aircraft, send the article to a certificated repair station, and install it on another aircraft. The lack of component maintenance information—or a DAH's unwillingness to make the data available—leads to the proliferation of independently-developed, non-standard maintenance procedures to accomplish basic tasks. The agency should re-define what is essential to continued airworthiness and require component DAHs to develop and distribute ICAs for the articles they produce.

⁹ [Part 33 app. A § 33.3](#); [Part 35 app. A § 33.3](#).

¹⁰ See §§ [43.13](#), [43.16](#), [145.190\(d\)](#).

¹¹ [Draft FAA Order 8110.54B para. 11.1.1](#); see also [Draft FAA Advisory Circular 20-ICA para. 2-2](#).

Component maintenance information may also be required to be developed by other rules, such as appliance repair ICAs or ETSOA maintenance and overhaul manuals.

¹² FAA legal interpretation of August 9, 2012

¹³ [Draft Advisory Circular 20-ICA para. 11.2.1](#).

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Furthermore, the agency's failure to articulate a standard for what information is "essential" to the continued airworthiness of each aviation product and the articles installed thereon has forced the FAA to issue "special" regulations to address safety concerns in a piecemeal fashion.¹⁴ This patchwork of special regulations can be reduced by mandating that a complete set of component-level ICA include instructions for performing basic maintenance tasks such as cleaning, disassembly, inspection, repair, reassembly, test and/or final inspection. By requiring DAHs to provide enough information to overhaul a component, basic maintenance practices would be standardized.¹⁵ Competing commercial interests would also be balanced successfully with the need for essential maintenance information because manufacturers would not be required to disclose all their repair data. Revising the draft guidance to require the development and distribution of component maintenance information will advance aviation safety by ensuring a product's airworthiness throughout its service life.

3. All Component Design Approval Holders Must Develop and Make Available Component Maintenance Manuals.

All design approval holders under part 21 are required to develop and distribute a complete set of ICAs for their articles.¹⁶ For component DAHs, this should include a CMM that sufficiently details the steps necessary to perform basic maintenance up to and including overhaul of the component. However, existing policy imposes no such obligation. This highlights the fundamental disconnect between the Aircraft Certification and Flight Standards Services. On one hand, repair stations need component maintenance information (i.e., CMMs) to obtain a rating, add an article to their capability list, and current manufacturer's data must be maintained and accessible when the relevant work is being performed.¹⁷ On the other hand, Aircraft Certification imposes no obligation on component manufacturers to develop and distribute this information as a condition of issuing a design approval. Although CMMs can sometimes be obtained from operators (assuming they exist) this does not resolve the "chicken and egg" situation that requires maintenance providers to have and follow CMMs in the vast majority of circumstances.

¹⁴ Specifically, the creation of [part 26](#), [SFAR-88](#), airworthiness directives and other "post ICA" specifications for information "essential to the continued airworthiness" of civil aviation products.

¹⁵ See also [§ 43.2](#) (detailing the elements of an overhaul).

¹⁶ [§ 21.50\(b\)](#).

¹⁷ See §§ [145.101](#)(rating), [145.109\(d\)](#) (maintenance and accessibility), [145.209\(d\)\(1\)-\(2\)](#) and [145.215\(c\)](#) (capability list).

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If the FAA determines that component DAHs are not required to develop CMMs and provide them as part of a complete set of ICAs, the FAA should eliminate a repair station's obligation to obtain them before they can be appropriately rated or add the affected article to their capability list. This will result in repair stations expanding their current practice of developing non-standard work instructions for performing basic maintenance tasks. Indeed, the only way this problem can be truly resolved is by requiring component DAHs to comply with the ICA requirements by providing basic maintenance and overhaul information for their articles. They are undoubtedly the most knowledgeable about their components and in the best position to provide this information.

4. The Draft Guidance's List of *Per Se* Violations of the ICA Requirements Must be Expanded.

The engine and propeller airworthiness standards require DAHs provide "details of repair methods for worn or substandard parts" in an ICA.¹⁸ Simply instructing that an article be sent to the DAH or its supplier does not satisfy that obligation. Likewise, this practice is contrary to existing FAA policy prohibiting DAHs from interfering with an owner/operator's choice of maintenance providers.¹⁹ The FAA has allowed the practice of removing repairs from ICAs to go unchecked and it will continue to proliferate unless the agency takes action to ensure that the ICA content requirements are followed. To remedy this problem, the practice of removing required repairs from the ICA should be incorporated into the list of restrictive practices that constitute a *per se* violation of § 21.50(b).²⁰

CONCLUSION

The draft guidance is a step in the right direction; however, these fundamental issues must be addressed before these documents are issued in final form. ARSA is focused on advancing aviation safety and component maintenance data is critical for maintaining the airworthiness of type certificated products. ARSA is not requesting the FAA require DAHs to turn over proprietary repairs; rather, only the information necessary for performing basic maintenance tasks and overhauls in a standardized manner. Likewise, the association does not advocate that DAHs be prevented from seeking reasonable compensation for the ICAs they develop. We recommend that

¹⁸ [Part 33 app. A § 33.3](#); [Part 35 app. A § 33.3](#).

¹⁹ [FAA Policy Statement PS-AIR-21.50-01, Type Design Approval Holder Inappropriate Restrictions on the Use and Availability of Instructions for Continued Airworthiness, at 3 \(Mar. 23, 2012\)](#) (finding ICAs requiring repairs be provided or otherwise authorized by the DAH unacceptable under § 21.50(b)).

²⁰ See [Draft Advisory Circular 20-ICA para. 8.6](#) (enumerating prohibited practices).

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the FAA review the elements of an overhaul described in § 43.2 and articulate a standard defining the information essential to the continued airworthiness of a component. In addition, the ICA guidance must emphasize that any action taken by a DAH to restrict operators from selecting a maintenance provider of their choice is a *per se* violation of § 21.50(b).

If the FAA agrees with ARSA's regulatory analysis, the association would be pleased to submit proposed revisions to the draft guidance that are consistent with the regulations and these comments. We appreciate the FAA's efforts to address ICA practices that are contrary to section 21.50(b) and look forward to assisting the agency in further refining its ICA guidance.

Sincerely,



Marshall S. Filler
Managing Director & General Counsel



Ryan M. Poteet
Regulatory Affairs Manager

Enclosure: [ARSA-Joint Industry Comments Draft Order 8110.10 ICA and Joint Policy Statement \(Aug. 20, 2004\)](#)

August 20, 2004

VIA ELECTRONIC MAIL TO: mike.reinert@faa.gov

Michael Reinert
Federal Aviation Administration
Aircraft Engineering Division
Delegation and Airworthiness Programs Branch, AIR-140
Post Office Box 26460
Oklahoma City, OK 73125

RE: Draft Order 8110.ICA

Dear Mr. Reinert:

The entities listed below are pleased to submit the following Joint Industry Comments and supporting materials relating to the Federal Aviation Administration's (FAA) Draft Order 8110.ICA. We appreciate the 60 day extension of the comment period previously provided by the FAA.

<i>Party</i>	<i>Interest</i>
Aeronautical Repair Station Association (ARSA)	Repair stations, manufacturers, distributors and air carriers
Chromalloy Gas Turbine Corporation	Independent repair station and manufacturer
Delta Air Lines	Major air carrier and repair station
Hamilton Sundstrand	Product and component manufacturer and repair station
Heico Corporation	Independent manufacturer and repair station
Lufthansa Technik AG	International independent repair station
Moog, Inc. Aircraft Group	Component manufacturer and repair station
The NORDAM Group	Independent manufacturer and repair station
Pratt & Whitney	Product and component manufacturer and repair station
Sargent Controls & Aerospace	Component manufacturer and repair station
SR Technics Switzerland	Independent repair station and manufacturer

We applaud the FAA's efforts to address the complex and difficult issues associated with the Instructions for Continued Airworthiness (ICA) regulations and related FAA policy. We believe that draft Order 8110.ICA is a significant step in the right direction.

However, to clarify critical regulatory and safety issues that the FAA did not address in its draft Order, we are submitting the following documents for consideration:

- Appendix A: Joint Industry Policy
- Appendix B: Matrix describing the major features of Appendix A
- Appendix C: Proposed revision of draft Order 8110.ICA that incorporate the Joint Industry Policy and
- Appendix D: Minutes of the Joint Industry Policy meetings held in Alexandria, VA on May 12 and June 23, 2004.

Background

Since its inception in 1984, ARSA has cited the importance of making basic maintenance information available to the aviation industry. As you know, this requirement is set forth in section 21.50(b) of the Federal Aviation Regulations (FARs) and in the ICA rules contained in 14 CFR Parts 23, 25, 27, 29, 31, 33 and 35.

In 2003, the U.S. House of Representatives included language in Flight 100 – Century of Aviation Reauthorization Act that would have required ICAs, including component maintenance and overhaul manuals, to be made available at a fair and reasonable cost. H.R. 2115, 108th Cong. § 420 (2003). Although the final version of the legislation did not include the ICA language, the debate on Capitol Hill helped focus attention on this important safety issue.

In early 2004, ARSA began working on a draft ICA Policy to submit to the FAA. The Association's goal was to enhance safety by developing a policy that complied with the current regulations, harmonized the policies of the Aircraft Certification Service and Flight Standards Service and was also fair, reasonable and balanced to all interested parties. In March 2004, ARSA introduced its draft policy during its Annual Repair Symposium.

To ensure all interested parties participated, ARSA solicited the assistance of a cross section of the aviation maintenance industry to further develop and refine the draft policy. As you can see from the above matrix, these companies include some of the largest aerospace product and component manufacturers and independent maintenance providers in the world. The Committee met in Alexandria, Virginia on May 12 and June 23, 2004 and discussed many difficult issues that are reflected in the

attached minutes (Appendix D). After a nearly five month cooperative effort, the Committee approved the Joint Industry Policy described in these comments.

The Policy being submitted to you today is consistent with existing FAA policy in many respects. However, it is significantly different in its treatment of components and other articles that have their own FAA design approvals. We wanted to ensure that component maintenance and overhaul manuals are made available to **all** parties required to comply with the FARs. At the same time, current regulations require design approval holders to provide only basic maintenance and overhaul information that is essential to the continued airworthiness of the product.

The FAA published its proposed ICA Order (69 Fed. Reg. 29,160, May 20, 2004) during the Committee's deliberations. Although the Committee had adopted its own approach in developing the Policy, it recognized the positive steps the FAA had taken by issuing the draft order. In an effort to harmonize the FAA's draft with the Joint Industry Policy, we have included in Appendix C a version of the FAA's draft Order that incorporates the provisions of the Policy being submitted to you today.

Highlights of the Joint Industry Policy

The Joint Industry Policy—

- Applies to all design approval holders (although they are treated differently depending on the kind of design approval held)
- Does not affect the content of existing maintenance and/or overhaul manuals at the product level (aircraft, aircraft engine, propeller and appliance)
- Requires TC and STC holders to make available basic, off-aircraft component maintenance and overhaul information for articles installed on their products
- Allows design approval holders to refer to the ICAs of a higher or lower level design approval holder provided they contain the basic maintenance and overhaul information required by the policy
- Requires holders of "original" PMAs (i.e., those issued on the basis of a licensing agreement and/or a manufacturer's assist letter) to make available basic, off-aircraft component maintenance and overhaul information for the articles on which they hold a design approval (unless sufficient information is provided by the product manufacturer)
- Requires other PMA holders (those not included in the above classification) and persons performing major repairs to evaluate whether the existing ICAs are valid with the PMA part installed or the major repair applied. If the existing ICAs are not valid, supplemental ICAs would be required to ensure the continued airworthiness of these products.

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August 20, 2004
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- Reaffirms existing FAA policy embodied in Order 8150.1B that TSOA holders must also provide basic maintenance and overhaul information for their TSOA articles in accordance with section 21.50(b) as required by the TSO
- Requires that ICAs be made available at a fair and reasonable price, including the requirement that the same price be charged to all similarly situated certificate holders and that they contain the same basic information for all certificate holders.
- Allows ICAs to be used to perform any regulatory activity authorized by their certificate and rating
- Authorizes design approval holders to develop source approved repairs outside the ICAs unless the information is essential to continued airworthiness, in which case it must be made available.

We submit that ICAs are an essential link between the design and maintenance rules. Having access to basic safety information will promote standardization when performing maintenance and alterations of civil aviation articles. The Joint Industry Policy is a balanced approach that addresses the concerns of most design approval holders while ensuring that maintenance providers have access to data essential to the continued airworthiness of civil aviation products.

For the reasons set forth below, we request that the FAA adopt the Joint Industry Policy as incorporated in draft Order 8110.ICA. In the alternative, the Committee asks that the FAA consider the Joint Industry Policy in its revisions to draft Order 8110.ICA to ensure that the goal of the ICA regulations, aviation safety, is achieved.

Sincerely,



Marshall S. Filler
Managing Director & General Counsel
Aeronautical Repair Station Association



Christopher Durocher
Associate Counsel
Aeronautical Repair Station Association

cc w/ all attachments: ARSA ICA Committee
cc w/attachment C: Nick Sabatini James Ballough John Hickey
Attachments Appendix A: Joint Industry Policy
Appendix B: Matrix of Joint Industry Policy
Appendix C: Consolidated FAA/Industry Policy
Appendix D: Minutes of Joint Industry Policy meetings

**APPENDIX A:
JOINT INDUSTRY POLICY**

Joint Industry Policy: Submission to FAA
(August 20, 2004)

I. Summary: The FAA is issuing this proposed policy to clarify the requirements of 14 CFR section 21.50(b) and the pertinent airworthiness standards relating to Instructions for Continued Airworthiness (ICAs). It is also based on guidance contained in AC 33.4-1 (ICAs for Aircraft Engines) and AC 35.4-1 (ICAs for Propellers), Order 8300.10, Change 16 (Major Alterations), Order 8110.42A (Parts Manufacturer Approval Procedures), Order 8150.1B (Technical Standard Order Program) and various Technical Standard Orders.

II. Regulatory Basis: For purposes of this policy, the term “article” means a part, component, accessory, appliance, system, module or assembly that is eligible for installation on a type certificated product (i.e., “product”).

A product or article is airworthy when it conforms to its approved design and is in condition for safe operation. Airworthiness is a critical requirement in the safety chain because it applies equally to the design, manufacturing, operation and maintenance of civil aviation products and other articles. Conformity means that the product or article must be consistent with its type design or other approved technical data. It is in condition for safe operation when factors such as wear, damage, and deterioration do not prevent it from demonstrating compliance with the airworthiness standards and do not result in an unsafe condition.

14 CFR section 21.50(b) requires each holder of a design approval (**including** either a type certificate or supplemental type certificate) for which application was made after January 28, 1981¹ to prepare ICAs (and any changes thereto), to furnish them to the owner of the product and make them available to any person required to comply with those instructions. The specific ICA requirements are contained in the appendices to the airworthiness standards that apply to specific type-certificated products. The appendices also require that maintenance and/or overhaul information be provided for articles installed on these products.

Any person holding a design approval as defined in Section IV would be required to comply with the ICA requirements set forth in this policy. The airworthiness standards require that information “essential to the continued airworthiness of the product” be included in the ICAs. In addition, ICAs must be made available to persons required by 14 CFR Parts 1 through 199 to comply with those

¹ The FAA notes that maintenance and overhaul manuals were required to be prepared long before the current ICA rules were adopted in 1980. For example, engine maintenance manuals were required as early as 1941. They had to be furnished to both owners and maintenance providers. Manuals for other products were required in 1950 (rotorcraft), 1952 (propellers) and airplanes (1970). In 1980, section 21.50(b) extended the “make available” requirements to all type-certificated products and created a standardized ICA format.

instructions, including persons authorized to perform maintenance, preventive maintenance and alterations in accordance with sections 43.3 and 43.7.

III. Safety Justification: In order to ensure the continued airworthiness of type-certificated products, maintenance and alterations must be performed in accordance with Part 43. This requirement applies whether the work is performed on completed type-certificated products or parts, components, sub-assemblies, assemblies, modules and systems (collectively, "articles") prior to their installation on an aircraft, aircraft engine or propeller.

This work is typically performed by an air carrier or repair station that possesses the housing, facilities, equipment, personnel and current data to make airworthy repairs and alterations. **The FAA believes that proper maintenance of these articles is essential to the continued airworthiness of type-certificated products.** Accordingly, this policy will ensure that persons authorized to perform maintenance on components and other articles will have access to basic safety information created by those in the best position to provide it, the design approval holders for the affected product.

IV. Applicability: This policy applies to holders of the following FAA certificates and approvals, collectively referred to as "design approvals" within the meaning of section 21.50(b). Each requires a showing (through appropriate tests, analysis, computations, and/or experience) that the product or article complies with the pertinent airworthiness (i.e., design) standards.

Holders of design approvals listed in numbers 1 through 5, below, must furnish the basic maintenance and overhaul information contained in sections VIII and IX of this policy. Holders of design approvals listed in numbers 6 and 7, below, must first evaluate the validity of the existing ICAs and, if the FAA determines that supplemental ICAs are required, furnish the information contained in section X.

1. Type certificate
2. Amended type certificate and supplemental type certificate (relating to the design change)
3. Major alteration (relating to the alteration)
4. "Original" Parts Manufacturer Approvals (PMA) issued based on a licensing agreement and/or a manufacturer's assist letter
5. Technical Standard Order Authorization (TSOA),
6. PMAs not included in number 4, above.
7. Major repairs performed in accordance with methods, techniques and practices acceptable to the FAA based on approved technical data not contained in the manufacturer's manual.

V. Requirement to Make ICAs Available

The FAA will adopt the following policy regarding the obligation of design approval holders to make this information available. ICAs shall be made available at a fair and reasonable price to maintenance providers and other persons required by the FAR to comply with those instructions. The same price shall be charged to all similarly situated certificate holders. A fair and reasonable price for maintenance providers would be based on recurring and non-recurring costs associated with the development, preparation and distribution of the ICAs beyond that required for initial certification.

The ICAs may be used to perform any regulated activity consistent with the certificate holder's privileges under 14 CFR Parts 1 through 199, including but not limited to performing maintenance on PMA parts if authorized by the PMA holder and the FAA. In addition, a design approval holder may not erect artificial barriers to frustrate the purposes of this policy. This includes insisting that a maintenance provider submit a letter from an operator authorizing it to perform work on the operator's behalf, or requiring an operator to give up its right to receive ICAs in the future if the design approval holder makes them available to a maintenance provider. Section 21.50(b) is clear that the ICAs must be furnished to the owner/operator and made available to any other person required by 14 CFR Parts 1 through 199 to comply with the terms of those instructions. On the other hand, a design approval holder may establish reasonable restrictions on the use of the data, such as requiring a maintenance provider to sign a confidentiality agreement promising not to disclose the ICAs to third parties (except for authorized contractors) without the design approval holder's consent.

VI. Effective Date/Preparation and Make Available Requirements

1. New Design Approvals: Applications for design approval made after (the effective date of this policy) shall include the ICA information specified in this policy. In accordance with section 21.50(b), the ICAs shall be made available upon request to any person authorized to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.
2. Design Approvals obtained on or before (the effective date of this policy)
 - a. The following applies in those cases where ICAs have been prepared as of the effective date of this policy.

(1) Except for holders of TSOA and holders of type certificates, amended type certificates and supplemental type certificates for aircraft engines, each design approval holder that filed its application after January 28,

1981 shall make ICAs available, upon request, to any person authorized (or applying for an authorization) to perform maintenance or preventive maintenance in accordance with sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.

(2) A TSOA holder that submitted its application after August 12, 1981 shall make ICAs available, upon request, to any person receiving an article manufactured under the applicable TSO.

(3) The holder of a type certificate, amended type certificate and supplemental type certificate for an aircraft engine (regardless of the date on which the application was submitted) shall make ICAs available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions. (Note: This information was required to be made available to maintenance providers beginning in 1941.)

b. The following applies in those cases where ICAs have not been prepared as of the effective date of this policy

(1) The holder of a type certificate, amended type certificate or supplemental type certificate for an airplane that submitted its application after 1970 (but prior to the effective date of this policy) must prepare ICAs no later than (12 months after the effective date of this policy). If the application for a type certificate was submitted after January 28, 1981, the ICAs shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.

(2) The holder of a type certificate, amended type certificate or supplemental type certificate for a rotorcraft that submitted its application after 1953 (but prior to the effective date of this policy) must prepare ICAs no later than (12 months after the effective date of this policy). If the application for a type certificate was submitted after January 28, 1981, the ICAs shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions..

(3) The holder of a type certificate, amended type certificate or supplemental type certificate for an aircraft engine that submitted its

application after 1941 must prepare ICAs (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with the terms of those instructions..

(4) A person that obtained a TSOA after August 12, 1981 (but prior to the effective date of this policy) must prepare ICAs (no later than 12 months after the effective date of this policy) in accordance with the pertinent TSO and provide them, upon request, to each person receiving an article manufactured under the TSO.

(5) A person that obtained, after August 4, 1995, a PMA based on the issuance of a license agreement and/or a manufacturer's assist letter, must prepare ICAs (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.

(6) A person that obtained, after August 4, 1995, a PMA for a modification and replacement part other than that described in subparagraph (b)(5) of this section must evaluate whether the existing ICAs for the product are valid with the PMA part installed.

(a) If the FAA determines that the existing ICAs are valid with the PMA part installed, no additional ICAs are required.

(b) If the FAA determines that further information is required to ensure the continued airworthiness of the PMA part, supplemental ICAs shall be prepared in accordance with section X of this policy. In this case, the supplemental ICAs shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3. and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.

(7) A person that obtained a design approval for a major alteration after October 7, 1998 must prepare ICAs (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized (or seeking an authorization) to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.

(8) A person that obtains a design approval for a major repair after (the effective date of this policy) shall evaluate whether the existing ICAs for the product would allow a subsequent maintenance provider to determine whether the major repair was in an airworthy condition.

(a) If the FAA determines that the existing ICAs are adequate to ensure the continued airworthiness of the product or article, the applicant need not develop supplemental ICAs. However, the applicant shall certify on the FAA Form 337 or copy of the customer work order that an evaluation was performed and that the existing ICAs are adequate to determine whether the article may be continued in service.

(b) If the FAA determines that the existing ICAs are not adequate to ensure continued airworthiness, supplemental ICAs shall be prepared in accordance with section X of this policy and attached to the FAA Form 337 or signed copy of the customer work order. In addition, the supplemental ICAs shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3. and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.

VII. General Considerations

1. FAA Emphasis on ICAs: This policy is based on the FAA's belief that ICAs are critical to ensuring aviation safety. Since 1995, the FAA has issued ICA guidance for aircraft engines, propellers, PMA parts and major alterations. This is in addition to the regulatory requirements contained in section 21.50(b), the airworthiness standards (i.e., the ICA appendices) and various TSOs requiring that this information be prepared and made available.
2. Product Level ICAs: This policy makes no change to existing FAA policy insofar as it relates to maintenance performed on a completed (i.e., assembled) aircraft, aircraft engine or propeller. (Therefore, component removals, maintenance performed on installed components and component installations are generally unaffected by this policy because the FAA believes that existing product ICAs adequately address these activities.)
3. TSOA: Since 1981, the FAA has required TSOA holders to prepare maintenance and related information and include it with each article

manufactured under the TSO. While similar to the “make available” standard in section 21.50(b), it is somewhat narrower in scope.

Prior to the effective date of this policy, current TSOA holders must comply with the regulatory standard in the applicable TSO. Therefore, maintenance providers are entitled to obtain this information from the TSOA holder only if they purchase a new unit.

After the effective date of this policy, however, the maintenance manual for the TSO article will be treated like any other ICAs. Therefore, it will be made available under the provisions of section 21.50(b). The FAA will revise the standard TSO data requirements to reflect the new standard for new applications for TSOA.

4. General Content of ICAs: This policy applies to basic maintenance information that the FAA has determined is essential to the continued airworthiness of a type certificated product. The methods, techniques and practices for performing maintenance are generally contained in product and component maintenance and overhaul manuals. Under the pertinent provisions of Part 43 and Part 145, maintenance providers must have these manuals in their possession and generally comply with them when they perform the work. In addition, these manuals are prepared pursuant to contracts between type certificate holders and their suppliers (i.e., customer support agreements) and between type certificate holders and their operator customers. **Under this policy, the ICAs must have the same content for both operators and maintenance providers.**
5. Source-approved repairs: This policy does not require a design approval holder to make available a particular repair unless the FAA has determined that it is essential to continued airworthiness. Therefore, “source-approved repairs” that are not essential to continued airworthiness may be restricted to designated licensees of the design approval holder. However, once included in the ICAs, a repair that is essential to continued airworthiness may not be removed.
6. Component-Level ICAs: In addition to maintenance and alterations performed at the product level, the ICAs should ensure the continued airworthiness of the article being maintained or altered in the shop prior to its installation in a type-certificated product. This will ensure the continued airworthiness of the product as required by the pertinent regulations.

7. Essential to Continued Airworthiness: The FAA has determined that the information contained in the following sections is “essential to the continued airworthiness” of the affected product.

VIII. Maintenance Manual or Section: This section applies to design approval holders described in section IV, numbers 1 through 5.

The Maintenance Manual or Section should include the following information, as appropriate for the article.

Note: A higher-level design approval holder may refer to an accessory, instrument or equipment manufacturer as the source of information for maintaining that article following its removal from the product or higher assembly, provided the information set forth below is actually made available by the manufacturer of the accessory, instrument or equipment.

Similarly, a lower level design approval holder may refer to a higher level design approval holder’s ICAs as the source of information for maintaining that article following its removal from the higher assembly, provided the information set forth below is actually made available by the higher-level design approval holder.

Each article included in a design approval may be addressed individually or as part of a group or system. The lack of specific instructions for any particular article should not adversely affect an operator’s ability to maintain the product in an airworthy condition.

1. A description of the article’s features and data and its components, systems, and installations should contain enough detail to perform maintenance and preventive maintenance.
2. A description of the control and operation of the article’s components and systems should also provide enough detail to perform the maintenance at the levels specified in the ICA.
3. 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 be installed on the type-certificated product at a later date.
4. The scheduling information provided 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 the continued airworthiness of the article.

5. If the article is removed from the type-certificated product, the ICA should provide maintenance and/ or overhaul instructions to determine its eligibility for reinstallation on an aircraft and continued service use. The disassembly of the article to the piece-part level may be required before returning it to service if the exposure occurs after a considerable number of hours in service.
6. An inspection program to ensure the continued airworthiness of the article. Certification tests, analyses, and service experience, if available, should be used to develop the inspection program.
7. Troubleshooting information to address potential malfunctions and provide procedures to rectify them or replace the affected part or component before continued operation.
8. A means to ensure configuration control during maintenance in the ICA. This should ensure that the proper parts, components, and combinations of parts and components are identified and conform to the approved design.
9. The list of tools for maintenance should be adequate for completing the work. It may include lists located in the sections of the ICA in which the work is described. However, the list of tools and equipment should be located in a manner that facilitates locating and ordering the tools and equipment. Also, the list should include a cross-reference to the section in which the method of using each tool is described. Special tools should be noted, as there is a specific regulatory requirement for the use of a special tool when performing maintenance. Calibration requirements should be listed where applicable.

IX. Overhaul Manual or Section: This section applies to design approval holders described in section IV, numbers 1 through 5.

The overhaul manual or section should include the following information, as appropriate for the article.

Note: A higher-level design approval holder may refer to an accessory, instrument or equipment manufacturer as the source of information for overhauling that article following its removal from the product or higher assembly,

provided the information set forth below is actually made available by the manufacturer of the accessory, instrument or equipment.

Similarly, a lower level design approval holder may refer to a higher level design approval holder's ICAs as the source of information for overhauling that article following its removal from the higher assembly, provided the information set forth below is actually made available by the higher-level design approval holder.

Each article included in a design approval may be addressed individually or as part of a group or system. The lack of specific instructions for any particular article should not adversely affect an operator's ability to maintain the product in an airworthy condition.

1. The TC holder should clearly define what level or amount of inspection and repair or replacement of parts constitutes an overhaul. This is needed because the article must be designed and constructed to minimize the development of an unsafe condition between overhaul periods. This includes articles that are part of the approved design.
2. Recommended overhaul periods
3. Sufficient details for the disassembly, cleaning, inspection, repairing as necessary, reassembling, final inspecting and/or testing of the article. Necessary warnings and guidance should also be provided.
4. A means to ensure configuration control so that the proper parts, components, and any combinations that comply with the approved design are identified during assembly or replacement.
5. Cleaning instructions. The ICA should emphasize the proper cleaning methods and contain appropriate warnings if improper cleaning could adversely affect the quality of the inspection.
6. When piece parts and components are exposed, they should be subjected to appropriate inspections to determine their eligibility for reinstallation in the top assembly for continued service. An adequate inspection program for the article, with threshold or opportunity inspections, is essential for the continued airworthiness of the type-certificated product.
7. The accuracy and reliability of inspection techniques should be consistent with the criticality of the parts being inspected and the types of defects for which the part is being inspected. The ICA should identify parts and key

- features or areas for which special emphasis or a higher awareness is needed to assure continued airworthiness.
8. Adequate inspection criteria should enable the appropriate inspection of each part, sub-assembly, assembly, module, system and component. Inspections should identify the required action at each level, such as part replacement, repair, or further detailed inspection.
 9. Details for all fits and clearances for the article and components, structural integrity, and functionality of new and worn parts.
 10. Worn or substandard parts that do not meet the ICA inspection limits cannot be returned to service. To ensure airworthiness, such parts should be either replaced or repaired. While the ICA does not have to include repairs for all piece parts, it should identify when or under what conditions parts must be replaced or repaired. If a part or component fails to meet the inspection requirements of the ICA, replacement is an acceptable alternative to repair. However, the design approval holder should at a minimum provide inspection techniques and criteria to enable a determination of continued airworthiness.
 11. The FAA may allow and approve other repair data that is not part of the approved design and is not reflected in the ICA. However, when design change data for repair or alteration constitutes a major change to the approved design, the need for such repair or alteration information in the ICA should be evaluated, because the repair or alteration could introduce a new feature that does not exist in the original approved design. This is particularly true for an STC.
 12. Test acceptance criteria. They can be identified as limits, although not as an airworthiness limitation.
 13. Calibration requirements (frequency, accuracy, and protocol to be used) for all testing and measurement equipment used to return the article and its component parts to service.
 14. Instructions for testing the article after overhaul.
 15. Special containers, equipment, and tools that may be necessary to comply with the instructions for storage should be identified. The storage limits should also include any environmental restrictions, such as limits for temperature or humidity.

16. The list of tools for overhaul should be adequate for completing the work. It may include lists located in other sections of the ICA in which the work is described. Also, the list should include a cross-reference to the section in which the method of using each tool is described or the tools are used. Any special tools should be highlighted, because section 43.13 requires the use of special tools when performing maintenance.

X. ICA Information for Design Approvals Described in Section IV, numbers 6 and 7.

Evaluation Required: Design approval holders described in section IV, numbers 6 and 7, shall conduct an evaluation to determine whether the existing ICAs are adequate to ensure the continued airworthiness of the product with the PMA part installed or with the major repair applied. If the FAA determines that the existing ICAs are not adequate, supplemental ICAs must be developed and submitted during the PMA application process (in accordance with FAA Order 8110.42A or in conjunction with the FAA's evaluation and approval of the technical data supporting a major repair).

Supplemental ICAs: Minimum Information Required

If supplemental ICAs are required to ensure continued airworthiness, the following instructions must be provided, at a minimum:

1. Cleaning instructions. Cleaning could have a significant effect on inspections, as improper cleaning could result in missing potentially hazardous defects. Therefore, the ICA should emphasize the proper cleaning methods, with the appropriate cautions when improper cleaning could adversely affect the quality of the inspection.
2. When piece parts and components are exposed, they should be subjected to appropriate inspections to determine their eligibility for reinstallation in the top assembly for continued service. An adequate inspection program for the article, with threshold or opportunity inspections, is essential for the continued airworthiness of the type-certificated product.
3. The accuracy and reliability of inspection techniques should be consistent with the criticality of the parts being inspected and the types of defects for which the part is being inspected. The ICA should identify parts and key features or areas for which special emphasis or a higher awareness is needed to assure continued airworthiness.

4. Adequate inspection criteria should enable the appropriate inspection of each part, sub-assembly, assembly, module, system and component. Inspections should identify the required action at each level, such as part replacement, repair, or further detailed inspection.

5. Worn or substandard parts that do not meet the ICA inspection limits cannot be returned to service. To ensure airworthiness, such parts should be either replaced or repaired. While the ICA does not have to include repairs for all piece parts, it should identify when or under what conditions parts must be replaced or repaired. If a part or component fails to meet the inspection requirements of the ICA, replacement is an acceptable alternative to repair. However, the design approval holder should at a minimum provide inspection techniques and criteria to enable a determination of continued airworthiness.

**APPENDIX B:
JOINT INDUSTRY POLICY MATRIX**

**Joint Industry Policy
(August 20, 2004)**

Design Approval	Pertinent Regulation	Current Guidance	Component Maintenance Information	Date ICAs First Required to be Prepared/Made Available to Maintenance Providers	Proposed Policy
Type Certificates					
Aircraft	21.50(b) ¹ , 23.1529/ Appendix G; 25.1529/ Appendix H, 27.1529/ Appendix A; 29.1529/ Appendix A, 31.82/App. A	N/A	Component manufacturer may provide ICAs; otherwise, TCH must provide information “essential to the continued airworthiness” of the aircraft ²	Preparation: 1953 (rotorcraft) 1970 (airplanes) ----- Make Available to Maintenance Providers: 1980	No change from existing policy at the aircraft level; however, information necessary to maintain appliances, ³ (including each part of the airplane and its engines, APUs, propellers, accessories instruments and equipment) following their removal from the aircraft would be required. (See Proposed Policy, Sections VIII and IX)

¹ All citations are to Title 14 Code of Federal Regulations (CFR) unless otherwise specified.

² ICAs for components have typically focused on maintenance performed while the component is installed on the type-certificated product, removal and replacement information. This policy clarifies that the ICA requirements also apply to maintenance and alterations performed on an article following its removal from a type-certificated product.

³ Appliance means any instrument, mechanism, equipment, part, apparatus, appurtenance, or accessory, including communications equipment that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft and is not part of an airframe, engine or propeller (Part 1).

Design Approval	Pertinent Regulation	Current Guidance	Component Maintenance Information	Date ICAs First Required to be Prepared/Made Available to Maintenance Providers	Proposed Policy
Aircraft Engines	21.50(b), 33.4 and Appendix A	AC 33.4-1 ⁴	Component manufacturer may provide; otherwise, TCH must provide information “essential to the continued airworthiness” of the engine	Prepared: 1941 ----- Made available: 1941 ⁵	No change from existing policy at the engine level; however, information necessary to maintain each part following its removal from the engine would be required. (See Proposed Policy, Sections VIII and IX)
Propellers	21.50(b), 35.4 and Appendix A	AC 35.4-1 ⁶	Comp. mfg. may provide; otherwise, TCH must provide information “essential to the continued airworthiness” of the propeller	Preparation: 1952 ----- Make available: 1980	No change from existing policy at the propeller level; however, information necessary to maintain each part following its removal from the propeller would be required. (See Proposed Policy, sections VIII and IX))

⁴ Worn or substandard parts that do not meet ICA inspection limits cannot be approved for return to service. While the ICAs need not contain repairs for all engine parts, they should identify when or under what conditions the parts must be repaired or replaced. Either alternative is acceptable. Repairs in the ICAs should be complete ... may include personnel training requirements but should not be driven solely by economic concerns.

⁵ From 1941 until 1952, engine maintenance and overhaul manuals were required to be made available to maintenance providers. From 1951 until 1980, there was no specific provision regarding the availability of these manuals.

⁶ Worn or substandard parts that do not meet ICA inspection limits cannot be approved for return to service. While the ICAs need not contain repairs for all propeller parts, they should identify when or under what conditions the parts must be repaired or replaced. Either alternative is acceptable. Repairs in the ICAs should be complete ... may include personnel training requirements.

Design Approval	Pertinent Regulation	Current Guidance	Component Maintenance Information	Date ICAs First Required to be Prepared/Made Available to Maintenance Providers	Proposed Policy
Supplemental/Amended Type Certificates (all)	21.50(b); see specific product rules	See specific product	See specific product rules; ICAs required to address the major change in type design	See aircraft, aircraft engines and propellers	No change from existing policy at the product level; however, information necessary to maintain articles removed from the affected product would be required (if they are part of the design change).
Major Alterations	21.50(b); see specific product rules	Order 8300.10, Change 16	See ICA checklist in Order 8300.10, Change 16	Preparation: 10/7/98 (see Change 16, Order 8300.10) ----- Make Available: 10/7/98	No change from existing policy at the product level; however, information necessary to maintain articles following their removal from the affected product would be required (if they are part of the major alteration).

Design Approval	Pertinent Regulation	Current Guidance	Component Maintenance Information	Date ICAs First Required to be Prepared/Made Available to Maintenance Providers	Proposed Policy
Articles⁷					
“Original” PMAs issued based on a licensing agreement and/or a manufacturer’s assist letter	21.50(b)	8110.42A	For TC’d products issued a design approval after <u>January 28, 1981</u> : Information showing that the ICAs for the product are still valid with the PMA part installed; otherwise, supplemental ICAs are required. ⁸	Preparation: 8/04/95 (Order 8110.42 ----- Make available: 8/04/95	See Proposed Policy, Section VIII and IX for information essential to the continued airworthiness of the product on which the PMA part will be installed. This requires the PMA holder to provide basic maintenance and overhaul information for the part.
TSOA articles	21.50(b) and specific TSO	Specific TSO; Order 8150.1B, paragraph 22	CMM to contain information on periodic maintenance, calibration which are necessary for cont’d airworthiness	Preparation: as early as 1981 ----- To each person receiving a TSO article: as early as 1981	See Proposed Policy, sections VIII and IX for information essential to the continued airworthiness of the product on which the TSO article will be installed. This requires the TSOA holder to provide basic maintenance and overhaul information for the article.

⁷ For purposes of this policy, the term “article” means a part, component, accessory, appliance, system, module or assembly that is eligible for installation on a type certificated product or has been issued a stand-alone design approval, such as a TSOA.

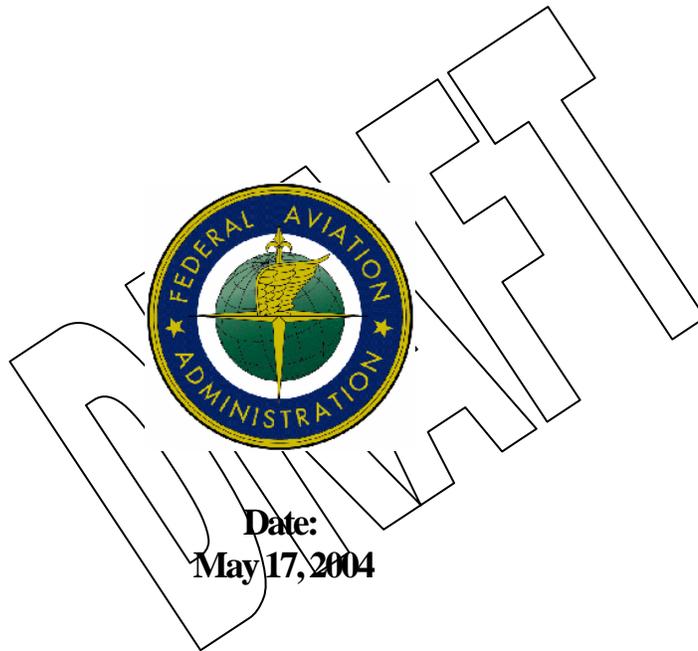
⁸ If the product on which the PMA part is eligible for installation was issued a design approval on or before January 28, 1981, the PMA applicant must provide maintenance instructions if the design approval holder’s ICAs were inadequate (page 23).

Design Approval	Pertinent Regulation	Current Guidance	Component Maintenance Information	Date ICAs First Required to be Prepared/Made Available to Maintenance Providers	Proposed Policy
Other					
<ul style="list-style-type: none"> • PMAs other than those listed on page 4, above • Major repairs based on approved technical data not contained in the manufacturer's manual 	21.50(b); pertinent TSO, for major repairs 65.95(d)(1), 121.379(b), 135.437(b) and 145.51(d))	8110.42A, 8110.37C (DER Handbook) AC 33.4-1 AC 35.4-1	Evaluation made to determine whether ICAs for the product are still valid with the PMA part installed; otherwise supplemental ICAs are required	None	Evaluation made to determine whether ICAs for the product are still valid with the PMA part installed or the major repair applied; otherwise supplemental ICAs are required. If supplemental ICAs are required they would include, as a minimum, cleaning instructions, inspection techniques and inspection criteria based on part criticality and defects being inspected for, further action required (i.e., repair, replacement or further detailed inspection) (See Proposed Policy, section X)

**APPENDIX C:
CONSOLIDATED FAA/INDUSTRY POLICY**

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

RESPONSIBILITIES, REQUIREMENTS, AND CONTENTS



Date:
May 17, 2004

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

FOREWORD

In this order we offer guidance on responsibilities, requirements, and contents 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 Aircraft Certification Service and Aircraft Evaluation Group staffs 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.ICA. If you urgently need an interpretation, contact AIR-140 at 405-954-7066. Always use Form 1320-19 to follow up each verbal conversation.

Nicholas Sabatini
Associate Administrator, Regulation and Certification, AVR-1

DRAFT

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CHAPTER 1. PURPOSE AND ORDER ADMINISTRATION

1-1. Purpose.

a. This order supplements and clarifies the requirements of Title 14 of the Code of Federal Regulations (CFR) § 21.50(b), and the appendices of §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, and 35.4, which from now on we call “the applicable regulations.” It is also based on guidance contained in AC 33.4-1 (ICA for Aircraft Engines) and AC 35.4-1 (ICA for Propellers), Order 8300.10, Change 16 (Major Alterations), Order 8110.42A (Parts Manufacturer Approval Procedures), Order 8150.1B (Technical Standard Order Program) and various Technical Standard Orders.

b. In order to ensure the continued airworthiness of type-certificated products, maintenance and alterations must be performed in accordance with Part 43. This requirement applies whether the work is performed on completed type-certificated products or parts, components, sub-assemblies, assemblies, modules and systems (collectively, “articles”) prior to their installation on an aircraft, aircraft engine or propeller.

c. This work is typically performed by an air carrier or repair station that possesses the housing, facilities, equipment, personnel and current data to make airworthy repairs and alterations. The FAA believes that proper maintenance of these articles is essential to the continued airworthiness of type-certificated products. Accordingly, this policy will ensure that persons authorized to perform maintenance on components and other articles will have access to basic safety information created by those in the best position to provide it, the design approval holders for the affected product.

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 Division and Flight Standards Staff.

1-3. Cancellation. This order cancels the following orders and policy memorandums.

a. Order 8110.50, Submitting Instructions for Continued Airworthiness for Type Certificates, Amended Type Certificates and Supplemental Type Certificates, dated October 20, 2003.

b. Office of Airworthiness Policy Memorandum, Interpretation of FAR 21.50B, dated August 3, 1982.

c. Office of Airworthiness Policy Memorandum, Interpretation of FAR 21.50B, dated August 8, 1983.

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. 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 for guidance on keeping or disposing of records.

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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 product's applicable appendix to §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, and 35.4 (from now on called the "applicable airworthiness regulations"), which contain the specific ICA requirements that apply to specific type-certificated products. The applicable airworthiness regulations also require that maintenance and/or overhaul information be provided for articles installed on these products. Design approval holders, as defined in paragraph 2-4 have to give the make ICA available to product owners and any other person required to comply with the ICA those instructions

b. The airworthiness standards regulations require that information "essential to the continued airworthiness of the product" be included in the ICA. In addition, ICA must be made available to persons required by 14 CFR Parts 1 through 199 to comply with those instructions, including persons authorized to perform maintenance, preventive maintenance and alterations in accordance with sections 43.3 and 43.7. The airworthiness regulations also require that ICA be acceptable to the Administrator. That is the basis for our review and acceptance. It is the design approval holder's responsibility to ensure that there is enough information in the ICA to maintain the continued airworthiness of the product.

2-2. Effective Date/Preparation and Make Available Requirements

~~a. 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 in determining whether ICA are required. We use the date of the application for design approval. For example, in 1965 we required an application for a type certificate (TC) with a certification basis of CAR 4b to develop maintenance instructions, but we did not require the information to be furnished. Today, a design approval holder of a supplemental type certificate (STC) or amended TC for this same product must furnish ICA that meets the applicable regulations per 14 CFR § 21.50(b), even though the original certification basis did not require this.~~

~~b. 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 the ACO, ECO, and AEG determine that there isn't enough information to maintain the product's airworthiness. Airworthiness concern investigations, assessments of potential unsafe conditions, or special certification reviews can reveal such deficiencies.~~

a. New Design Approvals: Applications for design approval made after (the effective date of this policy) shall include the ICA information specified in this policy. In accordance with section 21.50(b), the ICA shall be made available upon request to any person authorized to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.

b. Design Approvals obtained on or before (the effective date of this policy)

1. The following applies in those cases where ICA have been prepared as of the effective date of this policy:
 - i. Except for holders of TSOA and holders of type certificates, amended type certificates and supplemental type certificates for aircraft engines, each design approval holder that filed its application after January 28, 1981 shall make ICA available, upon request, to any person authorized (or applying for an authorization) to perform maintenance or preventive maintenance in accordance with sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.
 - ii. A TSOA holder that submitted its application after August 12, 1981 shall make ICA available, upon request, to any person receiving an article manufactured under the applicable TSO.
 - iii. The holder of a type certificate, amended type certificate and supplemental type certificate for an aircraft engine (regardless of the date on which the application was submitted) shall make ICA available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions. (Note: This information was required to be made available to maintenance providers beginning in 1941.)
2. The following applies in those cases where ICA have not been prepared as of the effective date of this policy:
 - i. The holder of a type certificate, amended type certificate or supplemental type certificate for an airplane that submitted its application after 1970 (but prior to the effective date of this policy) must prepare ICA no later than (12 months after the effective date of this policy). If the application for a type certificate was submitted after January 28, 1981, the ICA shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.
 - ii. The holder of a type certificate, amended type certificate or supplemental type certificate for a rotorcraft that submitted its application after 1953 (but prior to the effective date of this policy) must prepare ICA no later than (12 months after the effective date of this policy). If the application for a type certificate was submitted after January 28, 1981, the ICA shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.

- iii. The holder of a type certificate, amended type certificate or supplemental type certificate for an aircraft engine that submitted its application after 1941 must prepare ICA (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with the terms of those instructions.
- iv. A person that obtained a TSOA after August 12, 1981 (but prior to the effective date of this policy) must prepare ICA (no later than 12 months after the effective date of this policy) in accordance with the pertinent TSO and provide them, upon request, to each person receiving an article manufactured under the TSO.
- v. A person that obtained, after August 4, 1995, a PMA based on the issuance of a license agreement and/or a manufacturer's assist letter, must prepare ICA (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.
- vi. A person that obtained, after August 4, 1995, a PMA for a modification and replacement part other than that described in subparagraph (2)(v) of this paragraph must evaluate whether the existing ICA for the product are valid with the PMA part installed.
 - 1. If the FAA determines that the existing ICA are valid with the PMA part installed, no additional ICA are required.
 - 2. If the FAA determines that further information is required to ensure the continued airworthiness of the PMA part, supplemental ICA shall be prepared in accordance with paragraph 4-15 of this policy. In this case, the supplemental ICA shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3. and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.
- vii. A person that obtained a design approval for a major alteration after October 7, 1998 must prepare ICA (no later than 12 months after the effective date of this policy) and make them available, upon request, to any person authorized (or seeking an authorization) to perform maintenance and alterations under sections 43.3 and 43.7 and any other person required by Parts 1 through 199 to comply with those instructions.

- viii. A person that obtains a design approval for a major repair after (the effective date of this policy) shall evaluate whether the existing ICA for the product would allow a subsequent maintenance provider to determine whether the major repair was in an airworthy condition.
1. If the FAA determines that the existing ICA are adequate to ensure the continued airworthiness of the product or article, the applicant need not develop supplemental ICA. However, the applicant shall certify on the FAA Form 337 or copy of the customer work order that an evaluation was performed and that the existing ICA are adequate to determine whether the article may be continued in service.
 2. If the FAA determines that the existing ICA are not adequate to ensure continued airworthiness, supplemental ICA shall be prepared in accordance with paragraph 4-15 of this policy and attached to the FAA Form 337 or signed copy of the customer work order. In addition, the supplemental ICA shall be made available, upon request, to any person authorized (or applying for an authorization) to perform maintenance under sections 43.3. and 43.7 and to any other person required by Parts 1 through 199 to comply with those instructions.

2-3 Design Approvals Needing ICA. We classify *all* the following as design approvals, and require design approval holders to distribute acceptable ICA per § 21.50(b):

- a. TCs
- b. Amended TCs
- c. Changes to type design approved under §§ 21.97, and 21.99
- d. STCs
- e. Amended supplemental type certificates

2-3. Purpose of ICA.

a. FAA Emphasis on ICA. This policy is based on the FAA's belief that ICA are critical to ensuring aviation safety. Since 1995, the FAA has issued ICA guidance for aircraft engines, propellers, PMA parts and major alterations. This is in addition to the regulatory requirements contained in section 21.50(b), the airworthiness standards (i.e., the ICA appendices) and various TSOs requiring that this information be prepared and made available.

b. Product Level ICA. This policy makes no change to existing FAA policy insofar as it relates to maintenance performed on a completed (i.e., assembled) aircraft, aircraft engine or propeller. (Therefore, component removals, maintenance performed on installed components and

component installations are generally unaffected by this policy because the FAA believes that existing product ICA adequately address these activities.)

c. Instructions for Continued Airworthiness must describe the applicable methods, inspections, processes and procedures for maintaining a product or article in an airworthy condition. This includes inspections or other procedures to prevent catastrophic failure.

d. A product or article is airworthy when it conforms to its approved design and is in condition for safe operation. Airworthiness is a critical requirement in the safety chain because it applies equally to the design, manufacturing, operation and maintenance of civil aviation products and other articles. Conformity means that the product or article must be consistent with its type design or other approved technical data. It is in condition for safe operation when factors such as wear, damage, and deterioration do not prevent it from demonstrating compliance with the airworthiness standards and do not result in an unsafe condition.

2-4. Applicability:

a. This policy applies to holders of the following FAA certificates and approvals, collectively referred to as “design approvals” within the meaning of section 21.50(b). Each requires a showing (through appropriate tests, analysis, computations, and/or experience) that the product or article complies with the pertinent airworthiness (i.e., design) standards.

b. Holders of design approvals listed in numbers 1 through 5, below, must furnish the basic maintenance and overhaul information contained in paragraphs 4-12 and 4-14 of this policy. Holders of design approvals listed in numbers 6 and 7, below, must first evaluate the validity of the existing ICA and, if the FAA determines that supplemental ICA are required, furnish the information contained in paragraph 4-15.

- (1) Type certificate
- (2) Amended type certificate and supplemental type certificate (relating to the design change)
- (3) Major alteration (relating to the alteration)
- (4) “Original” Parts Manufacturer Approvals (PMA) issued based on a licensing agreement and/or a manufacturer’s assist letter
- (5) Technical Standard Order Authorization (TSOA).
- (6) PMAs not included in number 4, above.
- (7) Major repairs performed in accordance with methods, techniques and practices acceptable to the FAA based on approved technical data not contained in the manufacturer’s manual.

2-5. Parts Manufacturer Approval (PMA) May Change ICA. Although a PMA is a design and production approval and does not authorize installation, ICA for the part and eligible

products must still be considered. See Order 8110.42A, *Parts Manufacturer Approval Procedures*, for additional information.

2-6. ICA for TSO authorization and Import TSO's (Letter of TSO design approval) ~~only applies if the TSO requires ICA or maintenance instructions. If so, then we must review and accept the ICA as with all other design approvals. For example, see Appendix 4 of TSO C77b, *Gas Turbine Auxiliary Power Units*. In it, applicants must provide ICA similar to that required in § 33.4, Appendix A.~~

a. Since 1981, the FAA has required TSOA holders to prepare maintenance and related information and include it with each article manufactured under the TSO. While similar to the "make available" standard in section 21.50(b), it is somewhat narrower in scope.

b. Prior to the effective date of this policy, current TSOA holders must comply with the regulatory standard in the applicable TSO. Therefore, maintenance providers are entitled to obtain this information from the TSOA holder only if they purchase a new unit.

c. After the effective date of this policy, however, the maintenance manual for the TSO article will be treated like any other ICA. Therefore, it will be made available under the provisions of section 21.50(b). The FAA will revise the standard TSO data requirements to reflect the new standard for new applications for TSOA.

2-7. Major Repairs May Change ICA. Although most repairs do not change existing maintenance practices or inspection intervals, they must still be assessed for changes to ICA or existing maintenance practices. For example, major structural repairs may need more inspection. The owner/operator needs to know that, and the ICA should reflect the additional maintenance and inspection requirements.

2-8. Major Alterations May Change ICA. Major alterations are subject to the same airworthiness requirements as the product. Therefore, all major alterations must be assessed for changes to the product level ICA and subsequently provided to the owner of the product. See Order 8300.10, *Airworthiness Inspectors Handbook*, for additional information on the requirement for ICA on Major Alterations.

2-9. ICA in Manufacturers' Service Documents. We consider FAA-approved portions of service documents as changes to the type design. They constitute a design approval, and are subject to the applicable airworthiness requirements and § 21.50(b). Consequently, we expect the manufacturer to assess this change to type design and provide for inclusion into the ICA all necessary information to correctly maintain the product, part, or appliance throughout its life. The manufacturers service document can serve as the ICA if all required information for the change to type design is contained within the document and subsequently provided to all owners of the product.

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 and have been later modified for a special purpose. The section says this aircraft can receive a restricted category TC. ICA for the aircraft,

engines, appliances and any alterations for the special purpose operation are required before a TC under this category can be issued. The ICA should contain the information required by the applicable airworthiness standards for the aircraft type (parts 23, 25, 27, or 29).

Take, for example, a surplus aircraft manufactured entirely for the military: a U.S. Army UH-1D helicopter. This aircraft requires a complete TC. The design approval holder must provide acceptable ICA to the owner .

b. Military surplus aircraft certificated under § 21.27(b) may require ICA if the regulations required ICA when the aircraft was accepted for operational use by the armed forces, or if the TC is applied for after January 28, 1981.

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CHAPTER 3. ICA FORMAT AND TYPES OF DATA

3-1. What the ICA Should Include, Overall.

a. ICA for each aircraft must include:

- (1) ICA for each engine, propeller, and appliance required by the applicable airworthiness regulations, and
- (2) ICA for all appliances or products installed on the aircraft not required by the airworthiness regulations, otherwise known as owner options.
- (3) Any required information about the interface of those appliances and products with the aircraft.

b. ~~If a part or component is exceptionally complex (needing specialized maintenance techniques, test equipment, or expertise), you can permit an applicant to refer to the manufacturer of an accessory, instrument, or equipment as the source of this information. The applicant must clearly cross-reference the part or component manufacturer's instructions by Part number revision level and/or date of publication in their ICA. Those instructions are incorporated by reference and now become part of the complete ICA, and must be provided to the owner by the design approval holder as required by § 21.50(b). This policy applies to basic maintenance information that the FAA has determined is essential to the continued airworthiness of a type certificated product. The methods, techniques and practices for performing maintenance are generally contained in product and component maintenance and overhaul manuals. Under the pertinent provisions of Part 43 and Part 145, maintenance providers must have these manuals in their possession and generally comply with them when they perform the work. In addition, these manuals are prepared pursuant to contracts between type certificate holders and their suppliers (i.e., customer support agreements) and between type certificate holders and their operator customers. Under this policy, the ICA must have the same content for both operators and maintenance providers.~~

c. Source-approved repairs: This policy does not require a design approval holder to make available a particular repair unless the FAA has determined that it is essential to continued airworthiness. Therefore, "source-approved repairs" that are not essential to continued airworthiness may be restricted to designated licensees of the design approval holder. However, once included in the ICA, a repair that is essential to continued airworthiness may not be removed.

d. Component-Level ICA: In addition to maintenance and alterations performed at the product level, the ICA should ensure the continued airworthiness of the article being maintained or altered in the shop prior to its installation in a type-certificated product. This will ensure the continued airworthiness of the product as required by the pertinent regulations.

3-2. Format.

a. ACOs should instruct 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, with a reader staying with one chapter or diagram while performing a task. If there are multiple manuals, there should be a principal manual with a description and application of the manuals, plus a table of contents of all other manuals. We consider the principal manual as the one used for day-to-day maintenance of the aircraft, engine or propeller, and not overhaul manuals, component maintenance manuals, MRB reports or service bulletins. You can refer applicants to sample formats in the Air Transport Association's iSpec 2200, *Information Standards for Aviation Maintenance*, 2003 edition, and General Aviation Manufacturers Association's Specification No. 2, *Maintenance Manual*, dated September 1, 1982.

b. If previous ICA or maintenance documents do not exist, or were developed before January 28, 1981, you should expect the ICA submitted for a subsequent design change (after January 28, 1981) to follow the format requirements in the appropriate airworthiness standards. However, you should review any submittal of ICA containing the essential information for acceptance, regardless of the format.

3-3. Types of Data for Specific Approvals.

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

(1) Must include, as a minimum, instructions for maintenance and preventive maintenance, and inspection requirements in 14 CFR part 43, Appendices A and D.

(2) Must be specific to the product, not general. It has 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 FAA Advisory Circular (AC) 43-13, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*, for installation and maintenance instructions. That guidance is general. It allows an owner, operator, or installer to choose many options for installation or maintenance. Although there are some standard practice manuals that 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 established by the certification basis.

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, a new aircraft being type certificated to 14 CFR part 25 should have 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 have all required information in the appendix of the applicable regulations as shown in chapter 4 of this document. Applicants can use ICA from the baseline product where the processes and procedures are

identical to the new model. New ICA must be developed to cover differences between the earlier version and a new product.

d. *ICA for an STC* should cover only the items affected by the design change for which application is made, plus other systems, parts, or areas of the aircraft affected by the design change. For example, if an STC installs a Global Positioning Satellite (GPS) system, ICA for the engine will not be affected and doesn't need to be addressed. However, the submitted ICA must include all of the applicable items from the applicable regulations for the installation. In addition, the ICA must include any appropriate information pertaining to 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 § 21.50(b).

If the design change does not impact or change the existing ICA or maintenance documentation, the applicant can submit an *assessment* of the need for ICA to satisfy 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.

e. *ICA for all other changes to products* including changes to type design approved under §§ 21.95 and 21.99, parts manufacturer approval (PMA), and major repairs or alterations must cover the items impacted or changed by the incorporation of the design change for which application is made, plus any other systems, parts, or areas of the aircraft affected by the design change. Managing ACO/ECO and AEG offices will help an applicant determine the final content requirements.

If the design change does not impact or change the existing ICA or maintenance documentation, the applicant can submit an *assessment* of the need for ICA to satisfy 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.

f. Appendices 1-7 of this order are checklists for each specific product. They tell what items you must address for each.

CHAPTER 4. REQUIRED MANUALS OR SECTIONS

4-1. Essential to Continued Airworthiness. The FAA has determined that the information contained in the following paragraphs is “essential to continued airworthiness” of the affected product.

4-2. Airworthiness Limitations Section (ALS).

a. For an aircraft, balloon, engine, or propeller, there must be a separate and distinguishable ICA section, called “Airworthiness Limitations.” If the ICA consists of multiple manuals, require applicants to include the ALS in the principal manual. We consider the principal manual as the one used for day-to-day maintenance of the aircraft, engine, or propeller, and not overhaul manuals, component maintenance manuals, MRB reports or service bulletins. The ALS must prominently display this statement: “**The Airworthiness Limitations Section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved.**” Require applicants to include the following:

- (1) Mandatory replacement times for type certification.
- (2) Mandatory inspection times for type certification.
- (3) Inspection procedures for those mandatory times.

b. We consider paragraphs 4-1(a)(1) through 4-1(a)(3) critical, because if an aircraft, balloon, engine, or propeller does not comply with those inspection and replacement times and procedures, a catastrophe could result. These items are typically identified by applicants as they make safety assessments on both the structure and systems of the product.

c. Examples of items required for type certification are structural inspections per § XX.571, and fuel system requirements per § 25.981 (Transport Category Aircraft).

d. See 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 for the regulatory requirements.

4-3. Certification Maintenance Requirements (CMR) (for Transport Category Airplane) are required inspections or maintenance tasks. They apply to equipment, systems, and powerplant installations, and are performed at certain times to detect or correct safety-significant latent failures (failures not known to the crew). These latent failures, combined with one or more other specific failures or events, can cause hazards or catastrophes. CMRs are necessary to maintain a product’s airworthiness. We consider CMRs as part of the ICA. See AC 25-19, *Certification Maintenance Requirements*, for additional information.

4-4. Maintenance Review Board (MRB) Report (Transport Category Aircraft). 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 use the MRB, and its associated requirements, to develop maintenance programs. See AC 121-22A, *Maintenance Review Board Procedures*, for additional information.

4-5. Aircraft/Rotorcraft Maintenance.

a. This manual must explain aircraft/rotorcraft features, and include aircraft/rotorcraft maintenance or preventive maintenance information, 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 all required equipment and precautions.
- (3) Description of how the system operates and is controlled, including special procedures and limitations.
- (4) Description of how to adjust and test the system, plus required equipment and precautions.
- (5) Description of probable malfunctions, and how to recognize and correct them.
- (6) Servicing procedures, including servicing points (location and access), capacities of tanks and reservoirs, types of fluid used, required equipment and precautions.
- (7) Aircraft/rotorcraft towing instructions, including required equipment and precautions.
- (8) Aircraft/rotorcraft jacking, mooring, and leveling instructions (including required equipment and precautions).
- (9) Lifting and shoring instructions, including required equipment and precautions.
- (10) Weight and balance instructions to determine the center of gravity.
- (11) List of equipment required to complete all work. There may be several lists, each in the sections of the ICA where the work is described. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Instruct applicants to highlight them.
- (12) The applicant's inspection program with the frequency and extent of the inspections necessary to sustain continued airworthiness.

b. See 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) for the regulatory requirements.

4-6. Balloon Maintenance.

a. This manual must explain the balloon's features and describe maintenance or preventive maintenance, including:

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

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

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

(4) How to adjust and test the system, including all required equipment and precautions.

(5) Description of probable malfunctions, how to recognize and correct them.

(6) Servicing procedures that include balloon components, including burner nozzles, fuel tanks, valves during operation, and any required equipment and precautions.

(7) Hard landing inspection items and procedures.

(8) Balloon storage preparation and limits.

(9) How to repair the balloon envelope, its basket or trapeze.

(10) The applicant's inspection program with the frequency and extent of the inspections necessary to sustain continued airworthiness.

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

4-7. Engine Maintenance.

a. This manual or section must cover the engine's features and what is necessary for engine maintenance or preventive maintenance, including the following:

(1) Description of engine features, systems, and installations.

(2) Removal and installation instructions for parts and accessories with warnings, cautions, and notes that are part of the engine type design.

(3) Description of how the engine components, systems, and installations operate; how to start, run, test, and stop the engine and its parts, including any special procedures and limitations.

(4) How to adjust and test a system, including all required equipment and precautions.

(5) Description of probable malfunctions, how to recognize and correct them.

(6) Servicing procedures with servicing points (location and access), capacities of tanks and reservoirs, types of fluid used, and any required equipment and precautions. Procedures must cover both engine type design parts and systems or components either installed integrally or dependent on the engine.

(7) List of required equipment to complete all work. There may be several lists, each in the ICA sections where the work is described. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Instruct applicants to highlight them.

(8) Schedule for each part of the engine with the recommended times for cleaning, inspecting, adjusting, testing, and lubricating. Applicants should add the depth of inspection required, applicable wear tolerances, and tasks at those times.

(9) Schedule for part removal, replacement, or overhaul, cross-referenced to the ALS. If the ICA shows overhaul time for a part, then the ICA must include an overhaul manual for that part.

(10) The applicant's inspection program with the frequency and extent of the inspections necessary to sustain continued airworthiness.

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

4-8. Engine Overhaul.

a. Covering engine disassembly, overhaul, and reassembly, this manual or section must also include necessary cautions or warnings, and:

(1) Cleaning and inspection instructions with inspection criteria for each part of the engine, subassembly, assembly, module, systems, and components. The inspection criteria should identify the tasks at each level, such as part replacement, repair, or more detailed inspection.

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

(3) Repair methods for worn or otherwise substandard parts that do not meet the inspection limits. The ICA does not need repair information for all engine parts, but should identify when and why a part must be replaced or repaired.

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

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

(6) List of required tools to complete all work. There may be several lists, each in the ICA section where the work is described. The list of overhaul tools should be in the front of the manual or section so it's easy to find the list and order the tools. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Instruct applicants to highlight this.

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

4-9. Propeller Maintenance.

a. The manual or section must cover both the propeller features and maintenance or preventive maintenance, including:

- (1) Description of propeller features, systems, and installations.
- (2) Instructions for uncrating, acceptance checking, lifting, installing, and removing the propeller, and any warnings, cautions, and notes that are part of the propeller type design.
- (3) Description of the propeller components and systems, how they operate, and how they are controlled, including any special procedures and limitations.
- (4) Description of how to adjust and test propellers, including required equipment and precautions.
- (5) Description of probable malfunctions, and how to recognize and correct them.
- (6) Order and method of removing and replacing propeller parts, with any necessary precautions to take.
- (7) List of required equipment to complete all work. There may be several lists, each in the ICA section where the work is described. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Instruct applicants to highlight them.
- (8) Maintenance schedule for each part of the propeller, including recommended periods for cleaning, inspecting, adjusting, testing, and lubricating; the depth of inspection required; the wear tolerances; and tasks at those intervals.
- (9) The recommended replacement/overhaul schedule – with the necessary cross-reference to the ALS – that shows when to remove, replace, or overhaul a specific part. If the ICA shows an overhaul time for a part, then the ICA must include the overhaul manual for that part. The product design approval holder is responsible for controlling the content and changes, not the part manufacturer.
- (10) Expect an applicant to include an inspection program detailing the frequency and extent of the inspections necessary to sustain continued airworthiness.

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

4-10. Propeller Overhaul.

a. Covering propeller disassembly, overhaul, and reassembly, the manual or section must include any necessary cautions or warnings, plus:

(1) Cleaning and inspection instructions with inspection criteria for each part of the propeller. The criteria should identify the tasks at each level, such as part replacement, repair, or more detailed inspection.

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

(3) Repair methods for worn or otherwise substandard parts that do not meet the inspection limits. The ICA does not need to cover repairs on all propeller parts, but should identify when and why a part must be replaced or repaired.

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

(5) 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.

(6) List of required tools to complete all work. The list may actually be several lists, each in the ICA section where the work is described. The tools list should be in front of the manual or section so it's easy to find the list and order the tools. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Ensure that applicants highlight this.

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

~~4-11. Maintenance Instructions.~~

~~a. For each part of the aircraft, balloon, engine, and propeller, plus its components or appliances, this manual or section must include the following information, as appropriate for the article:~~

~~(1) [REDESIGNATED PARAGRAPH 4-12(c)(4)]~~

~~(2) [REDESIGNATED PARAGRAPH 4-12(c)(9)]~~

~~(3) [REDESIGNATED PARAGRAPH 4-12(c)(9)]~~

~~(4) Replacement/overhaul schedule with cross-reference to the ALS that shows when to remove, replace, or overhaul a specific part. If the ICA shows an overhaul requirement for a part, then the ICA must include an overhaul manual for that part. The product design approval holder is responsible for controlling the content and changes, not the part manufacturer.~~

~~(5) Primary structure identification and recommended inspection times and types, such as ultrasonic, eddy current, and so forth.~~

~~(6) An inspection program with the frequency and extent of inspections to sustain continued airworthiness.~~

~~(7) All data on structural fasteners, such as identification, discard recommendations, and torque values.~~

~~b. The applicant may refer to the manufacturer of an accessory, instrument, or equipment as the source of this maintenance information, if they show that the item is very complex and requires specialized techniques, test equipment, or expertise.~~

~~e. See 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); § 31.82, Appendix A, A31.3; § 33.4, Appendix A, A33.3(a); and § 35.4, Appendix A, A35.3(a) for the regulatory requirements.~~

4-11. System Wiring Diagram Section. For aircraft and engines, this section covers the aircraft's electrical or electronic circuits. The diagrams must be detailed enough to enable maintenance personnel to troubleshoot and service the electrical system. This section must include wiring diagrams for the installation in sufficient detail for the purposes of troubleshooting. In addition, the wiring diagram section must include a method of determining connector type, wire type and wire size. We consider system wiring diagrams as descriptive data of the systems used on the product, and a part of the ICA.

4-12. Component Overhaul/Maintenance Manuals. Component Maintenance Manual or Section. For aircraft, engines, and propellers, ~~These manuals cover overhauling and repairing maintenance of components or appliances not covered under the product maintenance manual (such as "black boxes.")~~ If the ICA refer to the manuals or set overhaul times as a requirement to maintain the continued airworthiness, those instructions are incorporated by reference and now become part of the complete ICA, and must be provided to the owner by the design approval holder as required by § 21.50(b). In that case, the component manuals must contain the following:

~~a. Cleaning and inspection instructions with criteria for each part. The inspection requirements should identify the tasks at each level, such as part replacement, repair, or more detailed inspection.~~

~~b. Details on all fits and clearances of the component, and structural integrity and functionality for new and worn parts.~~

~~c. Repair methods for worn or otherwise substandard parts that do not meet the inspection limits.~~

~~d. Instructions for testing after overhaul, including test acceptance criteria.~~

e. [REDESIGNATED AS SUBPARAGRAPH (c)(10) OF THIS PARAGRAPH]

~~f. List of required tools to complete all work. There may be several lists, each in the ICA section where the work is described. The tools list should be in front of the manual or~~

~~section so it's easier to find it and order the tools. Title 14 CFR § 43.13 mandates the use of special tools during maintenance. Ensure that applicants highlight this.~~

a. This paragraph applies to design approval holders described in paragraph 2-4(b), numbers 1 through 5.

b. Note: A higher-level design approval holder may refer to an accessory, instrument or equipment manufacturer as the source of information for overhauling that article following its removal from the product or higher assembly, provided the information set forth below is actually made available by the manufacturer of the accessory, instrument or equipment.

Similarly, a lower level design approval holder may refer to a higher level design approval holder's ICA as the source of information for overhauling that article following its removal from the higher assembly, provided the information set forth below is actually made available by the higher-level design approval holder.

Each article included in a design approval may be addressed individually or as part of a group or system. The lack of specific instructions for any particular article should not adversely affect an operator's ability to maintain the product in an airworthy condition.

c. The maintenance manual or section should include the following information, as appropriate for the article.

- (1) A description of the article's features and data and its components, systems, and installations should contain enough detail to perform maintenance and preventive maintenance.
- (2) A description of the control and operation of the article's components and systems should also provide enough detail to perform the maintenance at the levels specified in the ICA.
- (3) 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 be installed on the type-certificated product at a later date.
- (4) Recommended times for cleaning, inspecting, testing, lubricating, and adjusting, including the depth of inspection required, the wear tolerances, and tasks performed. The scheduling information provided 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 the continued airworthiness of the article.
- (5) If the article is removed from the type-certificated product, the ICA should provide maintenance and/ or overhaul instructions to determine

its eligibility for reinstallation on an aircraft and continued service use. The disassembly of the article to the piece-part level may be required before returning it to service if the exposure occurs after a considerable number of hours in service.

- (6) An inspection program to ensure the continued airworthiness of the article. Certification tests, analyses, and service experience, if available, should be used to develop the inspection program for parts, assemblies, sub-assemblies, or modules.
- (7) Troubleshooting information to address potential malfunctions and provide procedures to rectify them or replace the affected part or component before continued operation.
- (8) A means to ensure configuration control during maintenance in the ICA. This should ensure that the proper parts, components, and combinations of parts and components are identified and conform to the approved design.
- (9) Location of access panels for inspection and servicing. Diagram of structural access plates, and how to gain access when access plates are not provided.
- (10) Instructions for storage, identifying special containers and any equipment or tools. The ICA should also include environmental restrictions for storage and storage limits.
- (11) The list of tools for maintenance should be adequate for completing the work. It may include lists located in the sections of the ICA in which the work is described. However, the list of tools and equipment should be located in a manner that facilitates locating and ordering the tools and equipment. Also, the list should include a cross-reference to the section in which the method of using each tool is described. Special tools should be noted, as there is a specific regulatory requirement for the use of a special tool when performing maintenance. Calibration requirements should be listed where applicable.

4-13. Non-Destructive Test (NDT) and Inspection. For aircraft, engines, and propellers, and articles this manual covers testing techniques, instructions, and required equipment for all required NDTs and inspections. ~~The regulations don't specifically require this information, but~~ We consider it necessary to do the inspections under the maintenance interval requirement. This can be specifically written for the product or a referenced standard practices/procedures document.

4-14. Component Overhaul Manual or Section.

a. This paragraph applies to design approval holders described in paragraph 2-4(b), numbers 1 through 5.

b. Note: A higher-level design approval holder may refer to an accessory, instrument or equipment manufacturer as the source of information for overhauling that article following its removal from the product or higher assembly, provided the information set forth below is actually made available by the manufacturer of the accessory, instrument or equipment.

Similarly, a lower level design approval holder may refer to a higher level design approval holder's ICA as the source of information for overhauling that article following its removal from the higher assembly, provided the information set forth below is actually made available by the higher-level design approval holder.

Each article included in a design approval may be addressed individually or as part of a group or system. The lack of specific instructions for any particular article should not adversely affect an operator's ability to maintain the product in an airworthy condition.

c. The overhaul manual or section should include the following information, as appropriate for the article.

- (1) The TC holder should clearly define what level or amount of inspection and repair or replacement of parts constitutes an overhaul. This is needed because the article must be designed and constructed to minimize the development of an unsafe condition between overhaul periods. This includes articles that are part of the approved design.
- (2) Recommended overhaul periods.
- (3) Sufficient details for the disassembly, cleaning, inspection, repairing as necessary, reassembling, final inspecting and/or testing of the article. Necessary warnings and guidance should also be provided.
- (4) A means to ensure configuration control so that the proper parts, components, and any combinations that comply with the approved design are identified during assembly or replacement.
- (5) Cleaning instructions. The ICA should emphasize the proper cleaning methods and contain appropriate warnings if improper cleaning could adversely affect the quality of the inspection.
- (6) When piece parts and components are exposed, they should be subjected to appropriate inspections to determine their eligibility for reinstallation in the top assembly for continued service. An adequate inspection program for the article, with threshold or opportunity inspections, is essential for the continued airworthiness of the type-certificated product.
- (7) The accuracy and reliability of inspection techniques should be consistent with the criticality of the parts being inspected and the types of defects for which the part is being inspected. The ICA should identify parts and key features or areas for which special emphasis or a higher awareness is needed to assure continued airworthiness.

- (8) Adequate inspection criteria should enable the appropriate inspection of each part, sub-assembly, assembly, module, system and component. Inspections should identify the required action at each level, such as part replacement, repair, or further detailed inspection.
- (9) Details for all fits and clearances for the article and components, structural integrity, and functionality of new and worn parts.
- (10) Worn or substandard parts that do not meet the ICA inspection limits cannot be returned to service. To ensure airworthiness, such parts should be either replaced or repaired. While the ICA does not have to include repairs for all piece parts, it should identify when or under what conditions parts must be replaced or repaired. If a part or component fails to meet the inspection requirements of the ICA, replacement is an acceptable alternative to repair. However, the design approval holder should at a minimum provide inspection techniques and criteria to enable a determination of continued airworthiness.
- (11) The FAA may allow and approve other repair data that is not part of the approved design and is not reflected in the ICA. However, when design change data for repair or alteration constitutes a major change to the approved design, the need for such repair or alteration information in the ICA should be evaluated, because the repair or alteration could introduce a new feature that does not exist in the original approved design. This is particularly true for an STC.
- (12) Test acceptance criteria. They can be identified as limits, although not as an airworthiness limitation.
- (13) Calibration requirements (frequency, accuracy, and protocol to be used) for all testing and measurement equipment used to return the article and its component parts to service.
- (14) Instructions for testing the article after overhaul.
- (15) Special containers, equipment, and tools that may be necessary to comply with the instructions for storage should be identified. The storage limits should also include any environmental restrictions, such as limits for temperature or humidity.
- (16) The list of tools for overhaul should be adequate for completing the work. It may include lists located in other sections of the ICA in which the work is described. Also, the list should include a cross-reference to the section in which the method of using each tool is described or the tools are used. Any special tools should be highlighted, because section 43.13 requires the use of special tools when performing maintenance.

4-15. Supplemental ICA

- a. This subparagraph applies to design approval in paragraph 2-4(b), numbers 6 and 7.
- b. Evaluation Required: Design approval holders described in paragraph 2-4(b), numbers 6 and 7, shall conduct an evaluation to determine whether the existing ICA are adequate to ensure the continued airworthiness of the product with the PMA part installed or with major repair applied. If the FAA determines that the existing ICA are not adequate, supplemental ICA must be developed and submitted during the PMA application process (in accordance with FAA Order 8110.42A or in conjunction with the FAA's evaluation and approval of the technical data supporting a major repair).
- c. If supplemental ICA are required to ensure continued airworthiness, the following instructions must be provided, at a minimum:
- (1) Cleaning instructions. Cleaning could have a significant effect on inspections, as improper cleaning could result in missing potentially hazardous defects. Therefore, the ICA should emphasize the proper cleaning methods, with the appropriate cautions when improper cleaning could adversely affect the quality of the inspection.
 - (2) When piece parts and components are exposed, they should be subjected to appropriate inspections to determine their eligibility for reinstallation in the top assembly for continued service. An adequate inspection program for the article, with threshold or opportunity inspections, is essential for the continued airworthiness of the type-certificated product.
 - (3) The accuracy and reliability of inspection techniques should be consistent with the criticality of the parts being inspected and the types of defects for which the part is being inspected. The ICA should identify parts and key features or areas for which special emphasis or a higher awareness is needed to assure continued airworthiness.
 - (4) Adequate inspection criteria should enable the appropriate inspection of each part, sub-assembly, assembly, module, system and component. Inspections should identify the required action at each level, such as part replacement, repair, or further detailed inspection.
 - (5) Worn or substandard parts that do not meet the ICA inspection limits cannot be returned to service. To ensure airworthiness, such parts should be either replaced or repaired. While the ICA does not have to include repairs for all piece parts, it should identify when or under what conditions parts must be replaced or repaired. If a part or component fails to meet the inspection requirements of the ICA, replacement is an acceptable alternative to repair. However, the design approval holder should at a minimum provide inspection techniques and criteria to enable a determination of continued airworthiness.

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CHAPTER 5. ACO AND AEG RESPONSIBILITIES

5-1. What ACOs and the ECO Must Do. If you are in an ACO/ECO, you are the primary connection with the applicant for design approvals, except field approvals. You are responsible for accepting the ICA with concurrence from the AEG. This includes advising all applicants that they have to develop ICA for every application for a design approval. After you receive an application, you must:

- a. Coordinate with the responsible AEG individual at the start of each program to give them information, and provide notification that their concurrence of the ICA will be needed. Recommended method of notification would be with a certification project notification (CPN). You cannot delegate this job to a company DER or foreign regulatory agency.
- b. Notify the applicant 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 appendices. See chapter 3 for more information on the content requirements. For a TSO, ensure the applicant has addressed all ICA requirements that apply.
- c. Give the applicant the names and offices of the AEG airworthiness inspectors, who will review the ICA.
- d. Invite the AEG airworthiness inspector to the TC board, or other formal meetings with the applicant, to ensure that everyone understands the requirement for ICA and what should be in it.
- e. 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.
- f. Review and approve the ALS and the instructions for installing and operating the engine, propeller, or both. Contact the AEG airworthiness inspector and ask for their concurrence on the acceptability of the engine and propeller installation instructions and the format/content of the ALS before you approve them.
- g. For TC and Amended TC projects requiring a new Airworthiness Certificate, approve a program to ensure the applicant provides a complete set of accepted ICA to the owner prior to delivery of the first aircraft or an Airworthiness Certificate has been issued, whichever occurs later.
- h. All other design approvals should not be issued until you with AEG concurrence have accepted the ICA. However, if there is a need to issue a design approval without complete ICA, you must approve a program that ensures the ICA will be complete and accepted before the first affected aircraft is operated with a standard airworthiness certificate. The minimum program elements are:

- (1) List of all parts affected by the design change.

(2) Detailed schedule for completing and submitting the ICA to the ACO/ECO.

(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 or the “Limitations” section of the STC. This means an aircraft can be modified, but cannot return to service until the complete ICA are accepted. 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.

i. With AEG concurrence, review and determine the acceptability of the applicant’s plan showing how they, or the design approval holder, are going to distribute the initial ICA and subsequent changes. This plan should include the kind of media they’ll use to distribute the ICA and how soon after a change they will send it.

j. With AEG concurrence, review and determine acceptability of any ICA changes provided the plan accepted requires review of changes.

5-2. AEG Responsibilities. AEG personnel are operations, maintenance, and avionics inspectors lending their specialized technical services to assigned aircraft. This includes reviewing and concurring on the acceptance of the ICA, plus subsequent changes. The ACO responsible for the project will notify the AEG when a project requires ICA review.

a. If you are an AEG staff member and get this notification, you need to:

(1) Give the ACO project manager the names of the AEG airworthiness inspectors, who will be assigned to the project.

(2) Ensure that the project AEG airworthiness inspectors meet or communicate with ACO project engineers to coordinate the maintenance requirements for each of the disciplines, particularly those for maintaining the product’s continued airworthiness.

(3) Report ICA status to the ACO project manager during any internal FAA meetings, and additionally whenever you think you need to.

(4) Within 30 days of receiving the ICA, send the ACO project manager written concurrence of acceptance, in the form of a memo or electronic mail. If you cannot meet this timeline, you should coordinate a schedule with the ACO/ECO that details when you can complete your review.

(5) In coordination with the ACO project manager, review and determine the acceptability of the applicant’s plan showing how they, or the design approval holder, are going to distribute ICA changes. This plan should include the kind of media they’ll use for distribution and how soon after the change will they send it.

(6) Coordinate with the ACO/ECO when deciding whether to allow an owner/operator to use an equivalent tool or equipment instead of the one specified in the appropriate manual.

b. 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 airworthiness regulations and their associated appendices.

5-3. The Flight Standards Inspector's Role.

a. The flight standards inspector is the focal point for reviewing and accepting ICA on field approval projects that require a Form 337. If you are an inspector, tell the applicant 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*). Keep in mind that individuals with varying degrees of skill will use the ICA, so ICA need to be easy to understand. Both premier carriers with many years of experience and first-time operators must be able to understand the manuals and the ICA equally.

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 § 145.2. If the proposed ICA does not add or change existing requirements in the ALS, you can accept the ICA. If the change affects the ALS, however, you must contact the certifying ACO for approval.

5-4. How We Resolve Disputes. Because engineering personnel and AEG airworthiness inspectors may disagree, we have developed a conflict resolution process. These are the steps:

a. AEG and ACO/ECO project members review ICA and identify their concerns and problems with the ICA to one another. If the AEG and ACO/ECO project engineers agree, they present 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 present their concerns to their office managers. Remember that we consider the AEG the maintenance and operations expert, while the ACO/ECO 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 the concern, their position, and a proposed solution.

(2) The office getting the memo responds in writing.

(3) The office also sends a copy of their response to the responsible directorate Standards Staff, the Aircraft Maintenance Division (AFS-300) of Flight Standards, and if appropriate, the regional counsel for review, comments, and resolution.

(4) If the directorate Standards Staff, Aircraft Maintenance Division (AFS-300) of Flight Standards, and regional counsel cannot agree, the staffs will send the original concerns and their responses to the ICA focal points in the Aircraft Certification, Aircraft Engineering Division (AIR-100) and the Flight Standards, Aircraft Maintenance Division (AFS-300).

(5) AIR-100 and AFS-300 focal points distribute the disputed issues and comments to division team members. Within five working days after sending the material, the focal point convenes a team teleconference. The focal point needs to include the originating AEG and ACO/ECO project members in the teleconference, during which the team will strive to reach consensus. If they don't, the focal point makes a recommendation.

(6) The ICA team writes that recommendation and submits it to the managers of AIR-100 and AFS-300. The team's legal representatives should decide whether to send the team's solution to the Office of the Chief Counsel's Regulations Division (AGC-200) to resolve legal issues.

(7) The managers of AIR-100 and AFS-300 will decide what to do based on the recommendations. They will tell both the directorate and the applicant.

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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 both new and subsequent changes to ICA. We'll also cover when a non-owner (like a 14 CFR part 145 repair station) is entitled to receive ICA. 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, the design approval holder 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 this case, we would not require the ICA for the changes in type design until the airworthiness certificate is issued.

b. Furnishing ICA means giving the ICA in either hard copy (paper) or by electronic means, such as a compact disk (CD). When an owner buys more than one product of the same type design and does not want more than one copy of the ICA, applicants should send only one set of manuals or electronic media. For example, an airline that buys 25 747-400 aircraft of the same type design may not need 25 copies of the ICA on CD, but they are entitled to all 25 copies if they ask for it.

c. We will not accept an applicant/design approval holder's offer to provide the owner a website or toll-free phone number for downloading or requesting initial ICA. We cannot guarantee that through the web, the owner will access or download all required material to safely maintain the product. The intent of the rule is to ensure that each owner has the required information to safely operate and maintain the product's airworthiness throughout the service life.

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 according to a plan they wrote that both the ACO/ECO and AEG accepted. The design approval holder should format the changes to supplement the original ICA, and clearly say what's being changed, to prevent confusion. Instruct an approval holder that they can distribute changes to ICA using:

- a. Paper copies of the changes, sent to all owners on record.
- b. Digital format (CD) copies, sent to owners on record.

6-4. Who Is Entitled to ICA.

~~a. Section 21.50(b) says the owner of a type-certificated product is entitled to at least one set of complete ICA. The rule also says that ICA must be made available to any person required to comply with the terms of these instructions. We find that the owner has the requirement to~~

maintain the airworthiness of the product. Therefore, these four conditions must be met in full for ICA to be “made available” to someone who is not an owner of the product:

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

~~(2) The latest related certification basis includes § 21.50 as amended September 11, 1980 or later (and 2x.1529 or 3x.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/individual) 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) If the ICA data requested is a component maintenance manual (CMM) or specific repair information, the CMM or repair information must be referenced in higher level ICA (airplane or engine ICA) as the source of information for continued airworthiness actions.~~

~~b. Meeting each of the conditions in paragraph 6-4a(1) through 6-4a(4) is necessary to ensure enforcement of the § 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, then the:~~

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

~~e. If a person can show they are entitled to ICA per the criteria in paragraphs 6-4a(1) through 6-4a(4), and they are not requesting the ICA to accomplish work on §§ 121 or 135 operator, then by regulation they are also entitled to changes to that ICA. Work on §§ 121 or 135 operator’s products must be performed per the operator’s processes and procedures, not the design holder’s ICA.~~

6-4. Requirement to Make ICA Available

a. The FAA will adopt the following policy regarding the obligation of design approval holders to make this information available. ICA shall be made available at a fair and reasonable price to maintenance providers and other persons required by the FAR to comply with those instructions. The same price shall be charged to all similarly situated certificate holders. A fair and reasonable price for maintenance providers would be based on recurring and non-recurring costs associated with the development, preparation and distribution of the ICA beyond that required for initial certification.

b. The ICA may be used to perform any regulated activity consistent with the certificate holder’s privileges under 14 CFR Parts 1 through 199, including but not limited to performing maintenance on PMA parts if authorized by the PMA holder and the FAA. In addition, a design approval holder may not erect artificial barriers to frustrate the purposes of this policy. This

includes insisting that a maintenance provider submit a letter from an operator authorizing it to perform work on the operator's behalf, or requiring an operator to give up its right to receive ICA in the future if the design approval holder makes them available to a maintenance provider. Section 21.50(b) is clear that the ICA must be furnished to the owner/operator and made available to any other person required by 14 CFR Parts 1 through 199 to comply with the terms of those instructions. On the other hand, a design approval holder may establish reasonable restrictions on the use of the data, such as requiring a maintenance provider to sign a confidentiality agreement promising not to disclose the ICA to third parties (except for authorized contractors) without the design approval holder's consent.

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APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each engine.	G23.1(b)	
<input type="checkbox"/> ICA for each propeller.	G23.1(b)	
<input type="checkbox"/> ICA for each appliance required by this chapter.	G23.1(b)	
<input type="checkbox"/> Required information on the interface of <input type="checkbox"/> appliances, <input type="checkbox"/> engines, and <input type="checkbox"/> propellers with the aircraft.	G23.1(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"/> propeller installed on the aircraft, the ICA for the aircraft must include <input type="checkbox"/> the information essential to the continued airworthiness of the aircraft.	G23.1(b)	
<input type="checkbox"/> Applicant's plan showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	G23.1(c)	
<input type="checkbox"/> ICA in a manual or manuals. <input type="checkbox"/> Manuals arranged for easy and practical use.	G23.2(a)	
<input type="checkbox"/> Manuals prepared in English.	G23.3	
<input type="checkbox"/> Manual's introduction includes an explanation of the airplane's features and data for maintenance or preventive maintenance.	G23.3(a)(1)	
<input type="checkbox"/> Description of the <input type="checkbox"/> aircraft and its systems and installations, <input type="checkbox"/> engines and its systems and installations, <input type="checkbox"/> propellers and its systems and installations, and <input type="checkbox"/> appliances and its systems and installations.	G23.3(a)(2)	
<input type="checkbox"/> Basic descriptions of <input type="checkbox"/> how the aircraft components and systems are controlled and <input type="checkbox"/> how the aircraft components and systems are operated, including <input type="checkbox"/> any special procedure and limitations.	G23.3(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 used, and <input type="checkbox"/> pressures applicable to the various systems.	G23.3(a)(4)	
<input type="checkbox"/> Location of access panels for <input type="checkbox"/> inspection and <input type="checkbox"/> servicing.	G23.3(a)(4)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> locations of lube points and <input type="checkbox"/> 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 descriptions of () problem 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, () discarded 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)(1)	
() For Commuter Category aircraft: identifying primary and secondary structures.	G23.3(h)(1)	
() For Commuter Category aircraft: any special repair methods applicable.	G23.3(h)(1)	
() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document. NOTE: The appropriate FAA office will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	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, saying: "The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	G23.4	

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each engine.	H25.1(b)	
<input type="checkbox"/> ICA for each propeller.	H25.1(b)	
<input type="checkbox"/> ICA for each appliance required by this chapter.	H25.1(b)	
<input type="checkbox"/> Required information on the interface of <input type="checkbox"/> appliances, <input type="checkbox"/> engines, and <input type="checkbox"/> propellers with the aircraft.	H25.1(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"/> propeller installed on the aircraft, the ICA for the aircraft must include <input type="checkbox"/> the information essential to the continued airworthiness of the aircraft.	H25.1(b)	
<input type="checkbox"/> Applicant's plan showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	H25.1(c)	
<input type="checkbox"/> ICA in a manual or manuals. <input type="checkbox"/> Manuals arranged for easy and practical use.	H25.2(a) H25.2(b)	
<input type="checkbox"/> Manuals prepared in English.	H25.3	
<input type="checkbox"/> Manual's introduction includes explanation of the airplane's features and data for maintenance or preventive maintenance.	H25.3(a)(1)	
<input type="checkbox"/> Description of the <input type="checkbox"/> aircraft and its systems and installations, <input type="checkbox"/> engines and its systems and installations, <input type="checkbox"/> propellers and its systems and installations, and <input type="checkbox"/> appliances and its systems and installations.	H25.3(a)(2)	
<input type="checkbox"/> Basic descriptions of <input type="checkbox"/> how aircraft components and systems are controlled and <input type="checkbox"/> operated, including <input type="checkbox"/> any special procedure and limitations.	H25.3(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.	H25.3(a)(4)	
<input type="checkbox"/> Location of access panels for <input type="checkbox"/> inspection and <input type="checkbox"/> servicing.	H25.3(a)(4)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> locations of lube points, <input type="checkbox"/> the lube used.	H25.3(a)(4)	
<input type="checkbox"/> Equipment required for servicing.	H25.3(a)(4)	
<input type="checkbox"/> Tow instructions and limitations.	H25.3(a)(4)	

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST, continued

REQUIREMENT	Regulation Appendix	Location In ICA
() 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)	
() Troubleshooting descriptions of () 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)	
() Details to apply special inspection techniques, including radiographic and ultrasonic testing where such processes are specified.	H25.3(d)	

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST, continued

REQUIREMENT	Regulation Appendix	Location In ICA
() Information needed to apply protective treatment to structure after inspection.	H25.3(e)	
() All data on structural fasteners, such as () identification, () discarded 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 FAA office will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	H25.4(a)	
() ALS must explain each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under § 25.571.	H25.4(a)(1)	
() ALS must explain each mandatory replacement time, inspection interval, related inspection procedure, and all critical design configuration control limitations approved under § 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 saying: "The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	H25.4(b)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each engine.	A27.1(b)	
<input type="checkbox"/> ICA for each rotor.	A27.1(b)	
<input type="checkbox"/> ICA for each appliance required by this chapter.	A27.1(b)	
<input type="checkbox"/> Required information on the interface of <input type="checkbox"/> appliances, <input type="checkbox"/> engines, and <input type="checkbox"/> rotors with the rotorcraft.	A27.1(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 the <input type="checkbox"/> information essential to the continued airworthiness of the rotorcraft.	A27.1(b)	
<input type="checkbox"/> Applicant's plan showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	A27.1(c)	
<input type="checkbox"/> ICA in a manual or manuals.	A27.2(a)	
<input type="checkbox"/> Manuals arranged for easy and practical use.	A27.2(b)	
<input type="checkbox"/> Manuals prepared in English.	A27.3	
<input type="checkbox"/> Manual's introduction explains <input type="checkbox"/> the rotorcraft's features and <input type="checkbox"/> data for maintenance or preventive maintenance.	A27.3(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.	A27.3(a)(2)	
<input type="checkbox"/> Basic descriptions of <input type="checkbox"/> how the rotorcraft components and systems are controlled and <input type="checkbox"/> operated, including <input type="checkbox"/> any special procedure and limitations.	A27.3(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 used, and <input type="checkbox"/> pressures applicable to the various systems.	A27.3(a)(4)	
<input type="checkbox"/> Location of access panels for <input type="checkbox"/> inspection and <input type="checkbox"/> servicing.	A27.3(a)(4)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> locations of lube points and <input type="checkbox"/> the lube used.	A27.3(a)(4)	
<input type="checkbox"/> Equipment required for servicing.	A27.3(a)(4)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST, continued

REQUIREMENT	Regulation Appendix	Location In ICA
() 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 descriptions of <input type="checkbox"/> 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, () discarded recommendations, and () torque values.	A27.3(f)	
() List of special tools needed.	A27.3(g)	
<p>() ICA must contain a section, titled Airworthiness Limitations, that is () segregated and () clearly distinguishable from the rest of the document.</p> <p>NOTE: The appropriate FAA office will evaluate and approve Airworthiness Limitations Section (ALS) in the applicant's ICA.</p>	A27.4(a)	
() ALS must explain each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under § 27.571.	A27.4(a)(1)	
() If the ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	A27.4(b)	
() ALS must contain a legible statement in a prominent location saying: "The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved.	A27.4(b)	

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 plan showing how they or the manufacturers of products and appliances installed on the airplane 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"/> Manual's introduction explains <input type="checkbox"/> the rotorcraft's features and <input type="checkbox"/> data 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 descriptions of <input type="checkbox"/> how rotorcraft components and systems are controlled and <input type="checkbox"/> 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)	
<input type="checkbox"/> Equipment required for servicing.	A29.3(a)(4)	
<input type="checkbox"/> Tow instructions and limitations.	A29.3(a)(4)	

**APPENDIX 4. TRANSPORT CATEGORY
ROTORCRAFT ICA CHECKLIST, continued**

REQUIREMENT	Regulation Appendix	Location In ICA
() 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 descriptions of () 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, () discarded 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 FAA or authority will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A29.4(a)	
() ALS must explain each mandatory replacement time, structural inspection interval, and related structural inspection procedures approved under § 29.571.	A29.4(a)(1)	
() If ICA consists of multiple manuals, ALS required by this paragraph must be in the principal manual.	A29.4(b)	
() ALS must contain a legible statement in a prominent location saying: "The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	A29.4(b)	

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 plan showing how they or the manufacturers of products and appliances installed on the airplane 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"/> Manual's introduction includes both an explanation of balloon's features and data 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
<input type="checkbox"/> Maintenance information for each part of the rigging, including 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 basket structure, including 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 fuel systems, including 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 of the instruments, including 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 heater assembly, including 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)	
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.	A31.3(e)	
<input type="checkbox"/> Recommended overhaul periods and necessary cross-references to the ALS must also be included.	A31.3(e)	
<input type="checkbox"/> Inspection program that includes <input type="checkbox"/> the frequency and <input type="checkbox"/> extent of the inspection necessary to provide for the balloon's continued airworthiness.	A31.3(e)	

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST, continued

REQUIREMENT	Regulation Appendix	Location In ICA
() Troubleshooting descriptions of () 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.	A31.4	
() ALS must explain 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 saying: "The Airworthiness Limitations Section is FAA approved and specifies inspections and other maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	A31.4	

APPENDIX 6. ENGINE ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each engine must include the ICA for all engine parts.	A33.1(b)	
<input type="checkbox"/> Applicant's plan showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	A33.1(c)	
<input type="checkbox"/> ICA in a manual or manuals.	A33.2(a)	
<input type="checkbox"/> Manuals arranged for easy and practical use.	A33.2(b)	
<input type="checkbox"/> Manuals prepared in English.	A33.3	
<input type="checkbox"/> ICA must contain the following manuals or sections, as appropriate, and information: <input type="checkbox"/> Engine Maintenance Manual or Section. <input type="checkbox"/> Engine Overhaul Manual or Section.	A33.3(a)	
Engine Maintenance Manual or Section.	A33.3(a)	
<input type="checkbox"/> Introduction that explains engine's features and data for maintenance or preventive maintenance.	A33.3(a)(1)	
<input type="checkbox"/> Detailed description of the engine and its <input type="checkbox"/> components, <input type="checkbox"/> systems, <input type="checkbox"/> and installations.	A33.3(a)(2)	
<input type="checkbox"/> Installation instructions, including proper procedures for <input type="checkbox"/> uncrating, <input type="checkbox"/> deinhibiting, <input type="checkbox"/> acceptance checking, and <input type="checkbox"/> lifting and attaching accessories, <input type="checkbox"/> with any necessary checks.	A33.3(a)(3)	
<input type="checkbox"/> Basic description of how the engine components, systems, and installations <input type="checkbox"/> operate, and description of the methods of <input type="checkbox"/> starting, <input type="checkbox"/> running, <input type="checkbox"/> testing, and <input type="checkbox"/> stopping the engine and its parts, including any <input type="checkbox"/> special procedures and <input type="checkbox"/> limitations that apply.	A33.3(a)(4)	
<input type="checkbox"/> Servicing information covering <input type="checkbox"/> servicing points, <input type="checkbox"/> capacities of tanks, <input type="checkbox"/> reservoirs, <input type="checkbox"/> types of fluids to be used, <input type="checkbox"/> pressures applicable to the various systems, <input type="checkbox"/> locations of lubrication points, <input type="checkbox"/> lubricants to be used, and <input type="checkbox"/> 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 descriptions of 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, 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. ALS will be evaluated and approved by the appropriate ACO.	A33.4	
() ALS must explain 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	
() Section must contain a legible statement in a prominent location saying: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	A33.4	

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APPENDIX 7. PROPELLER ICA CHECKLIST

REQUIREMENT	Regulation Appendix	Location In ICA
<input type="checkbox"/> ICA for each propeller must include ICA for all propeller parts.	A35.1(b)	
<input type="checkbox"/> Applicant's plan showing how they or the manufacturers of products and appliances installed on the airplane will distribute changes to the ICA.	A35.1(c)	
<input type="checkbox"/> ICA in a manual or manuals.	A35.2(a)	
<input type="checkbox"/> Manuals arranged for easy and practical use.	A35.2(b)	
<input type="checkbox"/> Manuals prepared in English.	A35.3	
<input type="checkbox"/> ICA must contain the following sections and information: <input type="checkbox"/> Propeller Maintenance Section. <input type="checkbox"/> Propeller Overhaul Section.	A35.3(a)	
Propeller Maintenance Section.	A35.3(a)	
<input type="checkbox"/> Introduction that explains propeller's features and data for maintenance or preventive maintenance.	A35.3(a)(1)	
<input type="checkbox"/> Detailed description of propeller and its <input type="checkbox"/> systems, <input type="checkbox"/> and installations.	A35.3(a)(2)	
<input type="checkbox"/> Basic descriptions of how propeller components and systems are <input type="checkbox"/> controlled and how they <input type="checkbox"/> operate, including any <input type="checkbox"/> special procedures that apply.	A35.3(a)(3)	
<input type="checkbox"/> Instructions for <input type="checkbox"/> uncrating, <input type="checkbox"/> acceptance checking, <input type="checkbox"/> lifting, and <input type="checkbox"/> installing propeller.	A35.3(a)(4)	
<input type="checkbox"/> Instructions for propeller operational checks.	A35.3(a)(5)	
<input type="checkbox"/> Scheduling information for each part of propeller, including recommended periods for <input type="checkbox"/> cleaning, <input type="checkbox"/> adjusting, and <input type="checkbox"/> testing; the applicable <input type="checkbox"/> wear tolerances; and the <input type="checkbox"/> work recommended.	A35.3(a)(6)	
<input type="checkbox"/> Recommended <input type="checkbox"/> overhaul periods and <input type="checkbox"/> necessary cross-references to the ALS of the manual must also be included.	A35.3(a)(6)	
<input type="checkbox"/> In addition, the applicant must include an <input type="checkbox"/> inspection program that includes the <input type="checkbox"/> frequency and <input type="checkbox"/> extent of inspection necessary for propeller's continued airworthiness.	A35.3(a)(6)	
<input type="checkbox"/> Troubleshooting descriptions of probable <input type="checkbox"/> malfunctions, how to recognize those <input type="checkbox"/> malfunctions, and <input type="checkbox"/> remedies for them.	A33.3(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.	A33.3(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, 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. The Airworthiness Limitations Section (ALS) will be evaluated and approved by the appropriate ACO.	A35.4	
() The ALS must explain each () mandatory replacement time, () inspection interval, and () related procedure required for type certification.	A35.4	
() If ICA are in multiple manuals, the section required by this paragraph must be included in the principal manual. (Propeller Maintenance Section)	A35.4	
() Section must contain this legible statement prominently displayed: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under §§ 43.16 and 91.403 of the Code of Federal Regulations, unless an alternative program has been FAA approved."	A35.4	

APPENDIX 8. COMPONENT ICA CHECKLIST

See Chapter 4, paragraphs 4-12. Component Maintenance Manual or Section; 4-14. Component Overhaul Manual or Section; and 4-15. Supplemental ICA for list of required information for Component ICA.

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APPENDIX 9. RELATED PUBLICATIONS

1. Code of Federal Regulations (CFR). You can get 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 and Advisory Circulars (AC). Copies of the following orders and ACs 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://www2.faa.gov/avr/afs/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, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*
- m. AC 121-22, *Maintenance Review Board Procedures*

3. Other FAA Documents.

a. *The FAA and Industry Guide to Product Certification (CPI Guide)*, dated January 25, 1999, is available from the FAA website at <http://www2.faa.gov/certification/aircraft/av-info/dst/CPIGUIDE.pdf>.

APPENDIX 9. RELATED PUBLICATIONS, continued

b. TSO-C77b, *Gas Turbine Auxiliary Power Units*, is available from the FAA website at <http://av-info.faa.gov/tso/>.

4. Air Transport Association (ATA) Document. You can buy copies of ATA iSpec 2200, *Information Standards for Aviation Maintenance*, 2003 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. You can buy 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/>.

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APPENDIX 10. DEFINITIONS

ACO/ECO Engineer. The aviation safety engineer responsible for making compliance findings and issuing design approvals.

Aircraft Evaluation Group (AEG). Flight standards representatives who know the operational and maintenance aspects of the certification project and are responsible for it.

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

Applicant. An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity. This includes a trustee, receiver, assignee, or similar representative of any of them.

Article. A part, component, accessory, appliance, system, module or assembly that is eligible for installation on a type certificated product (i.e., "product").

Continued Airworthiness. Certified aircraft, engines, propellers, and appliances operated safely for the intended purpose. They are maintained safely throughout their service life. The product meets its type design and is in a condition for safe operation.

Design Approval Holder. The holder of any design approval, including type certificate, amended type certificate, supplemental type certificate, amended supplemental type certificate, parts manufacturer approval, technical standard order (TSO) authorization, letter of TSO design approval, and field approvals (FAA Form 337).

Field Approval. A major repair or major alteration authorized by an aviation safety inspector for an individual aircraft, aircraft engine, propeller, or appliance. The approval is accomplished by either examination of data only, or by physical inspection, demonstration, testing, and so forth.

Instructions for Continued Airworthiness. The documented information (including airworthiness limitations) required to keep the product airworthy.

Manufacturers' Service Documents. Publications by a type certificate holder (or appliance or component manufacturer) about safety, product improvement, economics, and operational and/or 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. A person who uses, or is authorized to use, aircraft for air navigation, including piloting the aircraft.

Owner. A person who owns an aircraft, aircraft engines, or propellers.

Product. An aircraft, aircraft engine, or propeller. This includes parts, materials, and appliances, which have a technical standard order.

APPENDIX 11. ACRONYMS

AC	Advisory Circular
ACO	Aircraft Certification Office
AEG	Aircraft Evaluation Group
AFS	Flight Standards Service
AIR	Aircraft Certification Service
ALS	Airworthiness Limitation Section
ATA	Air Transport Association
ATC	Amended Type Certificate
CAR	Civil Air Regulations
CFR	Code of Federal Regulations
CMM	Component Maintenance Manual
CMR	Certification Maintenance Requirements
ECO	Engine Certification Office
FAA	Federal Aviation Administration
GAMA	General Aviation Manufacturers Association
ICA	Instructions for Continued Airworthiness
IPC	Illustrated Parts Catalog
MRB	Maintenance Review Board
NDT	Non-Destructive Test
STC	Supplemental Type Certificate
TC	Type Certificate
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.ICA

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: _____

**APPENDIX D:
MINUTES OF JOINT INDUSTRY POLICY MEETINGS**

Joint Industry Policy Meeting
Date: May 12, 2004
Location: Hilton Hotel; Alexandria, Virginia

Attendees:	Marshall Filler	ARSA
	Christopher Durocher	ARSA
	Stu Browing	Hamilton Sundstrand
	Jim Epperson	Nordam
	John Hunter	Heico
	Jim Reum	Heico
	Peter Mueller	SR Technics
	Mike Nadolski	Pratt & Whitney
	Kevin O'Brien	Moog
	Werner Luehmann	Lufthansa Technik
	Astrid Ploss	Lufthansa Technik
	Marcel Zondag	Sargent Controls

The meeting began at 8:40 AM. Marshall Filler thanked the attendees for devoting their time and energies to this important project. He provided a general overview of the draft ARSA policy and the reasons supporting it. The attendees were invited to make introductory remarks on ICA issues and/or the policies of their respective companies.

Introductory Statements:

Zondag:

- Current situation with ICA makes it prohibitive to business development
- Sargent has taken a more open approach to ICA, providing them to:
 - to aircraft owners
 - licensed repair stations
 - reasonable policy to acquire or subscribe
- Regulations that structure these arrangements would be better than companies like Sargent developing policies to deal with the problem

Nadolski:

- P&W have had difficulty internally harmonizing ICA issue
- Neither OEMs nor Repair Stations happy w/ the current situation
- Stakeholders need better guidance
- Sees the major issues as
 - Access (which should be easily resolved)
 - Cost (which should be easily resolved)
 - Content (which will be difficult)
 - How much proprietary data will be required?
 - Are companies like P&W being too generous with content?
 - What is everyone else in the industry doing?
 - Better guidance from FAA will make it easier for companies to evaluate what content to include

Browning

- Information is important to ensuring the safety of aircraft
- Recognize responsibility that comes w/ PMA and DER repairs and the need to develop ICA
- Currently there is more information in the manuals than they would like
- Currently, manual content evolves over time
 - First generation may just include remove and replace
 - Subsequent versions may have more repair information
 - Regulations should not disrupt this evolution
- There is a need to separate airworthiness standards and unique/proprietary repairs
- After reviewing the draft proposal, does not have too much trouble with the policy

Luehmann

- Make sure that foreign repair stations are included in policy
- Concerned that special repair data developed may have to be included in ICA
 - Must keep in mind that ICA rules require information to maintain airworthiness, not information to repeat particular repair.
- Against putting training requirements in ICA.

O'Brien

- As OEM, cover all development costs, liability, and production costs
- No profit on delivery of product
- Aftermarket sales are the place where profit is made
- Question sense of entitlement – need to protect and provide for the costs associated with developing products.

Mueller

- When we were part of airline, it was easy to get repair data.
- Now that we are independent from owner/operator, struggling to receive published ICA
- SR is taking over operator's responsibilities w/ regard to overall maintenance
- We are responsible for obtaining all manuals, per our contract w/ operator
- Still we are unable to get manuals despite this contractual relationship
- Often OEMs require operators to "signoff" before they can get ICA
- OEMs are competitors of repair stations – repairs now disappear from subsequent versions of ICA, manual prices are increasing, and ICA are unavailable despite the fact that we are qualified to perform repairs

Epperson

- Though Nordam is both OEM and repair station, primarily representing repair side
- Availability of data is decreasing
- Airline customers not willing to provide ICA

- 75% of customers prohibit use of non-OEM product because no good way to track products

Reum

- Manufacturers decided to change ground rules
- Current FARs designed in environment where ICA were readily available
- Recognize that there are some specialized repairs that require licensing and oversight
- Basic data, however, should be available w/o impediment
 - How to operate, remove and replace
 - Part must be removed at a certain time – therefore continued airworthiness requires that repair station knows how to remove the part

Hunter

- Keep in mind the regulatory justification for ICA – to provide safety
- Supports enforcement of regulations
- Basic data must be available – but aftermarket providers must be willing to pay, handsomely
- Comfortable w/ what the regulations require – willing to pay for the data.

ACCESS

Filler

- Summarizes draft policy
 - TCH – ultimately responsible for providing ICA for components (consistent w. Whitlow letter).
 - STC – ICA for major changes in type design
 - Design Approvals
 - Major Alterations – under field approval require ICA
 - PMA – Suppliers to TCH w/ PMAs must provide ICA
 - TSOA – Design approval as early as 1981 TSO required ICA
 - Major Repairs – Don't need to explain how it was repaired – must indicate how subsequent repairer would determine airworthiness

Zondag

- When we go out of the manual and DER approves the repairs the information is not provided to the OEM – there is no FAA guidance on how to handle this situation now.

Browning

- Unless DER determines that existing ICA not sufficient to determine airworthiness, no need for new ICA
- However, if it looks sufficiently different, even though the airworthiness standards are the same, this may cause trouble

Zondag

- Sections VII and IX of the policy are the most important because they deal with the content
- ICA policy is market driven
- Six years ago, Sargent decided that it was in their best interest to make ICA available
- Looked at their manuals to establish parameters of what is airworthy and what is not
- Licensing the components in Boeing airplanes to many in the aftermarket – good for business development
- Restricting availability creates a black market for ICA

Nadolski

- Pratt supports availability; however, Sikorsky, not open to availability

Browning

- Currently, sub-tier vendors only have “repair according to drawing”
- Is it economically feasible to require OEMs to provide ICA when sub-tier vendors do not provide necessary information?
- There is a huge cost associated with assembling the necessary infrastructure to make ICA available,

Reum

- Repair stations get certification based on information from owner/operators then OEM restricts airlines from giving the repair stations the date. OEM says it will work directly with repair station, but then it refuses to provide the ICA.
- If working w/ Part 121, repair must be made in accordance to operator’s maintenance program, which can be different from the latest release of the maintenance manual, but OEMs insist on restrictive language in contracts before providing updates or subscription services for ICA.
- These restrictions prohibit the use of the maintenance manuals for anything but the exact repair included – this creates a conflict if operator wants repairs in accordance with earlier versions of the manuals.
- OEMs use to handle this with a disclaimer indicating that latest release of manuals provided the most current Instructions for Continued Airworthiness, and these *should* be followed.
- Now it’s a contractual limitation.
- In addition, the OEM assumes that the repair data is used if related PMA or DER approved repair is developed – consider this a breach of the contract.

Filler

- This discussion highlights the various levels of access.
- OEMs like Moog have a policy of simply refusing to provide ICA to maintenance providers; Pratt & Whitney provide the ICA, but include a

list of restrictions that could arguably, in a practical way, limit the ICA's availability. These are the subtleties of the "make available" issue.

Nadolski

- As OEM, I have an obligation under the FARs to provide the ICA for my product. Restricting use of the ICA to only repairing my part does not violate the FARs.

Filler

- So using manuals for DER repairs would require licensing?

Ploss

- What about using ICA to remove parts that are DER and PMA? Does that violate the restrictions that an OEM places on ICA use?

Hunter

- FARs and ACs allows for DER repairs and PMA replacement parts, so in order to comply with FARs, we need the OEMs ICA.

Epperson

- There is a chasm between one's data and the data needed to create an economical repair.
- Conditions on ICA prevent the bridging of that chasm and prevent maintenance providers from performing repairs.

O'Brien

- Boeing and Airbus will not supply ICA for subcontractor's parts, even if the policy requires TCH to provide ICA. They don't have the necessary infrastructure, and so will pass that mandate on to their suppliers as part of support agreement.
- Moog's support agreement only requires CMM be provided to the owner/operator, and so we won't give them to repair stations.

Filler

- Regardless of what a contract says, it cannot circumvent your regulatory responsibility. Just because your support agreement limits your responsibility to providing CMM to owner/operators, doesn't mean you don't have to provide them to repair stations under the FAR.

Zondag

- The problem is "What would Boeing distribute" if it was required to provide ICA.
- Historically, CMMs have included a great deal of information. That's why Sargent went through all of its CMMs, figured out what was necessary for airworthiness, and removed the rest.
- FAA will not address the question of restrictions/conditions included with the ICA. They will say it is a commercial question.

Nadolski

- Under this policy, would we have to allow ICA data to be used for hybrid products?

Filler

- Nadolski
 - PMA holders can make determination that ICA will suffice, rather than needing a supplemental ICA, for repairs.
 - If that's the case, what would a repair station do if an OEM could restrict ICA use? Should require an ICA for all PMA?
 - The question becomes "What is fair and reasonable" under the FARs?
- Hunter
 - Why not let PMA or DER repair holders develop their own ICA? They should have the capability to do it, if not, they shouldn't have PMA?
- Reum
 - FARs always bring you back to the TCH. FARs assume that PMA, OEM, DER repairs based on TCH data.
- Nadolski
 - Once you allow ICA to be used for PMA, you can't restrict your ICA use for that PMA. Otherwise it places repair stations in a position where the data is not available to them at all.
- Nadolski
 - We are not required to provide ICA for PMA. Why should we pay for all those development costs just so that someone else can use our data to make money off of our investment?
- Mueller
 - What about when Pratt & Whitney provides a PMA part instead of an OEM part? Can we use the OEM ICA then?
- Filler
 - This highlights the continuum of "make available" – some restrictions are okay; however, if industry has grown to rely on a certain practice to ensure safety, you have to ask what the safety implications of these restricts are.
- Nadolski
 - TCH should probably write ICA w/ realization that they will be used for PMA and DER repairs. This probably is in the best interest of safety.
 - But then you want the ICA provided at cost of printing! That seems unrealistic and unfair.
- O'Brien
 - PMA holder refuse to take responsibility for ICA
 - You enter the market for replacement parts you have to live of to the burden of providing that information to your customers.
 - Any design approval holder should have the responsibility for maintaining and providing that data for its customers.
- Filler
 - Access Issues:
 - ICA should be made available;
 - What are reasonable and unreasonable restrictions on access

Browning

- Concerned with implications when taking military aircraft and placing it into commercial service.
- Will use of military ICA be sufficient – don't want to have to be required to develop a new ICA

Filler

- Do people feel there is a difference when using ICA to
 - repair hybrid or PMA; or
 - develop new repair, PMA or DER repair?

Luehmann

- Sometimes it is necessary to deviate from ICA; we have to be able to do that when necessary.

Nadolski

- There is a difference.
- Why should we give you a starting point for your repair w/o requiring compensation?

Reum

- But what about when you are simply extending a repair – taking a component or part and repairing it rather than replacing it per the maintenance manual.

Filler

- By paying for maintenance manual, a repair station is buying that information
- The policy could be that:
 - ICA is provided and usable for anything allowed under the FAR;
 - or
 - ICA available subject to OEM's restrictions and liabilities.

Epperson

- If repair stations were required to develop ICA for DER repairs, they would not develop the repairs.

Reum

- Besides, having 20 manuals for one part is a bad policy. If everyone who develops DER repair puts out ICA, there would be too many ICA floating around.

Zondag

- Have the OEM place the information in their manual, rather than developing dozens of separate ICA.

COST

Filler

- There is a point at which the cost of an ICA can restrict availability
- Prohibitive cost can make it unavailable for practical purposes.

- On the one hand, a lot of investment goes into developing an ICA
- The flip side is that ICA are a condition of doing business – you need an ICA to get a design approval.
- Draft policy reflects idea that upkeep and maintenance of ICA are a legitimate cost that should be included in price, but that pre-certification costs should not be included, since OEM needs to develop for design approval regardless of whether they are made available to repair stations.

Nadolski

- Equity demands that whoever makes a profit through the use of the ICA should share in the upfront costs
- As for post-cert costs – P&W maintains a staff for tech pubs – measurable overhead.
- It's easy, therefore to add up post-cert costs.
- Need to keep in mind that when P&W charges for ICA, they are not doing more than asking those who benefit from the information to share in the cost of developing it.

Hunter

- We have no way of knowing what a fair and reasonable cost is, but we pay whatever they ask us to pay because we need those ICA to stay in business.

Zondag

- The FARs also require updating of manuals post-cert, so why make the distinction between pre-cert and post-cert?

Mueller

- I buy parts from the OEM, and presumably part of the cost included is the cost in developing the product, so why should I have to pay the same cost for the ICA? It seems that I'm double paying.

O'Brien

- OEMs rely on aftermarket sales for their profit (don't make money on supply agreements with TCH). The more repairs to parts maintenance providers perform the less money the OEM makes. If you're using our ICA to perform those repairs, it is only fair that we be able to charge for them.

Zondag

- Costs of parts include the cost of maintaining ICA, but OEMs lose aftermarket to PMAs, and therefore ICA price has to be adjusted.

O'Brien

- An under funded business should not be propped up by the FARs.
- If you can't afford the manuals, you should not be in the business.

Mueller

- But if the prices of the ICA are unreasonable, a business that is required by the FARs to have the ICA is placed in an impossible situation.

Filler

- This policy could look for prices that are patently unreasonable. Only in those cases would the FAA step in.
- There could be a range within which ICA cost have a rebuttable presumption of reasonableness.

Luehmann

- Policy could reflect understanding that there is an acceptable range in which no one will question the price.
- When price is beyond that range they must demonstrate how they determined their cost.

Browning

- Dividing it between pre-cert and post-cert costs could cause some timing issues.
- There are some things you might do to prepare the manual prior to cert, but which are related to post-cert activities.
- Also, would the determination of reasonable pricing be determined per product or for a companies overall maintenance upkeep.

Nadolski

- We shouldn't get that specific. Price determination should be kept general. Let the OEM figure out how to determine the price, whether considering cost of manual based on each product or for all products.

Filler

- Is price as big a problem as access?

Zondag

- I think they are related

Browning

- We've had complaints
- Unreasonably high prices create a black market for manuals.

Epperson

- Operators beat up on OEMs for high prices, so it ends up being regulated in the market itself.

Filler

- ICA has Appendices listing necessary tools
- OEM refuses to sell the tools
- Should the policy include requirement that tools listed in the ICA must be provided?

Hunter

- We tried to address this w/ the addition of restrictive language, where you have to follow the ICA. You can't use equivalent tools because that would not be following the ICA.

Luehmann

- O'Brien
 - Couldn't a refusal to sell parts do the same thing?
- Epperson
 - Be careful how far from the FAR you take this. There is a danger if this becomes too expansive that you might wake the sleeping giant.
- Nadolski
 - I'd rather not deal with that in this policy
 - The further away we move from the core ICA issue the less likely OEMs will come to the table and seek a compromise.

SOURCE APPROVED REPAIRS

- Filler
 - Repair that does not appear in the maintenance manual, but directs to a licensed repair station
 - Over time, more repairs have become Source Approval Repairs (SARs).
 - In ICA, if necessary for continued airworthiness, it should not be restricted to certain sources. This raises the question, how is continued airworthiness determined?
- Reum
 - If you sign an agreement with restrictions, you're stuck, you can't develop your own repair, and you have to send it to a licensed repair station.
- Browning
 - Post-cert, no repair developed is essential for continued airworthiness, so it shouldn't be in the ICA.
 - Discovered unairworthiness conditions that require complex repairs should be handled only by licensed repair stations for safety reasons.
- Nadolski
 - Figuring out what is necessary for continued airworthiness is the hardest part.
 - Any complex repair, whether pre or post-cert should be allowed to be a SAR.
 - Any post-cert repair can be a SAR.
- Luehmann
 - I'm concerned that the policy does not cover foreign repair stations that are non-FAA. They may be required to repair according to State of Design, which means they need the ICA.
- Filler
 - Agreed to look into State of Design vs. State of Registry issues
 - (Addressing issues of the policy's enforceability, in general) The FAA will have authority to enforce the policy under the FARs
- Hunter

- We want to include PMA holders as entitled to receive ICA under 21.50(b).
- Order 8110.42(a) requires that PMA show compliance w/ ICA, therefore fall under the purview of 21.50(b).

O'Brien

- That's too much of a stretch. You don't need a PMA for continued airworthiness.

Browning

- Are we saying that anyone can get an ICA? That doesn't make sense

Zondag

- (After reading 21.50(b) aloud) Yeah, it seems to cover PMAs.

Browning

- This seems like it's between the PMA holder and the FAA, why should the OEM have to get involved?

Hunter

- The FAA requires comprehensive showing when making an application for PMA, this includes a showing that the PMA meets the requirement in the ICA.

O'Brien

- If a PMA holder does not have the sophistication to develop their own ICA, they should not be allowed to be a PMA holder.

Reum/Hunter

- We have the sophistication to develop and ICA. We do the engineering ourselves. We don't rely on the ICA to develop the PMA, but the FAA demands to see the OEM's ICA when we make the application. How are we supposed to do it otherwise?

Filler

- There are a couple of different approaches
 - The current version of the policy only covers Repair Stations
 - We could change the policy language to simply quote 21.50(b)'s standard and:
 - Leave it for later determination whether PMA holder fall under 21.50(b); or
 - Indicate there is disagreement over whether PMA holders fall under 21.50(b), but at least raise the possibility.
- (Reviews policy's timetable regarding who was required to develop ICA and when).
- (Notes Heico's desire to remove the term "Major" from "Major Repairs".)
- Only Major repairs require design approval, so only those would require an ICA.

CONTENT

Filler

- We got airworthiness standard from ACs about engines and propellers – applied those standards to components.
- Requires basic maintenance, overhauls, cleaning, inspections, testing
- This information is already in the CMM, so we're not asking OEMs to develop more information.

Browning

- There is not requirement for components?

Filler

- The policy does not conflict with the ACs it simply adds to them.

Zondag

- Number 12 in Section IX, regarding Test Acceptance Criteria concerns me.

Filler

- We included that to prevent limits from becoming airworthiness limitations. If there is a limit then the DER could "approve" it if it was slightly beyond that limit, but could not if it was an airworthiness limitation.

MINIMUM INFORMATION REQUIRED

Filler

- Enough information in ICA to make determination of airworthiness

Epperson

- Does not believe that Major Repairs should be treated as design approvals
- Does not think they should require ICA.

Filler

- But major repairs occur and subsequent repair stations cannot determine airworthiness.

Epperson

- We document and inspect for airworthiness and then assume that it is okay. We don't require a pedigree.

Zondag

- If we can't find the pedigree we scrap the part or strip it down and rebuild it.

Browning

- It's more of a concern/issue when the part is critical

Epperson

- 200 out of the 500 repairs we perform a month are major repairs. It would be too cumbersome for use to create ICA for all of those.

Browning

- You need to determine if you make something new and different. If you so then it may require an ICA.

Joint Industry Policy Meeting
May 12, 2004
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The meeting adjourned at 5 PM. The second meeting is scheduled for June 23, 2004.

Joint Industry Policy Meeting
Date: June 23, 2004
Location: Hilton Hotel; Alexandria, Virginia

Attendees:	Marshall Filler	ARSA
	Christopher Durocher	ARSA
	Stu Browing	Hamilton Sundstrand
	Scott Collinge	Honeywell
	Jim Epperson	Nordam
	John Hunter	Heico
	Jim Reum	Heico
	Peter Mueller	SR Technics
	Mike Nadolski	Pratt & Whitney
	Kevin O'Brien	Moog
	Werner Luehmann	Lufthansa Technik
	Astrid Ploss	Lufthansa Technik

The meeting began at 8:30 AM. Marshall Filler opened the meeting.

Filler:

- The hope, today, is to reach consensus on an ICA policy, and on what the regulations require.
- If we cannot reach complete consensus, committee members are encouraged to file their own dissenting comments with the FAA.
- We would like to reduce, as much as possible, dissent among the committee members, in order to give the proposed policy increased legitimacy.
- The reason for remaining within the confines of the current regulations is to get FAA to issue this position as a policy, rather than through formal rulemaking.
- ARSA has requested an extension for the comment period on proposed policy 8110.ICA. The comment period was set to close 6/21/04.
- The ARSA policy may either be viewed as a comment on 8110.ICA, and thus any changes we propose will be incorporated into the policy that is currently going through notice and comment. In the alternative, the FAA could provide a separate notice and comment period for our draft policy, much the way they provided an additional notice and comment for the drug and alcohol rulemaking.
- The agenda is a consolidated list of the issues that were raised at the last meeting. When discussing these issues, we should try to stay on point, and address only the particular issue at hand.
- As a preliminary matter, can anyone provide an example of components that have Component Maintenance Manuals (CMM) that are normally part of the ICA?

Collinge:

- Any TSO requires that the CMM be part of the ICA. It's in the regulations.

Filler:

- ARSA position is that FAA should require CMM as ICA for any design approval – whether Type Certificate (TC) holder or supplier.

Collinge:

- In practice, suppliers are required to submit CMM to TC holder for approval. Commercial practice is that CMM is part of TC holder's ICA.

Filler:

- Currently, in off-aircraft component maintenance CMM is only part of the TC ICA if ICA incorporates it by reference.
- Other than remove and replace, off-aircraft maintenance CMMs are not required under 21.50(b)

O'Brien:

- The only reason Moog makes CMMs available is because of contractual obligations – 21.50(b) provides for no more than remove and replace.
- The data Moog provides, however, is the owner/operators to manage. They can provide that information to subcontractors if they want.

Luehmann:

- Do the Type Certificate Data Sheets (TCDS) reference the CMMs?

Filler:

- There is no consistent policy regarding CMMs referenced in TCDS, but even inclusion in the TCDS would not make CMM availability a requirement.
- Now turn to issues on the agenda.

Issue 1: What "design approvals" do ICAs cover?

Filler:

- Looking to have a policy that contains some sort of requirement that all Design Approval holders provide some sort of ICA.

Browning:

- The issue is "What Design Approvals do ICAs cover?" Not what Design Approvals require creation of an ICA.

Filler:

- This is a threshold question that does not deal with content or who is required to produce an ICA.

Epperson:

- Does not believe that Major Repairs should be included as a Design Approval.

Mueller:

- Regulations are clear that, if necessary, an ICA should be produced to cover the portions of a major repair that falls outside of current ICA.

Filler:

- The general policy is an ICA must exist to cover all design approvals. The question of what must be included in those ICA is a question we will deal with later.

Agreed: *The committee agreed to the proposed ARSA policy standard that would require that any Design Approval must have an ICA that covers it.*

Issue 2: ICA Requirement for U.S. v. Foreign Registered Aircraft

Filler:

- In response to inquiries at first ICA Committee Meeting, I reviewed whether ICA requirement applied to U.S. State of Design aircraft if they were registered outside the U.S..
- The creation of ICAs is a State of Design requirement. Therefore, the FAA would be responsible to ensure that ICAs were developed for aircraft for which the United States was the State of Design.
- However, the “make available” requirement in 21.50(b) applies only to those required to comply with the FARs.
- Repair Stations working on foreign registered aircraft are not required to comply with the FARs, and as a result, are not covered by the “make available” requirement of section 21.50(b)

Issue 3: Entitled to Obtain ICA

Filler:

- Rather than specifying which parties are entitled to receive ICAs (e.g., Repair Stations, PMA applicant under 8110.42, PMA holder) draft policy will track regulatory language.

Hunter:

- Heico would be willing to accept the compromise language.

Browning:

- Should the policy include, in addition to those required to comply with FARs, “and those seeking to become rated” to avoid the difficulties encountered when someone tries to obtain ICA so that they can be rated to do the repairs.

Agreed: *Committee agreed to track the regulatory language rather than specify which parties are entitled to ICA, but added that those seeking to become rated were among the parties entitled to ICA.*

Issue 4: Access “Made Available”

a. Cost

Filler:

- Fair and Reasonable Standard
 - No pre-certification costs (engineering/R&D costs)
 - Post-certification costs
 - Maintenance of publishing department costs

Nadolski:

- Policy should include “one price to all similarly situated purchasers” standard

Ruem:

- If two repair stations want to purchase ICA, but one has purchased the product, they get a lower price? That’s prejudicial.

Ploss:

- That is a commercial consideration. If you purchase in bulk you get a cheaper price, it’s the way the market works. It’s fair to charge a higher price for ICA to those who didn’t actually purchase the product.

Nadolski:

- There are also lots of other factors that affect the price of ICA, outside of the regulations.

Luehmann:

- The new reality is that owner/operators don’t do maintenance, so ICA are worthless to them.
- It is repair stations that need the ICA, so charging us more seems unfair.

Nadolsku:

- P&W wants to get maintenance work, too. So why should it give its product away to the competition? It doesn’t make commercial sense.

Mueller:

- But P&W recoups its costs when it sells its product. While a reasonable price is acceptable, why should P&W be allowed to pass those costs on to repair stations, as well?

Filler:

- Committee should focus on the regulations and leave the commercial issues to the FTC or Justice Department. Proposed language provides at least minimal guidance. While the FAA might not actively enforce it, at least there is a general standard articulated.

Agreed: *Committee agrees to “Fair and Reasonable Price” standard, with the inclusion of “One price to all similarly situated purchasers” language.*

b. Contractual Restrictions

Filler:

- The policy is looking for a general standard for contract restrictions. To identify objectionable contract restrictions would simply allow creative companies to come up with new restrictions.

Agreed: *After brief discussions, the Committee agrees to standards that include 1) Use of the manual for purposes other than performing maintenance on OEM parts is at the sole risk of the user, 2) No restrictions on certificate holders regulatory privileges and responsibilities, and 3) Restrictions cannot serve solely economic purpose. A fourth proposal regarding other uses outside the scope of ICA generated this discussion:*

Nadolski:

- A repair station should not get to use an OEM’s ICAs as a starting point to develop a competing repair.

Ruem:

- The regulations require you to follow ICA with additional deviations. Does this regulatory requirement violate P&W’s position?

Filler:

- How would P&W enforce this position?

Nadolski:

- Through contractual limitations – The repairs developed by a repair station that purchase P&W ICA must stand on their own and not rely on the ICA.

Hunter/Browning:

- The language in the other standards (assumption of risk and regulatory privileges and responsibilities) seems to cover this issue, making this standard superfluous.

Nadolski:

- What regulatory privilege allows a repair station to use an ICA as a starting point to develop a repair.

Filler:

- AC 120-77 – Cites original ICA as starting point to show that deviation meets airworthiness standards.

Nadolski:

- P&W would not take a position contrary to the regulations.

Agreed: *Committee agreed to eliminate, as superfluous, the proposed standard regarding use of ICA outside the scope of the regulations.*

Issue 5: Content

Filler:

- “What information is essential to continued airworthiness?” – that is the regulatory standard.
- In developing this policy ARSA used the ACs regarding engines and propellers as a guide.
- Policy attempts to include basic maintenance and overhaul data as that which is essential to continued airworthiness.

Ruem:

- Sounds like remove and replace

Filler:

- The policy is beyond remove and replace because here it is talking about off-aircraft repairs.

Browning:

- A torque motor is line replaceable, but there is no repair data. Sundstrand sends it back to the supplier who can repair it using design data, without ever producing an aftermarket ICA.

O'Brien:

- Some components don't have CMM because they go back to the manufacturer as “replace”. That's sufficient for line replaceable units on aircraft.

Filler:

- The policy needs to accurately describe which off-aircraft components require a CMM.

Ruem:

- If remove and replace is the maintenance protocol, it should be that way for everybody. If a CMM exists, it should be provided to all.

O'Brien:

- DER repair is always an option where no CMM exists. If I spend money to develop a DER repair, I shouldn't have to share that.

Browning:

- In order to be proprietary, a maintenance function must be outside the scope of continued airworthiness standard.

Filler:

- If part has PMA and it comes off the aircraft, what information must PMA holder provide for an ICA.
- Does anyone have a problem w/ continuing with the 8110.42 process where the PMA applicant must demonstrate to the FAA that the existing ICAs for the product are valid with the PMA part installed; otherwise, supplemental ICAs are required?

Agreed: *Committee agreed to maintain current 8110.42 process as described above.*

Epperson:

- What about maintenance fabrication under Part 43?

Filler:

- Maintenance Fabrication and major repairs should be subject to the same standards.
- If Continued Airworthiness standards affected then some sort of ICA is required.

Epperson:

- Policy must follow "major" as defined by FAR otherwise it creates additional confusion.
- Nordam flags repairs when it affects Continued Airworthiness.

O'Brien:

- How would an operator who leases the aircraft or something know 7 years down the line about the major repair?
- Nordam would have to provide some supplemental ICA.

Nordam:

- The Major Repair should be in the repair record.
- Fact is that customers require a 8110 on everything, whether the regulations require it or not.

Filler:

- The draft policy takes the position that for every Design Approval, there will be an evaluation required and maybe a full blown ICA.

Nadolski:

- Policy must reflect that PMA holder has a continuing obligation to see if ICA changes, and that the PMA remains valid under the current ICA.

Hunter:

- As long as the part number doesn't change, the revised ICA should still be valid.
- The burden, however, is on the PMA holder to make sure that ICA remains valid after revisions, for the particular PMA.

Filler:

- In order to ensure that PMA holder can be aware that ICA remains valid, are the OEM's willing to bring PMA holders into the protected ("make available") class under 21.50(b)?

Collinge/Browning:

- Absolutely not.

Filler:

- As compromise, we won't discuss this issue in the policy.

Agreed: Committee agreed not to raise issue of PMA holder responsibility for revisions of ICA.

Filler:

- How does the group want to handle the Source Approved Repairs? What about the proposed, "Once included in ICA, repairs cannot be removed"?

Ruem:

- Operators need confidence that a repair is performed properly. There are some repairs that would be too difficult to include in the ICA.

Collinge:

- Though repair station may be rated to do a repair, the regulators may not always be in a position to determine who can actually perform the repair.
- For safety reasons, a repair may be removed from the manual and made a source approved repair.

Mueller:

- Commonly, however, OEMs remove "simple" repairs from the ICA.
- It's commercial, not airworthiness, that is provoking these removals.

Browning:

- Can't a repair station just use the old ICA? Unless the repair was removed because of an AD, the data is still approved, right?

Filler:

- The repair station may still be required to substantiate the repair, though.
- How does the group feel about the restriction from removing a repair that is already in the ICA, under the theory that if it is already in the ICA, it is essential for continued airworthiness?

Collinge:

- A source approved repair is essential to continued airworthiness as determined by the Administrator. Noting that a certain repair is source approved meets the continued airworthiness standard for ICA content.
- The other issue is - what constitutes removal? If the repair is referenced, but detailed instructions are no longer included, is that removal?

Filler:

- It goes back to the methods, techniques or practices essential for continued airworthiness.

O'Brien:

- Fact of the matter is that it could hurt Moog commercially to remove repairs from ICA. The trend, to compete, is actually to increase the number of repairs in manuals.

Filler:

- Standard is that if not essential to continued airworthiness, it doesn't need to be in the manual.

Ruem:

- What about content availability for different parties? Will one person get an ICA with more information, if they buy the OEMs product, for instance?

Browning:

- Between the covers, all ICAs are the same. Everyone entitled to purchase an ICA purchases the same ICA.

O'Brien:

- So, subsequent repairs I share with one customer must be included in the ICA?

Browning:

- No, subsequent repairs aren't part of ICA (e.g. DER Repairs, Source Approved repairs).

- The policy standard should be that an ICA that comprises the certification basis cannot have repairs removed.

Agreed: *The Committee agreed that a repair that is essential to continued airworthiness cannot be removed from the manual.*

Final Business

Filler:

- Request that Collinge research TSOs to determine at what point FAA began consistently requiring ICA for TSOs.

The ICA Committee Meeting Adjourned at approximately 2 PM. Filler indicated that he would have the ARSA policy, incorporating the provisions agreed during the meeting, within two weeks. Committee members would then have a reasonable, but short, period of time to provide feedback and comments.