U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

WASHINGTON, DC 20591-0004

AERONAUTICAL REPAIR STATION ASSOCIATION	)	
Complainant	)	
vs.	)	Docket No. _____
Parker Hannifin Corporation	)	
Respondent	)	

PART 13 FORMAL COMPLAINT

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I. INTRODUCTION

Pursuant to Title 14 C.F.R. § 13.5[1], Complainant, the Aeronautical Repair Station Association ("Complainant", "ARSA" or "Association"), respectfully submits this Formal Complaint to the Administrator on behalf of its member, Sonico, Inc. (Sonico).

Complainant alleges that Parker Hannifin Corporation (Parker Hannifin), a Parts Manufacturer Approval (PMA) holder under § 21.303, violated § 21.50(b) by refusing to make Instructions for Continued Airworthiness (ICA) available to persons required to comply with those instructions when performing maintenance on articles for which Parker Hannifin holds the design approval.

Complainant requests that the Federal Aviation Administration (FAA) institute an investigation and issue an order finding that Parker Hannifin is in violation of § 21.50(b). The information and Items of Proof (IOP) submitted herein will enable the FAA to expeditiously conclude an informal investigation as contemplated by §13.5(i). Should the Administrator believe that additional information is necessary to make a final determination, ARSA urges the

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

Administrator to issue an order of investigation in accordance with part 13, subpart F.

ARSA represents the interests of aircraft maintenance and alteration facilities before the FAA, the National Transportation Safety Board (NTSB), other federal agencies, and National Aviation Authorities (NAA) around the world. Its members perform maintenance and alterations on behalf of U.S. and foreign air carriers, as well as other aircraft owners and operators. In addition, the Association's membership includes companies that distribute parts to international civil aviation businesses, as well as air carriers and manufacturers. Through its publications, training activities and annual repair symposium, ARSA educates the aviation design, production and maintenance industries on domestic and international regulatory requirements.

Sonico is a part 145 certificated repair station located in the state of Washington. It holds accessory and limited airframe, landing gear and radio ratings (IOP 1 & 2). Sonico is a member of ARSA, and requested the Association's assistance in filing this complaint after Parker Hannifin refused numerous requests for the ICA that are the subject of this complaint.

Respondent Parker Hannifin is the holder of PMA No. PQ0658NE (IOP 3). The PMA covers Dual Temperature Sensor (Sensor) part number 055-019-001. This Complaint focuses on the Sensor installed on the Airbus A340-541 and A340-642 aircraft. Respondent's address, as noted on the PMA, is:

Parker Hannifin Corporation
300 Marcus Boulevard
Smithtown NY 11787-9400
United States

II. FACTS

Parker Hannifin holds the PMA for the Sensor part number 055-019-001. Parker Hannifin applied for the PMA for the Sensor after January 28, 1981 and the affected product had a type certificate (TC) application date after January 28, 1981. [Part Manufacturer Approval dated 09/02/2005, Airbus Model A340-642 - approved July 22, 2002, Airbus Model A340-541 - approved January 27, 2003] (see IOP 3 & 4).

Sonico is an appropriately rated FAA-certificated part 145 repair station (see IOP 1) that performs maintenance on the Parker Hannifin Sensor (see IOP 2).

On May 16, Sonico requested maintenance manuals electronically from Paul Wehr, Senior Contract Administrator, Parker Hannifin Corporation, for the Dual

Temperature Sensor (IOP 5). In a letter to letter to Thomas A. Piraino, Jr., Vice President, General Counsel and Secretary, Parker Hannifin Corporation, on July 3, 2006,Sonico requested maintenance manuals for the Sensors on which Sonico performs maintenance pursuant to part 43 (see IOP 6). Sonico requested "information relating to the interface of the part with the airplane, including basic control and operation information; servicing information, the recommended periods at which the sensor should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerance, and work recommended at these periods; troubleshooting information; and details for the application of special inspection techniques." Pursuant to §§ 21.50(b), 25.1529 and appendix H to part 25, this information is a required aspect of the ICA for the Parker Hannifin Sensor. To date Sonico has not received a response from Parker Hannifin despite numerous follow-up inquiries on its original request (see IOPs 7 & 8).

III. ANALYSIS

A. ICA Regulatory Framework

Since 1941, the federal government has required that manufacturers of civil aviation products prepare instructions relating to the installation, operation, servicing and maintenance of those products. The early rules specifically required that the design approval holder make the manuals available to persons performing maintenance under the applicable regulations.[2] Additionally, Technical Standard Orders (TSOs) have also required development and dissemination of maintenance information. Between 1941 and 1980 (when the current version of § 21.50(b) was adopted), the FAA and its predecessor agency consistently required the holders of design approvals for aircraft, aircraft engines, propellers and appliances to prepare instructions for performing maintenance.

In 1980, the FAA adopted the current version of § 21.50(b), which requires all design approval holders to provide ICA prepared in accordance with the airworthiness requirements applicable to the affected product. If the affected product has a TC or supplemental type certificate (STC) for which the application was made after January 28, 1981, a PMA holder must provide supplemental ICA, unless the product's ICA is still valid with the PMA part installed.

Complainant respectfully submits that Parker Hannifin, by not providing this certificated and appropriately rated repair station with the complete ICA for the Sensor, has violated § 21.50(b).

1. Section 21.50(b)

[2] See Parts 6, 7, 13 and 14 of the Civil Air Regulations (CARs) and corresponding parts of the recodified FAR.

As the design approval holder for the Sensor, Title 14 CFR requires that Parker Hannifin prepare and submit ICA as part of the PMA application process. It also requires Parker Hannifin to distribute and maintain those ICA subsequent to certification. Section 21.50(b) contains the current legal requirement for establishing and distributing ICA, as follows:

> [t]he holder of design approval, including either the type certificate or supplemental type certificate for an aircraft, aircraft engine, or propeller for which application was made after January 28, 1981, shall furnish at least one set of complete Instructions for Continued Airworthiness, prepared in accordance with Secs. 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, or 35.4 of this chapter, or as specified in the applicable airworthiness criteria for special classes of aircraft defined in Sec. 21.17(b), as applicable, to the owner of each type aircraft, aircraft engine, or propeller upon its delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later, and thereafter make those instructions available to any other person required by this chapter to comply with any of the terms of those instructions. In addition, changes to the Instructions for Continued Airworthiness shall be made available to any person required by this chapter to comply with any of those instructions.

This is the primary regulation that requires Parker Hannifin, as a PMA design approval holder, to prepare ICA for its Sensor, and make them available to any person required by the regulations to comply with these instructions.

Notwithstanding the clear language of § 21.50(b), the FAA has been slow in enforcing the design approval holder's obligation to make ICA available to maintenance providers. On the other hand, the agency has vigilantly enforced the requirement that those performing maintenance do so in accordance with the ICA. In ARSA's view, this "double standard" of enforcement exists because the FAA's two primary safety oversight organizations, the Aircraft Certification Service (design and production) and the Flight Standards Service (operations and maintenance), have not developed a standard and uniform FAA policy. This is particularly unfortunate at a time when the agency has encouraged certificate holders to use a coordinated systems approach, complete with risk analysis, in managing their daily operations. System safety concepts are grounded in the fundamental belief that accidents and other safety lapses can be minimized by identifying and addressing "precursors" before they become full-blown safety problems.

In a policy statement issued on July 12, 2005, the FAA discussed the shared responsibility of Design Approval Holders (DAHs) and operators in achieving safety objectives. The FAA recognizes that to achieve safety goals in an increasingly complex industry "we need to facilitate more effective

communication of safety information between DAHs and operators." Specifically, the policy seeks to "build on current regulations (§§ 21.50, 21.99) that require DAHs to "make available" certain service information that is necessary to maintain the airworthiness of airplanes" (IOP 9). Clearly, this policy reinforces the regulatory requirement of DAHs to provide airworthiness information, including ICA, to operators and those that maintain owner/operator aircraft and related components.

2. Part 25, Appendix H

Part 25 contains the airworthiness standards for the transport category aircraft that require installation of the Parker Hannifin Sensor. One of those standards, § 25.1529, requires an applicant for an aircraft type certificate to prepare ICA in accordance with appendix H. The appendix sets guidelines for the content and details what the design approval holder must include in the ICA.

Appendix H, paragraph H25.1(b) states, "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." Further the ICA must be supplied either by the manufacturer of an appliance or product installed on an aircraft, or by the manufacturer of the aircraft (see Appendix H, para. H25.1(b)).

Appendix H, paragraph H25.3(b) also requires that ICA include:

> (b) *Maintenance Instructions.* (1) Scheduling information for each part of the airplane and its...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...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)**

As the appendix outlines, the ICA must contain *details* for performance of maintenance, including specific information regarding maintenance techniques, overhauls and inspections for each part of the aircraft. It further states that an appliance manufacturer (i.e.: PMA holder) may provide the ICA (instead of the

TC or STC applicant) when the item has an exceptionally high degree of complexity. On several occasions, Sonico requested from Parker Hannifin the detailed maintenance information appendix H explicitly requires (see IOPs 5 through 8). In violation of §§ 21.50(b), 25.1529 and part 25, appendix H, Parker Hannifin consistently denied these requests by not responding to the Sonico's inquiries and numerous follow-up attempts.

B. Repair Stations Must Comply with the ICA Requirements

Sonico is a part 145 certificated repair station rated to perform maintenance, preventive maintenance and alterations on the Parker Hannifin Sensor. Section 145.109(d)(2) requires Sonico to obtain and keep current the ICA for this appliance. In addition, § 43.13(a) generally requires that Sonico perform the maintenance, preventive maintenance or alterations of these items in accordance with the current ICA.

As used in § 21.50(b), part 145 repair stations qualify as "other persons" required to comply with the regulations. An FAA legal interpretation regarding ICA requirements, commonly known as the "Whitlow Letter," supports this reading of the regulation (see IOP 10). The letter concluded that FAA certificated repair stations are "other persons required by [Chapter I of Title 14 CFR] to comply with any of the terms of the instructions." The letter correctly observed that although § 21.50(b) did not "technically" require the aircraft manufacturer to provide accessory ICA (because the design approval holder filed its application for the BAe-146's type certificate prior to January 28, 1981), such a refusal was **"puzzling, at best, and, at worst, [was] an artificial obstacle to ensuring that each BAe-146 airplane is maintained in an airworthy condition."** (emphasis added).

In contrast to the BAe-146, the Parker Hannifin Sensor is installed on the Airbus Model A340-541 and A340-642 which were type certificated after January 28, 1981, the date specified in § 21.50(b). In addition, Title 14 CFR has required maintenance manuals for complete aircraft and their accessories since 1970. As a result, Parker Hannifin's refusal is not only an artificial barrier to performing airworthy maintenance, but is also a violation of the plain language of the pertinent regulations.

1. Current Part 145

Part 145 requires that Sonico possess ICA both at the time of certification and at the time maintenance is performed (see §§ 145.51(b), 145.109(d)(2), and 145.211(c)). This makes it a "party required to comply with these regulations" as set forth in § 21.50(b).

Section 145.51(b) provides, in part, "The equipment, personnel, **technical data**, and housing and facilities required for the certificate and rating, or for an

additional rating must be in place for inspection at the time of certification or rating approval by the FAA" (emphasis added). Section 145.109(d) further specifies that data "required for the performance of maintenance, preventive maintenance, or alterations under [a] repair station['s] certificate and operations specifications" includes ICA. In addition, § 145.211(c) requires that a repair station include in its quality control manual the manufacturer's inspection standards and any related data the manufacturer specifies, information which is most appropriately found in the ICA.

Based on the requirements identified above, part 145's regulatory scheme requires a repair station to possess the current ICA appropriate for its rating both at the time of certification and at the time the repair station performs the work. In addition, it requires repair stations to integrate the ICA into their manuals and procedures and ensure repair station personnel follow them when performing work. In short, the FAA has made the possession of current ICA a condition of obtaining a repair station certificate.

Thus, to create harmony within the regulations and avoid what the Whitlow Letter refers to as an "artificial obstacle" to airworthy maintenance, one must recognize that § 21.50(b) and the related regulations require design approval holders to make ICA available to repair stations. Parker Hannifin, however, has not provided this technical information to repair stations such as Sonico.

Section 145.109(d) mandates that documents and data must be current and accessible when repair station personnel perform the relevant work. This includes Instructions for Continued Airworthiness, Maintenance Manuals and Overhaul Manuals.

2. Part 43 Requirement to Use ICA

In addition to *possessing* the ICA at the time of certification, maintenance providers must *use* the ICA when performing maintenance, preventive maintenance and alteration on civil aviation articles pursuant to §43.13. That rule states that those who perform maintenance on appliances, shall use "the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods techniques, and practices acceptable to the Administrator." (§ 43.13(a)).

In addition, maintenance providers are required to "do that work in such a manner...that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly altered condition (with regard to...qualities affecting airworthiness)." (§ 43.13(b)).

The ICA required under § 43.13(a) are necessary for Sonico to perform maintenance in an airworthy manner. They contain information relating to

maintenance techniques, overhauls and inspections. Without the ICA, a repair station must forego doing that work or develop its own, non-standard maintenance procedures.

3. FAA Legal Interpretation: The Whitlow Letter

On December 13, 1999, the FAA's deputy chief counsel issued the Whitlow Letter, a legal interpretation related to the issues raised in this Complaint (IOP 10). The Whitlow Letter related to a dispute in which GE Accessory Services-Grand Prairie, Inc. (GE-Grand Prairie) protested British Aerospace PLC's (BAe) refusal to provide ICA for various airframe accessories installed on the BAe-146 airplane.

The Whitlow Letter describes the essential elements of a § 21.50(b) violation. First, the subject accessories must be part of the approved type design, and not added by someone other than the design approval holder pursuant to a Supplemental Type Certificate. Since the Parker Hannifin Sensor is part of the Airbus A340-351 and A340-642 model aircraft, they are part of the approved type design.

Second, the repair station requesting the ICA must possess the appropriate certificate ratings to perform maintenance on the articles for which it is requesting the ICA. As discussed in Section II, Sonico holds an FAA part 145 certificate and the ratings required to perform maintenance on the Sensor in question. Therefore, according to the elements set forth in the Whitlow Letter, § 21.50(b) requires Parker Hannifin to provide Sonico with the ICA for the Sensor.

C. Parker Hannifin Must Furnish Sonico with ICA

Section 21.50(b) requires that the holder of a design approval must furnish ICA. Based on the evidence presented herein, Parker Hannifin meets the criteria of § 21.50(b), thereby requiring it to provide Sonico with ICA.

1. Parker Hannifin Holds the Design Approval for the Dual Temperature Sensor Part Number 055-019-001

Parker Hannifin holds PMA No. PQ0658NE for the Sensor installed in the Airbus A340-541 and A340-642 (see IOP 3). Sections 21.50(b), 25.1529 and part 25, appendix H, therefore, clearly cover this appliance. As a result, Parker Hannifin meets the first criteria for providing ICA.

2. Airbus Made its Application for the A340-541 and A340-642 After January 28, 1981

Airbus applied for the TC for the A340-541 and A340-642 after January 28, 1981 (see IOP 4). Therefore, the Parker Hannifin Sensor installed in these Airbus models meets the second criteria cited in § 21.50(b).

3. The Parker Hannifin Sensor is an Accessory that is Part of the Model A340-541 and A340-642 and Subject to the ICA Requirements

Part 25, Appendix H, paragraph 25.1(b) directs that the ICA for each airplane must include the ICA for each appliance and any required information relating to the interface of those appliances with the airplane. In the present case, Parker Hannifin must provide the ICA for the Sensor as it is part of the Airbus A340-541 and A340-642 type certificated aircraft.

"Appliance" is defined in 14 CFR § 1.1 to mean "any instrument, mechanism, equipment, part, apparatus, appurtenance, or **accessory**, including communication 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 the airframe, engine, or propeller." (emphasis added.)

The Sensor referenced in this complaint (Part No. 055-019-001) is an appliance within the meaning of 14 CFR § 1.1. The ratings appropriate for maintenance, preventive maintenance and alteration of the Sensor is the accessory rating held by Sonico.

Appendix H, paragraph H25.1(b) requires that ICA be available, "for each appliance." In addition, if a parts manufacturer fails to provide the ICA, then H25.1(b) requires that the higher level ICA "must include the information essential to the continued airworthiness of the airplane." The ICA are required not just for the completed type certificated product, but also for each part included in the aircraft. As a result, whether as separate ICA or as a portion of the ICA for the aircraft, Parker Hannifin must provide Sonico the ICA for the Sensor referenced in this complaint.

4. FAA Legal Interpretation: Order 8110.54

FAA Order 8110.54, issued on July 1, 2005, reinforces the fact that design approval holders must provide ICA to properly rated repair stations under § 21.50(b) (IOP 11). The opinion sets forth four conditions that, if met, require a design approval holder to make ICA available to the repair station. Those conditions are set forth in *italics* below, with the relevant facts in **bold**.

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

Airbus applied for the type certificate for the A340-541 and A340-642 aircraft on [Airbus Model A340-642 - approved July 22, 2002, Airbus Model A340-541 - approved January 27, 2003].

2. *The latest related certification basis includes § 21.50 as amended 09/11/80 or later (and § 25.1529 as applicable), i.e., the certificate holder was required to develop (furnish) ICA as part of the certification process.*

The certification basis for the A340-541 and A340-642 model aircraft encompasses § 21.50(b) and part 25, amendments 25-1 through 25-95, 25-97, 25-98, and 25-104. Part 25, appendix H was added by Amendment 25-54.

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

Sonico is rated to perform maintenance on the specified Parker Hannifin accessories. As discussed above, in performing work on these accessories, Sonico is required under Chapter 1 of Title 14 CFR to comply with the ICA for these parts. Specifically, §§ 43.13 and 145.109(d) require that Sonico possess and use the ICA in performing maintenance, preventive maintenance and alterations on the Sensor.

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

It is Complainant's understanding that the Airbus A340 Aircraft Maintenance Manual (AMM) states that the AMM provides information for performing maintenance on aircraft including references to the CMMs of its suppliers. The CMM contain maintenance instructions specifically required by Title 14 CFR part 25, appendix H, paragraph H25.3(b). With respect to the Parker Hannifin Dual Temperature Sensor Part Number 055-019-001, it is Complainant's understanding that the Airbus AMM refers to the Parker Hannifin CMM for this component. Indeed this is the reason Complainant brings this complaint on behalf of its member who was unable to obtain the CMM from the design approval holder, Parker Hannifin. Complainant urges the FAA to examine the A340 AMM to determine whether this condition is satisfied.

D. Required Content: Instructions for Continued Airworthiness (ICA)

The ICA for PMA parts must contain all appropriate instructions essential to the continued airworthiness of the affected product. The ICA required by part 25 contains the Maintenance Instructions for the Sensor. Parker Hannifin has failed to provide these instructions to Sonico.

1. Meaning of Airworthiness

Under the statute formerly known as the Federal Aviation Act of 1958,[3] the FAA must oversee the design, production, operations and maintenance of civil aviation products and other articles.[4] The FAA accomplishes its statutory responsibility through a comprehensive regulatory system that covers each person engaged in these activities.[5] Although the rules vary depending on the specific FAA certificate or approval obtained, the concept of airworthiness applies equally to all regulated persons. Each entity functions as part of an integrated civil aviation system that maintains safety at each stage of an article's "regulatory life."

Designed articles must meet the applicable airworthiness standards (including the ICA requirements) contained in parts 23, 25, 27, 29, 31, 33 and 35 of the regulations. Each article, produced in conformity with its approved design, must also be in condition for safe operation when it leaves the control of the design approval holder or production approval holder.

Similarly, the regulations require that parties operating aircraft do so in an airworthy manner. The regulations, guidance material, and enforcement cases make it abundantly clear that this only occurs when owner/operators or the maintenance providers working on their behalf, perform maintenance, preventive maintenance and alterations in an airworthy manner.

The "airworthiness" requirement stems from 49 U.S.C. § 44704(d), which states, "[t]he Administrator shall issue an airworthiness certificate when the Administrator finds that the aircraft conforms to its type certificate and, after inspection, is in condition for safe operation."

Case law has further clarified the standard for determining airworthiness. The Administrator has consistently held that an "aircraft is airworthy when: 1) it conforms to its type design or supplemental type design and to any applicable airworthiness directives, ***and*** 2) is in a condition for safe operation." In the Matter of Watts Agricultural Aviation, FAA Order No. 91-8, at 17 (April 11, 1988, citing

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[3] 49 U.S.C. § 44701 *et seq.*

[4] The term "article" when used in this Complaint shall have the same meaning as in the new section 145.3 (66 FR 41088, August 6, 2001). It includes aircraft, airframe, aircraft engine, propeller, appliance or accessory part.

[5] The term "person" is defined in part 1 to mean "an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them."

the Federal Aviation Act of 1958, as amended, 49 USC App. 1423 (c)) (IOP 12). Moreover, as the 10th Circuit Court of Appeals made clear in Morton v. Dow, "[a]irworthiness is not synonymous with flyability. An aircraft that does not conform to its type certificate is unairworthy, even if it may be in condition for safe operation." 525 F.2d 1302, 1307 (10th Cir. 1975) (emphasis added).

The FAA has established the ICA as a critical link in the airworthiness chain between the design and production rules, on the one hand, and the operating and maintenance rules on the other. As discussed above, the FAA requires an applicant to prepare ICA during certification, and upon certification, revise them as necessary to reflect operating experience. Most importantly, design approval holders must make the ICA available to owner/operators and maintenance providers. The ICA provide basic safety information that allows owner/operators or the person performing maintenance on their behalf to maintain and alter the article in accordance with instructions developed by those in the best position to provide them—the manufacturers of civil aviation articles.

2. Accessory Maintenance Instructions

Part 25, appendix H, paragraph H25.3(b) provides that the ICA for a type certificated aircraft must contain "Maintenance Instructions" for each part of the aircraft, including accessories. Further, the TC applicant may refer to an accessory, instrument or equipment manufacturer, like Parker Hannifin, as the source of the maintenance instructions. **Parker Hannifin, by its failure to provide the ICAs to Sonico in spite of numerous requests, has constructively refused to provide the maintenance information for the Sensor installed in the Airbus A340-541 or A340-642 aircraft.**

Because Parker Hannifin has failed to provide the required maintenance instructions, it has failed to make complete ICA available. As discussed above, these manuals and information are essential to the continued airworthiness of the Sensor.

E. The Parker Hannifin ICA are Essential to Continued Airworthiness

In refusing to provide Sonico with ICA for its Sensor, Parker Hannifin contradicts the FAA's policy, as illustrated by a series of enforcement actions that have held operators and repair stations accountable for not following the airworthiness requirements *found in the ICA* and for failing to perform airworthy repairs.

1. Failure to Follow the Applicable Maintenance Manual

FAA and NTSB enforcement decisions establish that air carriers and maintenance providers violate § 43.13(a) when they fail to perform maintenance in accordance with the ICA. As the agency is aware, most enforcement cases settle without an administrative hearing and therefore there is no reported

decision. Nevertheless, such cases are a matter of public record and Complainant requests the FAA to take administrative notice of their existence. Through these actions, the FAA and NTSB have clearly established that proper maintenance and alterations are so essential to continued airworthiness that those who fail to comply with their regulatory obligations face enforcement action.

Complainant believes that the reported enforcement cases discussed below are representative of the general enforcement cases on this topic.

In Administrator v. Aero Lectrics, Inc., 6 NTSB 1085, 1088 (1989) (IOP 13), the NTSB concluded that a repair station that failed to perform an overhaul for an air carrier in accordance with the accessory manufacturer's overhaul manual violated § 43.13(a). The Administrator noted:

> The record establishes that respondent overhauled the blower without the aid of either an overhaul manual or such other technical data as would assure that the work would be correctly or properly accomplished.
>
> * * * * *
>
> A repair station such as respondent is permitted to do maintenance work based on technical data supplied by the operator usually in the form of the maintenance manual.

Similarly, In the matter of Empire Airlines, Inc., FAA Order No. 2000-13, Docket No. CP98NM0011 (June 8, 2002) (IOP 14), an administrative law judge held that Empire violated § 43.13(a) when "the left engine mount of Empire's Fairchild F-27F aircraft was repaired in a manner not specified by either the Fairchild Structural Repair Manual (SRM) or Overhaul Manual (OM)." The Fairchild overhaul and structural repair manuals permitted only two methods of repair for non-negligible damage to the engine mount, patching, and insertion. Further, the manuals stated that any damage in excess of the allowable limits for patching and insertion required replacement of the engine mount. Empire ignored the Fairchild manuals and performed a "sleeve" weld repair on the engine mount. The law judge stated that Empire was "obligated to follow the terms of governing manuals" and affirmed the civil penalty. The Administrator denied Empire's appeal and affirmed the law judge's decision.

Furthermore, in Administrator v. Missouri Aerotech Industries, Inc., FAA Order No. EA-3999, Docket No. SE-13249 (October 15, 1993) (IOP 15), the Administrator appealed from the law judge's decision not to revoke a repair station's certificate when it consistently performed numerous repairs on navigational equipment without the benefit of the manufacturer's manuals or other approved or acceptable data. In reversing the law judge's decision and affirming the revocation of Respondent's repair station certificate, the NTSB stated:

> [W]e agree with the Administrator that the impact on aviation safety of such unauthorized repairs is not trivial. The reliability of a repair station's work depends in large part upon its adherence to the approved techniques and procedures which are **set forth in published technical data**. Id. at page 12 (emphasis added).

Finally, in Administrator v. Alphin, 4 NTSB 23 at 26 (1984)(IOP16), the NTSB held that:

> [T]he overhaul manual for this engine, in relevant part, specifies only a visual inspection of camshaft 'journals for scoring, deformation and excessive wear' and of 'cam lobes for profile wear, scoring and pitting'...and it does not, apparently for proprietary reasons, provide the information needed to do so. While we do not take issue with the FAA inspector's opinion that a better overhaul might be accomplished if testing not dictated by the overhaul manual were undertaken, **the regulatory standard is not what an inspector believes should be done in connection with an overhaul, but, rather what the Administrator has specified, through approved overhaul manuals and other documents, must be done**. (emphasis added.)

The holding in this case demonstrates that under Title 14 CFR the ICA contains information essential to the continued airworthiness of the type-certificated product.

The law is clear—a repair station must have current manufacturer's maintenance information at the time of certification and each time it performs work. In addition, maintenance must generally be performed in accordance with the methods, techniques and practices set forth in the pertinent manufacturer's maintenance or overhaul manual. This duty applies whether the article is an aircraft, aircraft engine, propeller, **appliance**, accessory, instrument **or a part thereof**.

2. Operations with Improperly Repaired Appliances

Operating an aircraft with a damaged or improperly repaired appliance renders the aircraft unairworthy. Each of the operating rules found in parts 91,121, 125 and 135 prohibits such operation. Therefore, performing maintenance on all parts of the aircraft in accordance with the applicable maintenance manual is essential to the continued airworthiness of the aircraft.

In the Matter of Warbelow's Air Ventures, Inc., FAA Order No. 2000-3, Docket No. CP97AL0012 (February 3, 2000)(IOP 17), the FAA imposed a civil penalty on an air carrier for operating an unairworthy aircraft contrary to §§ 91.7(a) and 135.25(a)(2). Specifically, the two aircraft flew for almost 1,400 hours with

improperly modified and repaired fuel pumps. In affirming the law judge's finding of unairworthy operation due to the fuel pumps being in an unsafe operating condition, the Administrator stated:

> The Romec manual for the fuel pumps provides: '**Avoid application of excessive torque when tightening valve cover mounting screws. Tighten screws progressively to 29-31 lb.-in. torque.**' (emphasis in original). Rimer did not have a copy of the Romec manual when he modified the two fuel pumps. He did not know the proper torque values and did not use a torque wrench. It is undisputed that if the screws are not tightened properly the fuel pumps may leak, resulting in a fire hazard.

In the matter of USAir, FAA Order No. 92-48, Docket No. CP91NM0183 (July 22, 1992) (IOP 18), the FAA found that USAir operated an unairworthy aircraft contrary to §121.153(a)(2). The aircraft had sustained damage to its nose gear water deflector during pushback from the gate. Because the aircraft no longer conformed to its type certificate, the Administrator affirmed the law judge's finding that the aircraft had been operated in an unairworthy manner.

Persons who design, produce, operate and maintain civil aircraft are responsible for ensuring airworthiness. Parker Hannifin's denial of Sonico's request for ICA is contrary to the regulatory obligations on which safety is based.

IV. CONCLUSION

For the reasons set forth above, Complainant requests that the FAA initiate an informal investigation and thereafter issue an order finding that Parker Hannifin is in violation of §§ 21.50(b), 25.1529 and part 25, appendix H. The Complainant has provided the Administrator with the necessary IOPs establishing these violations.

If the FAA requires additional information to establish the violation, Complainant urges the Administrator to issue an order of investigation in accordance with part 13, subpart F. A formal investigation would allow the Administrator to name a Presiding Officer, issue subpoenas, take depositions, hold an evidentiary public hearing and issue a written report of the investigation.

Complainant urges the FAA to consider this Complaint in the broadest possible terms. In the Association's view, it would make little sense for the Administrator to issue a ruling favorable to Sonico without recognizing that the same issues apply throughout the aviation maintenance industry. Ultimately, Complainant requests that the Administrator enforce the ICA requirements against design approval holders as diligently as it enforces them against maintenance providers and operators.

LIST OF ITEMS OF PROOF (IOP)

- **IOP 1** – Sonico, Inc.'s repair station certificate, issued January 17, 1985

- **IOP 2** – Sonico, Inc.'s ratings and operations specifications (multiple effective dates)

- **IOP 3** – Parker Hannifin Corporation Parts Manufacturer Approval Holder No. PQ0658NE, dated September 13, 2005

- **IOP 4** – Airbus Type Certificate, No. A43NM, dated March 19, 2007 (covers both Airbus planes)

- **IOP 5** – Sonico, Inc.'s E-mail to Parker Hannifin Corporation requesting overhaul/component maintenance manuals for the Dual Temperature Sensor, part no. 055-019-001, dated May 16, 2006

- **IOP 6** – Sonico, Inc.'s request to Parker Hannifin Corporation for ICA data for the Dual Temperature Sensor, part no. 055-019-001, dated July 3, 2006

- **IOP 7** – Sonico, Inc.'s E-mail to Thomas Piraino requesting Parker Hannifin Corporation's reply to July 3 & August 31, 2006 letter

- **IOP 8** – Sonico, Inc.'s E-mail to Steve Vaughn requesting Parker Hannifin Corporation's reply to July 3, 2006 letter

- **IOP 9** – FAA policy statement, dated July 12, 2005, "Safety- A Shared Responsibility- New Direction for Addressing Airworthiness Issues for Transport Airplanes."

- **IOP 10** – FAA legal interpretation, dated December 13, 1999 (Whitlow letter)

- **IOP 11** –FAA Order 8110.54, Instructions for Continued Airworthiness Responsibilities, Requirements and Contents, Issued July, 1 2005.

- **IOP 12** – *In the Matter of Watts,* FAA Order No. 91-8, served April 11, 1988

- **IOP 13** – *Administrator v. Aero Lectrics, Inc.*, 6 NTSB 1088 (1989).

- **IOP 14** – *In the matter of Empire Airlines, Inc.*, Docket No. CP98NM0011, FAA Order No. 2000-13 served June 8, 2000.

- **IOP 15** – *Administrator v. Missouri Aerotech Industries, Inc.*, Docket No. SE-13249, FAA Order No. EA-3999 served October 15, 1993.

- **IOP 16** – *Administrator v. Alphin*, 4 NTSB 23 Order EA-2008 adopted May 31, 1984

- **IOP 17** – *In the Matter of Warbelow's Air Ventures, Inc.*, Docket No. CP97AL0012 FAA Order No. 2000-3 served February 3, 2000.*In*

- **IOP 18** – *the Matter of USAir*, Docket No. CP91NM0183 FAA Order No. 92-48 served July 22, 1992.

Respectfully submitted,

Marshall S. Filler E: msf@potomac-law.com

Counsel to Complainant Aeronautical Repair Station Association
Obadal, Filler, MacLeod & Klein, P.L.C.
117 North Henry Street
Alexandria, VA 22314-2903
T: 703-299-0784
F: 703-299-0254

February 29, 2008

CERTIFICATE OF SERVICE

I, Colin P. Carroll, certify that on February 29, 2008, I caused the executed original and one copy of the foregoing Aeronautical Repair Station Association part 13 Complaint on § 21.50(b) of the Federal Aviation Regulations to be delivered via Certified Mail, Return Receipt to:

Federal Aviation Administration
Office of the Chief Counsel
800 Independence Avenue, S.W.
Washington, D.C. 20591-0004
ATTN: Enforcement Docket AGC-10

I, Colin P. Carroll, certify that on February 29, 2008, I caused one copy of the foregoing Aeronautical Repair Station Association part 13 Complaint on § 21.50(b) of the Federal Aviation Regulations to be delivered via Certified Mail, Return Receipt to:

Thomas A. Piraino, Jr.
Vice President, General Counsel and Secretary
Parker Hannifin Corporate Headquarters
6035 Parkland Boulevard
Cleveland, OH 44124-4141

Signature

IOP

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To

Part 13 Formal Complaint

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Air Agency Certificate

Number **IX6R629N**

This certificate is issued to

SONICO, INC.

whose business address is

6998 - 26TH AVENUE, BUILDING 408
MOSES LAKE, WASHINGTON 98837

upon finding that its organization complies in all respects with the requirements of the Federal Aviation Regulations relating to the establishment of an Air Agency, and is empowered to operate an approved **REPAIR STATION**

with the following ratings:

ACCESSORY
LIMITED AIRFRAME (08/29/03)
LIMITED LANDING GEAR
LIMITED RADIO

This certificate, unless canceled, suspended, or revoked, shall continue in effect **INDEFINITELY**

Date issued:

JANUARY 17, 1985

By direction of the Administrator

Donald N. Bird, Manager
Spokane Flight Standards District Office

This Certificate is not Transferable, AND ANY MAJOR CHANGE IN THE BASIC FACILITIES, OR IN THE LOCATION THEREOF, SHALL BE IMMEDIATELY REPORTED TO THE APPROPRIATE REGIONAL OFFICE OF THE FEDERAL AVIATION ADMINISTRATION

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both

FAA Form 8000-4 (1-67) SUPERSEDES FAA FORM 390. AFS Electronic Forms System - v2.2

IOP

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To

Part 13 Formal Complaint

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Repair Station Operations Specifications

(Continuation)

Limitations:

The rating (s) set forth on Air Agency Certificate Number IX6R629N *is / are limited to the following:*

ACCESSORY CLASS 1, 2, & 3

LIMITED RATINGS:

AIRFRAME

Those make and model components shown on Sonico, Inc's. approved capabilities list dated 03/31/98, as revised.

Boeing 747 series aircraft storage in accordance with Boeing Document D6-52024 or air carrier approved manual. (08/29/03)

LANDING GEAR

Those components shown on Sonico, Inc's. approved capabilities list dated 03/31/98, as revised.

RADIO

Emergency Locator Transmitter, Boeing part number 69B56287-5
Interphone Audio Accesory Box, Boeing part number 65B47511-95

Delegated Authorities:

None

Date issued or revised:

August 29, 2003

For the Administrator:

Philip L. Vittetoe
Principal Maintenance Inspector

TABLE OF CONTENTS

PART A - General

A001. Issuance and Applicability

HQ Control: 11/16/04
HQ Revision: 050

a. These operations specifications are issued to Sonico, Inc., a Domestic Repair Station, pursuant to Title 14 Code of Federal Regulations (CFR) Section 145.53. The repair station certificate holder shall conduct operations in accordance with CFR Part 145 and these operations specifications.

The certificate holder's address:

Fixed Location:
6998 - 26th Avenue, Bldg 408
Moses Lake, WA 98837

b. The holder of these operations specifications is the holder of Certificate Number IX6R629N and shall hereafter be referred to as the certificate holder.

c. These operations specifications are issued as part of this Repair Station Certificate, and are in effect as of the Date Approval is effective. This certificate and operations specifications shall remain in effect until the domestic repair station certificate is surrendered, suspended, or revoked.

d. The repair station specified on these operations specifications performs maintenance and/or alteration of aircraft and/or aeronautical products to be installed on aircraft under the terms and conditions of a Bilateral Aviation Safety Agreement and associated Maintenance Implementation Procedures between the Federal Aviation Administration and a Foreign National Aviation Authority identified in Advisory Circular 145.8.

Delegated authorities:

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 11/19/04 Amendment Number: 3
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 11/19/04

A002. Definitions and Abbreviations

HQ Control: 11/16/04
HQ Revision: 050

Unless otherwise defined in these operations specifications, all words, phrases, definitions, and abbreviations have identical meanings to those used in the Title 14 Code of Federal Regulations (CFR) Regulations and Title 49 United States Code as cited in Public Law 103-272, as amended. Additionally, the definitions listed below are applicable to operations conducted in accordance with these operations specifications.

Bilateral Aviation Safety Agreement (BASA)	An executive agreement concluded between the United States and a foreign country for the purpose of promoting aviation safety; also known as an Agreement for the Promotion of Aviation Safety.
Certificate Holder	In these operations specifications the term "certificate holder" shall mean the holder of the repair station certificate described in these operations specifications in Part A paragraph A001 and any of its officers, employees, or agents used in the conduct of operations under this certificate.
CFR	Code of Federal Regulations
Class rating	As used with respect to the certification, ratings, privileges, and limitation of aircraft within a category having similar operating characteristics.
Domestic Repair Station	A certificated repair station located in the United States.
Exemption	An authorization that permits an alternate means of compliance with a specific CFR. The exemption must meet the procedural requirements of CFR 14, Part 11.
FAA Accountable Manager	A person designated by the certificated repair station who is responsible for and has authority over all repair station operations that are conducted under 14 CFR Part 145, including ensuring that the repair station's personnel follow the regulations and serving as the primary contact with the FAA.
FAA Form 8000-4-1	The FAA Form 8000-4-1 has been replaced with the form contained within this operations specifications application (OPSS) for the generation of the 14 CFR Part 145 Repair Station Operations Specifications.
Foreign Repair Station	A certificated repair station located outside of the United States.
Geographic Authorization	An approval provided to a foreign repair station to perform maintenance support under contract for a U.S. air carrier, or operator of U.S. - registered aircraft under 14 CFR Part 129, at a location other than the repair station facility. A geographic authorization is issued by the FAA to respond to the need of a U.S. air carrier or Part 129 foreign operator for maintenance at a station where the frequency and scope of that maintenance does not warrant permanently staffing and equipping the station for its accomplishment.
EASA	European Aviation Safety Authority

EASA Accountable Manager	The manager who has corporate authority for ensuring that all maintenance required by the customer can be financed and carried out to the standard required by the EASA full member Authority.
Limited Rating	Rating issued to repair stations for the performance of maintenance on particular makes and models of airframes, powerplants, propellers, radios, instruments, accessories, and/or parts.
Limited Ratings - Specialized Services	Rating issued for a special maintenance function when the function is performed in accordance with a specification or data acceptable to the Administrator.
Line Maintenance	Any unscheduled maintenance resulting from unforeseen events; or scheduled checks where certain servicing and/or inspections do not require specialized training, equipment, or facilities.
Maintenance	The inspection, overhaul, repair, preservation, and the replacement of parts, but excludes preventive maintenance.
Maintenance Implementation Procedures (MIP)	Procedures for implementing the provisions of a BASA that apply to maintenance.
MOE	Maintenance Organization Exposition - Pertains to Joint Aviation Authority member countries that use an MOE in place of a Repair Station Manual and a Quality Control Manual.
Preventive Maintenance	As defined in Appendix A subparagraph (c) of 14 CFR Part 43.
QCM	Quality Control Manual
RSM	Repair Station Manual
Substantial Maintenance	Any activity involving a C-check (routine airframe maintenance) or greater maintenance; any engine maintenance requiring case separation or teardown; and/or major alterations or major repairs performed on airframes, engines, or propellers.

1. ~~Issued~~ by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Phillip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 2/11/04 Amendment Number: 0
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 2/11/04

A003. Ratings and Limitations

HQ Control: 01/30/04
HQ Revision: 010

The Certificate Holder is authorized the following Ratings and/or Limitations:

Class Ratings

Accessory Class 1: Mechanical Accessories
Accessory Class 2: Electrical Accessories
Accessory Class 3: Electronic Accessories

Limited Ratings

Rating	Manufacturer	Make / Model	Limitations
Airframe	Boeing	747	The repair station is limited to aircraft storage maintenance in accordance with Boeing Document D6-52024 or other data acceptable to the Administrator. Removal and replacement of engines and aircraft components in accordance with the manufacturer or air carrier manual or other methods, techniques and practices acceptable to the Administrator.
Airframe	Airframe		The repair station is limited to those make and model components shown on Sonico's approved capabilities list dated 03/31/98 as revised. Only those components that have undergone the approval process as stated in section 10, pages 10-1 and 10-2 of the Sonico Inspection RSM/QCM will be allowed to be placed on the capabilities list.
Landing Gear Components			The repair station is limited to those make and model components shown on Sonico's approved capabilities list dated 03/31/98, as revised. Only those components that have undergone the approval process as stated in section 10, pages 10-1 and 10-2 of the Sonico RSM/QCM will be allowed to be placed on the capabilities list.
Radio - Emergency Locator Transmitter (ELT)	Boeing	P/N: 69B56287-5	

Limited Ratings

Rating	Manufacturer	Make / Model	Limitations
Radio - Interphone Audio Accessory Box	Boeing	P/N: 65B47511-95	

Limited Ratings - Specialized Services

Rating	Specifications	Limitations

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 7/28/04 Amendment Number: 3
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 7/28/04

A004. Summary of Special Authorizations and Limitations

HQ Control: 9/23/1998
HQ Revision: 010

a. The certificate holder, in accordance with the reference paragraphs, is authorized to:

	Reference Paragraphs
Perform work, including continuous operations, at additional locations other than at its primary fixed location.	A101
Conduct operations choosing to have an antidrug and alcohol misuse prevention program.	A449

b. The certificate holder is *not authorized* and *shall not*:

Use Exemptions.	A005
Use an approved electronic recordkeeping system, electronic/digital signature, and/or electronic media.	A025
Perform maintenance with NAA ratings where the scope of work is authorized by a BASA/MIP.	A060
Perform maintenance in accordance with foreign repair station geographic authorizations.	B050
Perform work, excluding continuous operations, at additional locations other than at its primary Fixed Location.	D100
Perform line maintenance for cert. holders conducting operations under Parts 121 and 135 and for foreign carriers/persons operating U.S. registered aircraft in common carriage under Part 129, apart from D100 which authorizes that work away from station.	D107

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 3/10/06 Amendment Number: 2
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 3/10/06

A007. Designated Persons

HQ Control: 01/30/04
HQ Revision: 020

The personnel listed in the following table are designated to officially apply for and receive operations specifications for the certificate holder indicated below.

Title	Name	Parts Authorized
President	Perdue, William B.,	A

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 2/11/04 Amendment Number: 1
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 2/11/04

A449. Antidrug and Alcohol Misuse Prevention Program

HQ Control: 01/22/04
HQ Revision: 000

a. The Part 145 repair station certificate holder has elected to implement an Antidrug and Alcohol Misuse Prevention Program, because the certificate holder performs safety-sensitive functions for a 14 CFR Part 121, and 135 certificate holder and/or for a 14 CFR Part 91 sightseeing operation as defined by 14 CFR §135.1(c).

b. The certificate holder certifies that it will comply with the requirements of 14 CFR Part 121 appendices I and J and 49 CFR Part 40 for its Antidrug and Alcohol Misuse Prevention Program.

c. Antidrug and Alcohol Misuse Prevention Program records are maintained and available for inspection by the FAA's Drug Abatement Compliance and Enforcement Inspectors at the location listed in Table 1 below:

Table 1

	Location & Telephone of Antidrug and Alcohol Misuse Prevention Program Records:
Telephone Number:	(509) 762-5586
Address:	6998- 26th Avenue, Bldg 408
Address:	
City:	Moses Lkae
State:	WA
Zip code:	98837

d. Limitations and Provisions.

(1) Antidrug and Alcohol Misuse Prevention Program inspections and enforcement activity will be conducted by the Drug Abatement Division. Questions regarding these programs should be directed to the Drug Abatement Division.
(2) The certificate holder is responsible for updating this operations specification when any of the following changes occur:
  (a) Location or phone number where the Antidrug and Alcohol Misuse Prevention Program Records are kept.
  (b) If the certificate holder's number of safety-sensitive employees goes to 50 and above, or falls below 50 safety-sensitive employees.
(3) The certificate holder with 50 or more employees performing a safety-sensitive function on January 1 of the calendar year must submit an annual report to the Drug Abatement Division of the FAA.
(4) The certificate holder with fewer than 50 employees performing a safety-sensitive function on January 1 of any calendar year must submit an annual report upon request of the Administrator, as specified in the regulations.

The certificate holder has fewer than 50 safety-sensitive employees.

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Vittetoe, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 11/19/04 Amendment Number: 2
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 11/19/04

A101. Additional Fixed Locations

HQ Control: 11/16/04
HQ Revision: 010

a. The certificate holder may perform work at the following additional fixed location(s) listed in Table 1, provided it has the facilities, material, equipment and technical personnel to perform the work authorized:

Table 1

Additional Location Address(es)				
Address	**City**	**State**	**Country**	**Postal Code**
6615 22nd Avenue N.E. Bldg 2701-N	Moses Lake	WA	Grant	98837

b. This authorizes the certificate holder to use multiple locations to perform its operations under a single certificate.

c. This authorization does not constitute a geographic authorization for work performed at another location.

d. The certificate holder may perform continuous operations at the facilities listed in Table 1 above.

e. Privileges of a line station, as set forth by any EASA line station rating, are authorized at these locations, as applicable.

f. All the authorizations and exemptions authorized for the certificate holder apply at these locations, as applicable.

1. Issued by the Federal Aviation Administration.
2. These Operations Specifications are approved by direction of the Administrator.

Whitelow, Philip L. Principal Maintenance Inspector NM13

3. Date Approval is effective: 3/10/06 Amendment Number: 0
4. I hereby accept and receive the Operations Specifications in this paragraph.

Perdue, William B., President Date: 3/10/06

IOP

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To

Part 13 Formal Complaint

Parts Manufacturer Approval

Parts Manufacturer Approval Information

Supplement Number:
83

Supplement Date:
09/13/2005

This approval issued to:
Parker Hannifin Corporation

PMA Holder Number:
PQ0658NE

PMA Holder's Address:
300 Marcus Boulevard
Smithtown NY 11787-9400
United States

Part Name:
Duel Temperature Sensor

Part Number:
055-019-001

Replacement For:
055-019-001

Make/Model:
Airbus (A340-541, -642)

FAA Approval Basis:
Identicality per 14 CFR 21.303, Licensing Agreement between The AIRBUS and Parker Hannifin Corp. with FAA Part Manufacturer Approval dated 09/02/2005 File No. SEL/940.0805/05 Dwg. No: 055-019-001 Rev.: (-) Date: 11/02/04 or later FAA Approved revision

Responsible Office:
Farmingdale NY FAA Office Tel: (631) 694-8420

Additional Information:

Comments

IOP

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To

Part 13 Formal Complaint

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A43NM
Revision 4
Airbus
A340-200 Series:
Models: A340-211, -212, -213
A340-300 Series:
Models: A340-311, -312, -313
A340-500 Series:
Models: A340-541
A340-600 Series:
Models: A340-642
March 19, 2007

TYPE CERTIFICATE DATA SHEET NO. A43NM

This data sheet which is part of Type Certificate No. A43NM prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the US Federal Aviation Regulations.

Type Certificate Holder: Airbus
1, Rond-Point Maurice Bellonte
31707 Blagnac
France

Type Certificate Holder Record - Name change from Airbus Industrie to Airbus January 2002

I. Type A340-200 Series Transport Category Airplanes:

Airbus A340-211 - approved May 27, 1993
Airbus A340-212 - approved July 7, 1994
Airbus A340-213 - approved October 2, 1994

Model:	Definition of Reference Airplane by Airbus Documents:
A340-211	FAA A340-211 Type Design, ref. AI/EA-N 415.0266/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0101/C0S.
A340-212	FAA A340-212 Type Design, ref. AI/EA-N 415.0269/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0102/C0S.
A340-213	FAA A340-213 Type Design, ref. AI/EA-N 415.0271/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0103/C0S.

Engines:

Airplane Model	Engine Model:	Engine Type Certificate:
A340-211	Four CFMI-CFM 56-5C2 or four CFM 56-5C2/F or four CFM 56-5C2/G. Engine intermix between 5C2 and 5C2/F and 5C2/G on the same aircraft is allowed.	FAA-Type Certificate E37NE
A340-212	Four CFMI-CFM 56-5C3/F or four CFM 56-5C3/G. Engine intermix between 5C3/F and 5C3/G on the same aircraft is allowed.	FAA-Type Certificate E37NE
A340-213	Four CFMI-CFM56-5C4	FAA-Type Certificate E37NE

Maximum Weight:

Variant	000 (Basic) kg / lb	001 (MOD 41302) kg / lb
Maximum Ramp Weight	254,400 / 560,952	257,900 / 568,670
Maximum Take-off Weight, MTOW	253,500 / 558,968	257,000 / 566,685
Maximum Landing Weight, MLW	181,000 / 399,105	181,000 / 399,105
Maximum Zero Fuel Weight, MZFW	169,000 / 372,645	169,000 / 372,645

Maximum Baggage:

Cargo Compartment	Maximum Load (kg / lb)
Forward	18,507 / 40,809
Aft	15,241 / 33,606
Rear	3,468 / 7,647

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see weight and Balance Manual: Airbus Document 00F080A0002/C2S for A340-211 and A340-212 and 00F080A0004/C0S for A340-213.

Aircraft Flight Manual:
Airplane operation must be in accordance with the EASA-Approved Airplane Flight Manual (AFM), US version, listed below, or later EASA approved revision applicable to the specific airplane model, modification status and serial number. All placards required by either the AFM, the applicable operating rules, or the certification basis must be installed in the airplane.

Model A340 Aircraft	Airbus Document Refr.	Revision No.	Date
-211	AI/EV-O 34000	1	May 27, 1993
-212	AI/EV-O 34000	1	February 3, 1997
-213	AI/EV-O 34000	1	February 3, 1997

For information on Fuel, Engine Limits, Airspeed Limits, Center of Gravity Limits, Datum, Leveling Means, Minimum Crew, Number Seats, Fuel Capacity, Maximum Operating Altitude, Control Surface Movements, Certification Basis, Production Basis, Equipment, Hydraulic Fluids, Auxiliary Power Unit (APU), Tires and Environmental requirements for noise :
See Section III, Data Pertinent to All Model A340-200 and A340-300 Series Airplanes.

For information on Import Requirements, Service Information and General Notes: See section VII, Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes.

II. Type A340-300 Series Transport Category Airplanes:

Airbus A340-311 - approved May 27, 1993:
Airbus A340-312 - approved July 7, 1994:
Airbus A340-313 - approved October 2, 1997:

The A340-300 series differs from the A340-200 series aircraft by the addition of 8 fuselage frames.

Model:	Definition of Reference Airplane by Airbus Documents:

A340-311	FAA A340-311 Type Design, ref. AI/EA-N 415.02695/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0101/C0S.
A340-312	FAA A340-312 Type Design, ref. AI/EA-N 415.0270/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0102/C0S.
A340-313	FAA A340-313 Type Design, ref. AI/EA-N 415.0272/96 Issue 4, dated June 11, 1997, for type definition and Type Certification Standard Equipment List, ref. 00F000A0103/C0S.

Engines

Airplane Model	Engine Model:	Engine Type Certificate:
A340-311	Four CFMI-CFM 56-5C2 or four CFM 56-5C2/F or four CFM 56-5C2/G. Engine intermix between 5C2 and 5C2/F and 5C2/G on the same aircraft is allowed.	FAA-Type Certificate E37NE
A340-312	Four CFMI-CFM 56-5C3/F or four CFM 56-5C3/G. Engine intermix between 5C3/F and 5C3/G on the same aircraft is allowed.	FAA-Type Certificate E37NE
A340-313	Four CFMI-CFM56-5C4	FAA-Type Certificate E37NE

Maximum Weight:

Variant	000 (Basic) kg / lb	001 (MOD 41302) kg / lb
Maximum Ramp Weight	254,400 / 560,952	257,900 / 568,670
Maximum Take-off Weight, MTOW	253,500 / 558,968	257,000 / 566,685
Maximum Landing Weight, MLW	186,000 / 410,130	186,000 / 410,130
Maximum Zero Fuel Weight, MZFW	174,000 / 383,670	174,000 / 383,670

Maximum Baggage:

Cargo Compartment	Maximum Load (kg / lb)
Forward	22,861 / 50,409
Aft	18,507 / 40,808
Rear	3,468 / 7,647

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see weight and Balance Manual:

Ref. Airbus Document 00F080A0002/C3S for A340-311 and A340-312
Ref. Airbus Document 00F080A0004/C0S for A340-313

Aircraft Flight Manual:

Airplane operation must be in accordance with the EASA-Approved Airplane Flight Manual (AFM), US version, listed below, or later EASA approved revision applicable to the specific airplane model, modification status and serial number. All placards required by either the AFM, the applicable operating rules, or the certification basis must be installed in the airplane.

Model A340 Aircraft	Airbus Document Refr.	Revision No.	Date
-311	AI/EV-O 34000	1	May 27, 1993
-312	AI/EV-O 34000	1	February 3, 1997
-313	AI/EV-O 34000	1	February 3, 1997

For information on Fuel, Engine Limits, Airspeed Limits, Center of Gravity Limits, Datum, Leveling Means, Minimum Crew, Number Seats, Fuel Capacity, Maximum Operating Altitude, Control Surface Movements, Certification Basis, Production Basis, Equipment, Hydraulic Fluids, Auxiliary Power Unit (APU), Tires and Environmental requirements for noise :

See Section III, Data Pertinent to All Model A340-200 and A340-300 Series Airplanes.

For information on Import Requirements, Service Information and General Notes: See section VII, Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes.

III. Data Pertinent to All Model A340-200 and A340-300 Series Airplanes:

Fuel:

	Specification		
Nomenclature	United Sates	France	United Kingdom
Kerosene	ASTM D 1655 (JET A) (JET A1)	AIR 3405C	DERD 2494/2453
Wide Cut	ASTM D 1655 (JET B)	AIR 3407B	DERD 2454/2486
	MIL-T 5624 (JP4) MIL-T 83133 (JP8)	AIR 3407B	DERD 2454/2486

Additives: According to CFMI "Specific Operating Instructions", installation manual. The above-mentioned fuels are also suitable for the APU.

Engine Limits:

Engine Limitations	CFMI CFM 56 -5C2 -5C2/4 -5C2/F -5C2/F4 -5C2/G -5C2/G4	CFMI CFM 56 -5C3/F -5C3/F4 -5C3/G -5C3/G4	CFMI CFM 56 -5C4
	See FAA Data Sheet E37NE		
Static Thrust at Sea Level • Take-off (5 mn)[1] (flat rated 30° C) • Maximum continuous (flat rated 25° C)	13878 daN (31,200 lbs) 12588 daN (28,300lbs)	14456 daN (32,500 lbs) 13077 daN (29,400 lbs)	15123 daN (34,000 lbs) 13371 daN (30,060 lbs)
Maximum Engine Speed • N1 rpm (%) • N2 rpm (%)	4800 (100.3%) 15,183 (105%)	4800 (100.3%) 15,183 (105%)	4985 (104.2%) 15,183 (105%)
Maximum Gas Temperature • Take-off (5mn)[1] • Maximum Continuous • Starting[2]	 950° C 915° C 725° C	 965° C 930° C 725° C	 975° C 940° C 725° C
Maximum Oil Temperature (Supply Pump Outlet) °C • Take-off, Stabilized • Transient (15 mn max.) Minimum Pressure	 140° C 155° C 89.6 KPa differential	 140° C 155° C 89.6 KPa differential	 140° C 155° C 89.6 KPa differential
Approved oils	See CFMI Service Bulletin CFMI 79-001 or GE specification D50TF1, Type I and II		

Table references:
(1) 10 minutes at take-off thrust allowed only in case of engine failure (at take-off or during go-around).

(2) 4 consecutive cycles of 2 minutes each

Airspeed Limits (Indicated Airspeed, IAS, unless otherwise stated):

- Maximum Operating Limit Speed/Mach, V_{MO}/M_{MO} — 330 KIAS / .86 M
- Design Diving Speed, V_D — 365 KIAS / .93 M
- Design Maneuvering Speed, V_A — Refer to AFM performance Section

- Maximum Flaps/Slats Extended Speed or Operating Speed, V_{FE}

Configuration	Slats/Flaps °	V_{FE} (kt)	
1	20/0	240	Intermediate Approach
	20/17	215	Take-off
2	24/22	196	Take-off and Approach
3	24/26	186	Take-off, Approach, and Landing
FULL	24/32	180	Landing

- Minimum Control Speed, V_{MC} — Refer to AFM performance Section (Performance Engineering Program/OCTOPUS)

Landing Gear Speeds:

- Maximum Speed with Landing Gear Operating (Extension and Retraction), V_{LO} 250 KIAS/.55 M
- Maximum Speed with Landing Gear Locked Down, V_{LE} 250 KIAS/.55M
- Tire Limit Speed (Ground Speed) 204 KTS

Center of Gravity Limits:

Refer to EASA-Approved AFM, US Version, Limitations Section for center of gravity envelope.
Note: 0% MAC is located 1275.51 in from the datum line.

Datum:

The aircraft reference zero datum point is located 251.37 in. forward of the fuselage nose, 275.8 in. under the fuselage centerline (datum line).

Leveling Means:

Inclinometer on cabin seat track rails (refer to AMM chapter 08.20.00).

Minimum Crew:

2 - Pilot and copilot

Number of Seats:

The maximum number of passengers approved for emergency evacuation is:
375 passengers with a 3 pair Type A and 1 pair Type 1 exits configuration, and
379 passengers with 4 pair Type A exits configuration.

Fuel Capacity:

	3 Tank Airplane			
	Usable Fuel		Unusable Fuel	
Tank	liters (kg)	gallons (lb)	liters (kg)	gallons (lb)
Wing	91,056 (72,845)	24,054 (164,052)	245 (196)	70 (41)
Center	41,468 (33,174)	10,955 (74,173)	83 (66)	22 (150)
Trim Tank	6,114 (4,891)	1,615 (11,014)	6 (5)	1.6 (11)
Total	138,638 (110,910)	36,627 (249,796)	334 (267)	88 (600)

Maximum Operating Altitude:
- Basic: 41,100 feet (12,527m) slats and flaps retracted (clean)
- Option: 41,450 feet (12,634m) slats and flaps retracted (clean) with modification 52536
- 20,000 feet (6,096 m) slats or slats/flaps extended

Control Surface Movements *(Total one-way travel in each direction of each movable control surface on the aircraft.)*

Control Surface	Maximum Travel
Aileron	+25°/-25°
#1 Spoiler	Speed Brake 25°
	Lift Dumper 35°
#2,3 Spoilers	Roll 35°
	Speed Brake 30°
	Lift Dumper 50°
#4,5 Spoilers	Roll 35°
	Speed Brake 30°
	Lift Dumper 50°
Aileron Droop	10°
Flaps	32°
Slats 1	21°
Slats 2 to 7	24°
Stabilizers	+2°/-14°
Elevator	+15°/-30°
Rudder	+31.6°/-31.6°

Certification Basis (A340-200 and A340-300):

a. Part 25 of the FAR effective February 1, 1965, including amendments 25-1 through 25-63 and amendments 25-65, 25-66 and 25-77.

b. Part 25 of the FAR amendment 25-64 with the following exceptions:
- Cockpit seats will not meet FAR 25.562 amendment 25-64 but will meet FAR 25.561
- Compliance with 25.785(a), (b), and (d) at amendment 25-64 for front row seats in front of a bulkhead will be based on ensuring a 35 inch free head strike envelope.

c. Special Federal Aviation regulation FAR Part 34 as amended by Amendments 27-1, through 27-7.

d. Part 36 of the FAR as amended by amendments 36-1 through 36-20.

e. FAA Special conditions issued for the A340 in accordance with Section 21.16 of the FAR and published in the Federal Register April 15, 1993, (Docket No. NM-75, Special Conditions No. 25-ANM-69), as follows:

(1) Electronic Flight Control System (EFCS) failures and Mode Annunciation
(2) Command Signal Integrity
(3) Protection From Lightning and Unwanted Effects of High Intensity Radiated Fields (HIRF)
(4) Interaction of Systems and Structures
(5) Design Dive Speed
(6) Design Maneuver Requirements
(7) Limit Pilot Forces
(8) Tail plane Tank Emergency Landing Loads
(9) Limit Engine Torque
(10) Ground Load Conditions for Center Landing Gear
(11) Flight Characteristics
(12) Flight Envelope Protection
(13) Side Stick Controllers
(14) Computerized Airplane Flight Manual (AFM) Performance Information

f. For precision approach and landing, the applicable technical requirements are complemented by AC 120-29 and AC 120-28C.

g. For the automatic flight control system, the applicable technical requirements are complemented by AC 20-57A for automatic landing and by AC 25.1329-1A for cruise.

h. Equivalent safety findings have been made in accordance with FAR 21.21(b)(1) for the following paragraphs of the FAR:

(1) 25.335(d) for design airspeeds
(2) 25.345 for high lift devices
(3) 25.349 for control surface loads
(4) 25.351(b) for unsymmetrical loads
(5) 25.371 for gyroscopic loads
(6) 25.373 for speed control devices
(7) 25.101(l); 25.105(c)(1); 25.109(a)(b)(c)(d)(e)(f); 25.113(a)(b)(c); 25.115(a); 25.735(f)(g)(h)(b) for rejected takeoff and landing performance

i. Optional requirements elected:
- 25.801 for ditching.
- 25.1419 for icing.

The Direction Generale de 'Aviation Civile (DGAC) of France originally type certificated the Airbus Model A340-200 and A340-300 series airplanes under its type certificate number DGAC-F TC 183. The FAA validated this product under U.S. Type Certificate Number A43NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of DGAC.

Production Basis:
A340 aircraft, all series and models, are produced in France under production approval FR.21G.0035 (formerly FG 035) issued by the DGAC (on behalf of EASA) to Airbus.

Equipment:
- The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.
- Equipment approved for installation is listed in the Type Certification Standard Equipment Lists; 00F000A0101/C0S for the A340-211 and A340-311, 00F000A0102/C0S for the A340-212 and A340-312, and 00F000A0103/C0S for the A340-213 and A340-313.

• Cabin furnishings, equipment and arrangement shall conform to the following specification:
  • 00F252K0010/C01 for cabin seats.
  • 00F252K0006/C01 for galley.
  • 00F252K0020/C01 for cabin attendant seats

Hydraulic Fluids:
Type IV - Specification NSA 30.7110

Auxiliary Power Unit (APU):

Garrett Airesearch	GTCP 331-350C (Specification 31-7677A)
Maximum Allowable Speed	(107%) 41,730 RPM
Maximum Gas Temperature: Turbine Outlet Temperature Starting	 650 °C 1250 °C

Approved oils: See Garrett report GT-7800 or Garrett Maintenance Manual.

Tires:
Refer to Airbus Service Bulletin (SB) A340-32-4007.

Environmental requirements for noise:
ICAO Annex 16 Volume 1 – Chapter 3, or Chapter 4 with Modification 55005.

IV. Type A340-600 Series Transport Category Airplanes:

Airbus Model A340-642 - approved July 22, 2002

Model:	Definition of Reference Airplane by Airbus Documents:
A340-642	FAA A340-642 Type Design, ref. EAL 415.0363/02 Issue 02, dated July 19, 2002, for type definition.

The A340-600 series differs from the A340-300 series aircraft by the addition of 20 fuselage frames with corresponding increases in weight, thrust, horizontal stabilizer area and wing area. Full electrical control of the rudder replaces the previous mechanical linkage between computer and actuators for both primary and backup systems

Engines

Airplane Model	Engine Model:	Engine Type Certificate:
A340-642	Four Rolls-Royce– Trent 556-61 turbojet engines	FAA-Type Certificate E00066NE

Maximum Weight:

Variant	000 (Basic) kg / lb	001 (Mod 50312) kg / lb
Maximum Ramp Weight	366,200 / 807,471	369,200 / 814,086
Maximum Take-off Weight, MTOW	365,000 / 804,825	368,000 / 811,440
Maximum Landing Weight, MLW	256,000 / 564,480	259,000 / 571,095
Maximum Zero Fuel Weight, MZFW	242,000 / 533,610	245,000 / 540,225

Number of Seats:
The maximum number of passengers approved for emergency evacuation is 379 passengers with a 4 pair of Type A and 1 pair of oversize Type III exits configuration.

Maximum Baggage:

Cargo Compartment	Maximum Load (kg / lb)
Forward	30,482 / 67,213
Aft	22,861 / 50,409
Rear	3,468 / 7,647

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see weight and Balance Manual:
Ref. Airbus Document 00F080A0601/C6S for A340-642

Fuel Capacity

Tank		Tank Capacity			
		Usable Fuel		Unusable Fuel	
		liters (kg)	gallons (lb)	Liters (kg)	gallons (lb)
Wing	Tank 1 / 4	49,002 (39,202)	12,945 (86,426)	68 (54)	18 (120)
	Tank 2 / 3	69,514 (55,611)	18,364 (122,601)	230 (184)	61 (406)
	Outer	12,290 (9,832)	3,247 (21,676)	34 (27)	9 (60)
	Total	130,806 (104,645)	34,556 (230,703)	332 (266)	88 (586)
Center		54,969 (43,975)	14,521 (96,842)	404 (323)	107 (713)
Trim Tank		8,361 (6,689)	2,209 (14,747)	25 (20)	7 (44)
Total		194,136 (155,309)	51,286 (342,386)	761 (609)	201 (1,343)

Airplane Flight Manual:
Airplane operation must be in accordance with the EASA-Approved Airplane Flight Manual (AFM), US version, listed below, or later EASA approved revision applicable to the specific airplane model, modification status and serial number. All placards required by either the AFM, the applicable operating rules, or the certification basis must be installed in the airplane.

Model A340 Aircraft	Airbus Document Refr.	Revision No.	Date
-642	STL 34000	1	July 22, 2002

For information on Fuel, Engine Limits, Airspeed Limits, Center of Gravity Limits, Datum, Leveling Means, Minimum Crew, Maximum Operating Altitude, Control Surface Movements, Certification Basis, Production Basis, Equipment, Hydraulic Fluids, Auxiliary Power Unit (APU), Tires and Environmental requirements for noise :
See Section III, Data Pertinent to All Model A340-200 and A340-300 Series Airplanes.

For information on Import Requirements, Service Information and General Notes: See section VII, Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes.

V. Type A340-500 Series Transport Category Airplanes:

Airbus Model A340-541 - approved January 27, 2003

Model:	Definition of Reference Airplane by Airbus Documents:
A340-541	FAA A340-541 Type Design, ref. EAL 415.1445/02 Issue 01, dated November 28, 2002, for type definition.

The A340-500 series is shorther than the A340-600 by 14 frames. It is intended for long range operations having additional fuel capacity over that of the –600 with the installation of a rear center tank (RCT).

The following table provides a list of required design improvement modifications for the 5-frame RCT (defined by Airbus modification no. 47020) on Model A340-500 series aircraft. The modifications extend the Kevlar liner in the RCT and improve the RCT fuel jettison rate. Airbus modifications 51344 and 51452 are required as a condition for type certification and must be installed prior to issuance of a standard U.S airworthiness certificate.

Airbus Modification No.	**Airbus Modification Title**
51344	Install Liners between RCT Forward and Rear Pressure Bulkheads (5 inter-frames)
51452	Relocate RCT Transfer/Refuel Restrictors to increase Jettison rate

Engines

Airplane Model	Engine Model:	Engine Type Certificate:
A340-541	Four Rolls-Royce– Trent 553-61 turbojet engines	FAA-Type Certificate E00066NE

Maximum Weight:

Variant	000 (Mod 51000) kg / lb	001 (Mod 51080) kg / lb
Maximum Ramp Weight	369,200 / 814,086	373,200 / 822,906
Maximum Take-off Weight, MTOW	368,000 / 811,440	372,000 / 820,260
Maximum Landing Weight, MLW	240,000 / 529,200	243,000 / 535,815
Maximum Zero Fuel Weight, MZFW	225,000 / 496,125	230,000 / 507,150

Number of Seats:

The maximum number of passengers approved for emergency evacuation is 375 passengers with a 3 pair of Type A and 1 pair of Type I exits configuration.

Maximum Baggage:

Cargo Compartment	Maximum Load (kg / lb)
Forward	24,494 / 54,009
Aft	16,330 / 36,008
Rear	3,458 / 7,625

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weight) see weight and Balance Manual:

Ref. Airbus Document 00F080A0501/C5S for A340-541

Fuel Capacity:

Tank		Tank Capacity			
		Usable Fuel		Unusable Fuel	
		liters (kg)	gallons (lb)	Liters (kg)	gallons (lb)
Wing	Tank 1 / 4	49,002 (39,202)	12,945 (86,421)	68 (54)	18 (120)
	Tank 2 / 3	69,514 (55,611)	18,364 (122,598)	230 (184)	61 (406)
	Outer	12,290 (9,832)	3,247 (21,677)	34 (27)	9 (60)
	Total	130,806 (104,645)	34,556 (230,696)	332 (265)	88 (586)
Center (with jet pumps : modification 50812)		55,133 (44,106)	14,566 (97,254)	240 (192)	63 (423)
Rear Center 5 frame (with liner: modification 51344)		19,741 (15,793)	5,216 (34,824)	100 (80)	26 (176)
Trim Tank		7,886 (6,309)	2,083 (13,911)	25 (20)	7 (44)
Total		213,566 (170,853)	56,421 (376,685)	697 (557)	184 (1,229)

Airplane Flight Manual:

Airplane operation must be in accordance with the EASA-Approved Airplane Flight Manual (AFM), US version, listed below, or later EASA approved revision applicable to the specific airplane model, modification status and serial number. All placards required by either the AFM, the applicable operating rules, or the certification basis must be installed in the airplane.

Model A340 Aircraft	Airbus Document Refr.	Revision No.	Date
-541	STL 34000	1	January 16, 2003

For information on Fuel, Engine Limits, Airspeed Limits, Center of Gravity Limits, Datum, Leveling Means, Minimum Crew, Maximum Operating Altitude, Control Surface Movements, Certification Basis, Production Basis, Equipment, Hydraulic Fluids, Auxiliary Power Unit (APU), Tires and Environmental requirements for noise :
See Section VI, Data Pertinent to All Model A340-500 and A340-600 Series Airplanes.

For information on Import Requirements, Service Information and General Notes: See section VII, Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes.

VI. Data Pertinent to All Model A340-500 and A340-600 Series Airplanes:

Fuel:

	Specification		
Nomenclature	United Sates	France	United Kingdom
Kerosene	ASTM D 1655 (JET A) (JET A1)	AIR 3405C	DERD 2494/2453
Wide Cut	ASTM D 1655 (JET B)	91056 (72845)	DERD 2454/2486
	MIL-T-5624 (JP 4) MIL-T-83133 (JP 8)	AIR 3407B	DERD 2454/2486

Additives: According to RR "Specific Operating Instructions", OI-Trent-A340. The above-mentioned fuels are also suitable for the APU.

Engine Limits:

Engine Limitations	Rolls-Royce RB 211 Trent 556-61	Rolls-Royce RB 211 Trent 553-61
	See FAA Data Sheet E00066NE	See FAA Data Sheet E00066NE
Static Thrust at Sea Level • Take-off (5 mn)[1] (flat rated 30° C) • maximum continuous (flat rated 25° C)	58,462 lbs (26,004 daN) 44,359 lbs (19,731 daN)	55,780 lbs (24,811 daN) 44,359 lbs (19,731 daN)
Maximum Engine Speed • N1 rpm (%) • N2 rpm (%)	3,900 (100%) 9,100 (100%)	3,900 (100%) 9,100 (100%)
Maximum Gas Temperature • Take-off (10mn) • Maximum Continuous • Starting - Ground - Inflight	900° C 850° C 700° C 850° C	900° C 850° C 700° C 850° C
Maximum Oil Temperature (Combined scavenge temperature) °C	196° C	196° C
Minimum Pressure	25 psi (172 kPa)	25 psi (172 kPa)
Approved oils	- Aeroshell Turbine Oil (Royco Turbine Oil) 555 - Mobil Jet Oil II, 254, 291	- Aeroshell Turbine Oil (Royco Turbine Oil) 555 - Mobil Jet Oil II, 254, 291

Table references:

(1) 10 minutes at take-off thrust allowed only in case of engine failure (at take-off or during go-around).

Airspeed Limits (Indicated Airspeed, IAS, unless otherwise stated):

• Maximum Operating Limit Speed/Mach, V_{MO}/M_{MO} 330 KIAS / .86 M

• Design Diving Speed, V_D 365 KIAS/ .93 M
• Design Maneuvering Speed, V_A Refer to AFM performance Section

• Maximum Flaps/Slats Extended Speed or Operating Speed, V_{FE}

Configuration	Slats/Flaps °	V_{FE} (kt)	
1	20/0	280	Intermediate Approach
	20/17	233	Take-off
2	23/22	216	Take-off and Approach
3	23/29	206	Take-off and Approach
FULL	23/34	200	Landing

• Minimum Control Speed, V_{MC} Refer to AFM performance Section (Performance Engineering Program/OCTOPUS)

Landing Gear Speeds:
• Maximum Speed with Landing Gear Operating (Extension and Retraction), V_{LO} 250 KIAS/.55 M
• Maximum Speed with Landing Gear Locked Down, V_{LE} 250 KIAS/.55 M
Tire Limit Speed (Ground Speed) 204 KIAS

Center of Gravity Limits:
Refer to EASA-Approved AFM, US Version, Limitations Section for center of gravity envelope.
Note: For A340-600, the 0% MAC is located 1,617 inch (41.034 m) from the datum line.
For A340-500, the 0% MAC is located 1,408 inch (35.734 m) from the datum line.

Datum:
The aircraft reference zero datum point is located 251.37 inch (6.38 m) forward of the fuselage nose, 275.8 inch (7 m) under the fuselage centerline (datum line).

Leveling Means:
Inclinometer on cabin seat track rails (refer to AMM chapter 08.20.00).

Minimum Crew:
2 – Pilot and copilot

Maximum Operating Altitude:
• Basic: 41,100 feet (12,527m) slats and flaps retracted (clean)
• Option: 41,450 feet (12,634m) slats and flaps retracted (clean) with modification 52536
• 20,000 feet (6,096 m) slats or slats/flaps extended

Control Surface Movements *(Total one-way travel in each direction of each movable control surface on the aircraft.)*

Control Surface	Maximum Travel
Inner Aileron	+20°/-30°
Outer Aileron	+25°/-25°
Ailerons	Maneuver Load Alleviation 11°
#1 Spoiler	Speed Brake 25°
	Lift Dumper 35°
#2,3 Spoilers	Roll 35°
	Speed Brake 35°
	Lift Dumper 50°
#4,5,6 Spoilers	Roll 40°
	Speed Brake 40°
	Lift Dumper 50°

	Manoeuvre Load Alleviation 9°
Aileron Droop	10°
Flaps	33.7°
Slats 1	21°
Slats 2 to 7	24°
Stabilizers	+2°/-14°
Elevator	+17°/-30°
Rudder	+35°/-35°

Certification Basis (A340-600 and A340-500)

The reference date for the determination of the certification basis was December 31, 1997.

a. **14 CFR Part 25**, dated February 1, 1965 as amended by Amendments 25-1 through Amendment 25-95 inclusive plus Amendments 25-97, 25-98 and 25-104 with the following exceptions:

Excepted FAR	Allowed Amendment Level	Comments
§ 25.562(b)(2)	Pre-amendment 25-64	Allowance for compliance to pre-amdt 25-64 only applies to crew seat floor warpage test requirements
§ 25.365(g)	Amendment 25-54	Allowance for compliance to amdt 25-54 applies only to design of the cockpit wall
§§ 25.831(g), 25.831(a), 25.841(a)	§§ 25.831(g) and 25.831(a) at amendment 25-41 § 25.841(a) at amendment 25-38.	

b. **14 CFR Part 36**, effective December 1, 1969, as amended by amendments 36-1 through 36-23. – none

c. **14 CFR Part 34**, effective September 10, 1990, including all amendments effective on the TC date. – not certified

d. **Special conditions** in accordance with 14 CFR 21.16.

(i) Basic A340 Special Conditions also applicable to the A340-500 and A340-600:

Note 1: Refer to TCDS section III certification basis for the A340-200 and A340-300

Note 2: Special conditions issued for the A340 in accordance with Section 21.16 of the FAR and published in the Federal Register Special Vol. 58, No. 71, dated April 15, 1993

(1) Electronic Flight Control System (EFCS) failures and Mode Annunciation
(2) Command Signal Integrity
(3)(a) Protection From Lightning and Unwanted Effects of High Intensity Radiated Fields (HIRF)
(5) Design Dive Speed
(6) Design Maneuver Requirements
(7) Limit Pilot Forces
(11)(a) Flight Characteristics Characteristic - Compliance Determination By handling Qualities rating System for EFCS Failure Cases
(11)(c) Flight Characteristic – Lateral Directional Stability
(12)(a) Flight Envelope Protection – General Limiting Requirements
(12)(c) Flight Envelope Protection – Normal Load Factor g Limiting
(12)(d) Flight Envelope Protection – High Speed Limiting (12) Flight Envelope Protection
(12)(e) Pitch and Roll Limiting
(13) Side Stick Controllers

(ii) Special Conditions applicable to the A340-500 and A340-600:

Docket No. NM211; Special Conditions No. 25-200-SC, "Airbus, Model A340-500 and A340-600 Airplanes; Ground Loads and Conditions for Center Landing Gear with four Wheels and Braking Capability," Federal Register Vol. 67 No. 98, May 21, 2002.
Docket No. NM213; Special Conditions No. 25-201-SC, "Airbus, Model A340-500 and A340-600 Airplanes; Interaction of Systems and Structure...", Federal Register Vol. 67 No. 126, July 1, 2002.
Docket No. NM213; Special Conditions No. 25-201-SC, "Airbus, Model A340-500 and A340-600 Airplanes; "...Electronic Flight Control System: Longitudinal Stability and Low Energy Awareness..." Federal Register Vol. 67 No. 126, July 1, 2002.
Docket No. NM213; Special Conditions No. 25-201-SC, "Airbus, Model A340-500 and A340-600 Airplanes; "...Use of High Incidence Protection and Alpha Floor Systems", Federal Register Vol. 67 No. 126, July 1, 2002.
Docket No. NM212; Special Conditions No. 25-02-04-SC, "Airbus, Model A340-500 and A340-600 Airplanes; Sudden Engine Stoppage," Federal Register Vol. 67 No. 81, April 26, 2002.

e. Equivalent safety findings have been made in accordance with FAR 21.21(b)(1) for the following FAR paragraphs:

§ 25.621(c) Casting factors. The ESF is only applicable to the Inner Flap – Flap Rib Fitting of the A340-500 and –600. For all other castings on the aircraft, as defined by the certification basis, the requirements of § 25.621(c) amendment 25-0 apply
§§ 25.473, 25.723: Landing Gear Drop Tests
§§ 25.341(a)(5),(b),(c), 25.345(c)(2), 25.371, 25.373(a), 25.1517: Continuous Turbulence Loads
§ 25.331(c)(2): Checked Maneuver Loads
§ 25.107(e)(1)(iv): Reduced Margins between V_{MU} and V_{LOF} for Geometry Limited Airplanes
§§ FAR 25 (All FAR 25 sections, except structural, dealing with stall speeds and related factors): Use of 1-g Stall Speeds Instead of Minimum Speed in the Stall as a Basis for Determining Compliance
§ 25.831(a): Airplane Operation with Air Conditioning Packs Off During Takeoff
§§ 25.933(a)(1), 25.1585(a)(9): Flight Critical Thrust Reverser
§ 25.963(d) first sentence: Fuel Tank Loads. The ESF is to the first sentence of § 25.963(d); "Fuel tanks within the fuselage contour must be able to resist rupture and to retain fuel, under the inertia forces prescribed for emergency landing conditions in § 25.561."
§ 25.1203(d): Rolls-Royce Trent 500 Turbine Overheat Detection
§§ 25.1305, 251501(b): Auxiliary Power Unit (APU) Instrumentation and Monitoring Requirements
§ 25.1305(c)(6), Warning Means for Engine Fuel Filter Contamination

f. Optional Design Regulations

(a) §25.801: Ditching Provisions

(b) §25.1411(d),(e),(f),(g): General Safety Equipment

(c) §25.1415: Ditching Equipment

(d) §25.1419: Ice Protection

g. Exemptions: Exemptions from the applicable regulations has been processed in accordance with the provisions of 14 CFR 11.25.

- Airbus petitioned for an exemption to §25.807(f)(4) with letter dated May 9, 2000 (the "60 foot rule" was relocated to this section as of amdt 25-94). In reply issued on December 11, 2000, the FAA denied the petition for exemption (ref. Exemption No. 7404).
- Exemption 7840, dated July 19, 2002, was issued to Airbus for non-compliance to §25.901(c) as it relates to uncontrollable high thrust failure conditions.

The Direction Generale de 'Aviation Civile (DGAC) of France originally type certificated the Airbus Model A340-500 and A340-600 series airplanes under its type certificate number DGAC-F TC 183. The FAA validated this product under U.S. Type Certificate Number A43NM. Effective September 28, 2003, the European Aviation Safety Agency (EASA) began oversight of this product on behalf of DGAC.

Production Basis:
A340 aircraft, all series and models, are produced in France under production approval FR.21G.0035 (formerly FG 035) issued by the DGAC (on behalf of EASA) to Airbus.

Equipment:
• The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

• Cabin furnishings, equipment and arrangement shall conform to the following specification:
  • 00F252K0010/C01for cabin seats.
  • 00F252K0006/C01for galley.
  • 00F252K0020/C01for cabin attendant seats

Hydraulic Fluids:
Type IV - Specification NSA 307110

Auxiliary Power Unit (APU)

Honeywell E. & S.	331-600[A] (Model Specification 31-15857-01A)
Maximum Allowable Speed	(100%) 39,044 rpm
Maximum Gas Temperature: Turbine Outlet Temperature Starting	 650 °C 1250 °C

Approved oils: See also Model Specification 31-15857-01A for approved oils.

Tires:
Refer to Airbus Service Bulletin

Environmental requirements for noise:
ICAO Annex 16 Volume 1 – Chapter 3, or Chapter 4 with Modification 55005.

VII. Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes:

Import Requirements
The FAA can issue a U.S. airworthiness certificate based on an French Export Certificate of Airworthiness (Export C of A) signed by a representative of the Direction Generale de 'Aviation Civile (DGAC) of France on behalf of the European Community. The Export C of A should contain the following statement (in the English language): "The aircraft covered by this certificate has been examined, tested, and found to conform to the Type Design approved under FAA Type Certificate No. A43NM as defined in TCDS A43NM and to be in condition for safe operation."

The regulatory basis U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c). The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country manufacture (e.g., third party country) is FAR Sections 21.183(d) or 21.183(b). These sections provide that U.S. airworthiness certificates are issued only if the Administrator finds "that the aircraft conforms to the type design and is in a condition for safe operation."

In order for the FAA to make the finding that an A340 aircraft is in a condition for safe operation, the FAA certificating inspector or other authorized person must contact the Manager, International Branch, ANM-116, FAA Transport Airplane Directorate; 1601 Lind Avenue Southwest; Renton, Washington 98055; telephone (425) 227-1263; fax (425) 227-1149, prior to issuance of the U.S. airworthiness certificate to obtain the FAA Required Modification List (RML) for the A340. Prior to issuance of a Standard Airworthiness Certificate on any Airbus A340 model aircraft, all modifications shown in the Model A340 RML must be accomplished in the interest of safety before the aircraft can be found to be in a condition for safe operation.

Authority for these required modifications is given per the airworthiness certification provisions of 49 U.S.C. 44704 (c), which states "the Administrator may include in an airworthiness certificate terms required in the interest of safety". "Terms required in the interest of safety" include actions to correct unsafe conditions issued by the foreign authority of the state of design that also meet FAA criteria for corrective action. This law also gives the FAA the authority to adopt FAR § 21.183(c) and (d), which form the regulatory basis for the issue of standard U.S. airworthiness certificates on imported products. 14 CFR §21.183(c) and (d) provide that airworthiness certificates are issued only if the Administrator finds "that the aircraft conforms to the type design and is in a condition for safe operation." The modifications identified in the Model A340 RML are required in the interest of safety and are necessary for this airplane to be in a condition for safe operation.

A Notice of Policy Statement announcing the FAA's policy with respect to foreign mandatory continued airworthiness information, when no aircraft of the affected design are currently operating in the U.S. was published in the Federal Register on May 11, 1998. Additional guidance is contained in FAA advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported into the United States.

Service Information:

Each of the documents listed below that contain a statement that it is approved by the European Aviation Safety Agency (EASA) - or for approvals made before September 28, 2003 - by the DGAC France, are accepted by the FAA and are considered FAA approved.

Additionally, approvals issued by Airbus under the authority of EASA approved Design Organization EASA.21J.031 - or for approvals made before September 28, 2003 - under the authority of by DGAC Design Organization Approval No. C01 or JAA Design Organization Approval No. F.JA.02 are considered FAA approved. These approvals pertain to the type design only.

- Airbus Service Bulletins, except as noted below,
- Structural repair manuals,
- Vendor manuals referenced in Airbus service bulletins
- US version of Aircraft flight manuals,
- Repair Instructions.

Note: Design changes that are contained in Airbus Service Bulletins and that are classified as Level 1 Major in accordance with the US/France Bilateral Aviation Safety Agreement Implementation Procedures for Airworthiness must be approved by the FAA.

General Notes: (All Models of A340 Series Airplanes)

Note 1: A current Weight and Balance report including list of the equipment included in the certificated empty weight, and loading instructions, when necessary, must be provided for each aircraft at the time of original airworthiness certification and at all times thereafter. Refer to Airbus Documents:

- 00F080A0002/C2S for A340-211 and -212;
- 00F080A0001/C3S for A340-311 and -312;

- 00F080A0004/C0S for A340-213 and -313;
- 00F080A0601/C6S for A340-642;
- 00G080A0006/C3S for A340-541.

Note 2: Instructions For Continued Airworthiness required under § 21.50 for service life limits on components, required inspections and inspection intervals, and certification maintenance requirements:

- Safe Life Airworthiness Limitation Items are provided in the A340 Airworthiness Limitations Section (ALS) sub parts 1-2 and 1-3 approved by EASA (Document 00F050AM091/C01);
- Damage-Tolerant Airworthiness Limitation Items are provided in the A340 Airworthiness Limitations Section (ALS) part 2 approved by EASA (Document 00F050A3401/C01);
- Certification Maintenance Requirements (CMR's) are provided in the A340 Airworthiness Limitations Section (ALS) Part 3 approved by EASA (Document 00F050A0003/C01);
- A340 Maintenance Review Board Report 00F050A0002/C01 aproved by FAA.
- Fuel Airworthiness Limitations are provided in the A340 Airworthiness Limitations Section (ALS) Part 5 approved by EASA (Document 95A.1933/05)

Note 3: Compliance with the FAA Required Modification List (RML) is necessary for an A340-200, A340-300, A340-500 or A340-600 aircraft to be found in a condition for safe operation. (See Import Requirements in TCDS section VII Data Pertinent to All Model A340-200, A340-300, A340-500 and A340-600 Series Airplanes).

Note 4: For Airbus model A340-541: Airbus modifications 51344 and 51452 that extend the Kevlar liner in the RCT and improve the RCT fuel jettison rate are required as a condition for type certification and must be installed prior to issuance of a standard U.S airworthiness certificate.

....END....

IOP

5

To

Part 13 Formal Complaint

From: Kelly Mccracken
To: Bill Perdue - Kent
Sent: Tuesday, May 16, 2006 9:20 AM
Subject: Fw: Request for Data

----- Original Message -----
From: <pwehr@parker.com>
To: "Kelly Mccracken" <mkelly@sonicoinc.com>
Sent: Tuesday, May 16, 2006 6:20 AM
Subject: Re: Request for Data

> Morning Kelly,
> Regret that Parker will only provide technical data such as CMMs to
> aircraft owner operators in revenue service.
> Sorry.
> Paul Wehr
> Sr. Contract Administrator
> Phn: 949-809-8301
> FAX: 949-809-8390
> email: pwehr@parker.com
>
>
>
>
>
> "Kelly Mccracken"
> <mkelly@sonicoinc
> .com> To
> "Paul Wehr" <pwehr@parker.com>
> 05/15/2006 03:32 cc
> PM
> Subject
> Request for Data
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> Paul:
>
> Please advise if Sonico can procure the overhaul/component maintanance
> manual for sensor PN 055-019-001. If so, please advise ATA chapter,
> revision number and date, and cost and turn time.
>
> Thank you for your assistance. I look forward to hearing from you.
>
> Sincerely,
>
> Kelly McCracken
> Sonico Purchasing
> (509) 762-5586
>
>
> Notice: If you know you are not one of the intended recipients of this
> communication, you are hereby on notice that any further review, copying,
> forwarding, or any other use of this document is strictly prohibited. If
> you have received it in error, please advise the sender by reply email and
> immediately delete the message and any attachments without copying or
> disclosing the contents.
>
>
> ----------
> "PLEASE NOTE: The preceding information may be confidential or
> privileged. It only should be used or disseminated for the purpose
> of conducting business with Parker. If you are not an intended
> recipient, please notify the sender by replying to this message and
> then delete the information from your system. Thank you for your
> cooperation."
>
>
>

IOP

6

To

Part 13 Formal Complaint

SONICO INC.

REPAIR STATION NO. IX6R629N

July 3, 2006
L0258BP

Mr. Thomas A. Piraino, Jr.
Vice President, General Counsel and Secretary
Parker Hannifin Corporate Headquarters
6035 Parkland Boulevard
Cleveland, OH 44124-4141

Re: request for Instructions for Continued Airworthiness

Dear Mr. Piraino:

Sonico, Inc. (Sonico) requests that Parker Hannifin Corporation (Parker Hannifin) provide us a complete copy of the Instructions for Continued Airworthiness (ICA), as required by the Federal Aviation regulations (FARs), for the Dual Temperature Sensor (Sensor) part number 055-019-001, installed on the Airbus A340-541 and A340-642 aircraft.

As the attached copies of the Federal Aviation Administration (FAA)-issued repair station certificate and operations specifications confirm, Sonico is an appropriately rated Part 145 repair station and is thereby entitled to receive copies of the ICA pursuant to 14 C.F.R.§ 21.50(b).

The FARs require that, as the design approval holder for the Sensor, Parker Hannifin prepare ICA for the appliances it produces for installation on aircraft, including the sensor used on the Airbus models referenced above. See, 14 C.F.R §§ 1.1, 21.50(b), 25.1529 & Appendix H to Part 25. Parker Hannifin produces its Sensor for sale for installation on the Airbus A340 models referenced above under Parts Manufacturer Approval (PMA) authority. See, 14 C.F.R. §21.303. Therefore, Parker Hannifin must produce an ICA for this part pursuant to § 21.50(b).

As a part installed on an aircraft type certificated under 14 C.F.R. Part 25, the Sensor ICA must include information relating to the interface of the part with the airplane, including basic control and operation information; servicing information, the recommended periods at which the sensor should be cleaned, inspected, adjusted, tested, and lubricated, and the degree of inspection, the applicable wear tolerance, and work recommended at these periods; troubleshooting information; and details for the application of special inspection techniques. 14 C.F.R. § H25.3 (a) and (b).

EMAIL:
purchasing@sonicoinc.com
sales@sonicoinc.com

ADDRESS:
6998 26TH AVENUE N.E.
MOSES LAKE, WASHINGTON 98837

PHONE / FAX NO.:
PHONE: (509) 762-5586
FAX: (509) 762-5014

Given the clear regulatory requirement that Parker Hannifin make the requested data available to Sonico and the importance of using this data to perform maintenance, it is imperative that we receive the complete ICA in a timely manner. Consequently, we will treat Parker Hannifin's failure to deliver the compliant ICA within thirty (30) days of receipt of this letter as a refusal, in response to which we will take appropriate action with the FAA.

We appreciate your cooperation in this manner.

Sincerely,

W.B. Perdue
President
Sonico Inc.

Enclosure

WBP/kk

EMAIL:
purchasing@sonicoinc.com
sales@sonicoinc.com

ADDRESS:
6998 26TH AVENUE N.E.
MOSES LAKE, WASHINGTON 98837

PHONE / FAX NO.:
PHONE: (509) 762-5586
FAX: (509) 762-5014

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SAC12

Form ID No. 0215

Sender's Copy

1 From *Please print and press hard.*

Date 07-03-06 Sender's FedEx Account Number 1188-4418-1

Sender's Name W. B. Perdue Phone (509) 762-5586

Company SONICO INC

Address 6998 26TH AVE NE Dept/Floor/Suite/Room

City MOSES LAKE State WA ZIP 98837-3290

2 Your Internal Billing Reference

First 24 characters will appear on invoice.

3 To

Recipient's Name Thomas A. Piraino Jr Phone (216) 896-3000

Company Parker Hannifin Corporate Headquarters

Recipient's Address 4035 Parkland Boulevard Dept/Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

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Simplify your shipping. Manage your account. Access all the tools you need.

4a Express Package Service *Packages up to 150 lbs.*

- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate. * To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation. ** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

* Declared value limit $500.

6 Special Handling

Include FedEx address in Section 3.

- [ ] **SATURDAY Delivery** NOT Available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] **HOLD Weekday at FedEx Location** NOT Available for FedEx First Overnight.
- [ ] **HOLD Saturday at FedEx Location** Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [ ] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
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FedEx Acct. No. / Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value†
		$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability. FedEx Use Only

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

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- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

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PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE. NO POUCH NEEDED.

IOP

7

To

Part 13 Formal Complaint

From: W. B. Perdue (Moses Lake) [mailto:pbill@sonicoinc.com]
Sent: Wednesday, September 06, 2006 5:16 PM
To: Thomas Piraino (Parker-Hannifin)
Subject: Re: My email fo August 31, 2006

The second copy of Sonico letter Number L0258BP was emailed to you on August 31, 2006. The letter was first delivered in July. Would it be possible to receive your response this week?

Best Regards,

W. B. Perdue
President, Sonico Inc.

IOP

8

To

Part 13 Formal Complaint

From: W. B. Perdue (Moses Lake) [mailto:pbill@sonicoinc.com]
Sent: Thursday, September 14, 2006 6:48 PM
To: Steve Vaughn (Parker-Hannifin Corp.)
Cc: Thomas Piraino (Parker-Hannifin)
Subject: Follow-Up Ltr. No. L0258BO

On September 7, 2006 Thomas A. Piraino Jr. advised us that he had forwarded to you our letter Number L0258BP dated July 3, 2006 regarding our request for Instructions for Continued Airworthiness from Parker Hannifin Corporation. Would you be so kind as to confirm that you have received it from him and provide an estimated date for your response to Sonico?

W. B. Perdue
President, Sonico Inc.

IOP

9

To

Part 13 Formal Complaint

Federal Register

Tuesday,
July 12, 2005

Part IV

Department of Transportation

Federal Aviation Administration

14 CFR Parts 21, 91, 121, 125, and 129
FAA Policy Statement: Safety—A Shared Responsibility—New Direction for Addressing Airworthiness Issues for Transport Airplanes; Fuel Tank Safety Compliance Extension and Aging Airplane Program Update; Final Rules

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 21

[Docket No. FAA–2004–17681]

FAA Policy Statement: Safety—A Shared Responsibility—New Direction for Addressing Airworthiness Issues for Transport Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Policy statement.

SUMMARY: This document sets forth the Federal Aviation Administration's (FAA) policy concerning the shared responsibility between design approval holders (DAHs) and operators in achieving certain types of safety objectives. It also provides guidance on the use of DAH requirements to support these safety objectives. This policy statement is intended to further clarify when and how the FAA will use DAH requirements in the future to address certain airworthiness issues for transport airplanes.

DATES: This policy is effective July 12, 2005.

FOR FURTHER INFORMATION CONTACT: Dionne Krebs, FAA, Transport Airplane Directorate, Aircraft Certification Service, ANM–110, 1601 Lind Avenue, SW., Renton, Washington 98055–4056; telephone: (425) 227–2250; fax: (425) 227–1320; e-mail: *Dionne.Krebs@faa.gov.*

SUPPLEMENTARY INFORMATION:

Background

As the FAA looks toward the future, we see a need for a new regulatory approach to addressing airworthiness issues in the existing fleet of transport airplanes. As the fleet ages and new designs become more technologically advanced, resolving emerging safety issues has become more complex. This complexity is compounded by the large number of airplanes in the existing fleet, with their many variations in configuration, and the varying kinds of operations authorized under the FAA's operational and flight rules. We are also finding that new technologies are now available, in some cases, to address safety issues that in the past could not be practically resolved.

In our effort to be more effective, we have reviewed our regulatory approach, as well as the performance of the affected aviation industry, in achieving national safety objectives. When the FAA determines that the level of safety for the existing fleet is unacceptable, we have two alternative courses of action:

- For those safety concerns related to a specific type of airplane model, the FAA declares an unsafe condition and requires actions through an airworthiness directive (AD) to achieve an acceptable level of safety.
- When establishing a new safety standard of general applicability (*e.g.*, all air carrier operations, large transport airplanes), the FAA issues general rulemaking that applies to future new designs, new production, the existing fleet (retrofit), or a combination of these, as appropriate.

We consider these two alternatives to be complementary tools. The appropriate alternative depends on the nature and extent of the safety issue. In either case, the FAA assesses the impact and solicits public comment on our proposed actions (except in emergency situations) before implementation.

When general rulemaking has been necessary to address fleet-wide safety issues, our practice has been to issue rules requiring action by the airplane operator. That practice relied on voluntary support from the design approval holders (DAH) to provide data and documents needed to support operator compliance. This approach has generally been successful. DAHs and operators have recognized they have a shared responsibility on certain safety issues, as reflected in the numerous rulemaking advisory committee recommendations transmitted to the FAA that affect continued airworthiness. However, this recognition did not necessarily ensure that information required by operators, such as service bulletins or maintenance or inspection procedures, would be provided in a timely manner.

On occasion, adopting airworthiness requirements only through operational rules has imposed an inappropriate burden on operators. In those cases, the expected support from the DAHs was not timely or consistent. Consequently some operators were unable to comply with the operational rule by the compliance deadline, or incurred substantial unexpected costs to comply. For example, in the program to reinforce flight deck doors, most operators had substantially less than the one year, that we originally anticipated as necessary, to modify their fleet. In the class D to class C cargo compartment conversion program, one type certificate holder did not develop the necessary modifications on time for operator compliance. Also, during this program a number of operators experienced frequent failures of modification parts, a lack of parts and a lack of technical support from several holders of supplemental type certificates.

The FAA concludes that, to achieve our safety objectives, DAHs and operators must have a shared responsibility on certain safety issues affecting the existing fleet. We also conclude, from reviews such as the Commercial Airplane Certification Process Study (March 2002), that we need to facilitate more effective communication of safety information between DAHs and operators. As both technology and airworthiness issues become more complex, certain fleet-wide safety issues require that the FAA take a new approach to facilitate their timely resolution. This new regulatory approach involves implementing complementary requirements for DAHs and operators, when appropriate. This approach was summarized in the Fuel Tank Safety Rule Compliance Extension and Aging Airplane Program Update published in the **Federal Register** on July 30, 2004 (69 FR 45936). We are publishing a document addressing the comments from that notice in this issue of the **Federal Register**.

Policy Statement

Based on our evaluation of more effective regulatory approaches for certain types of safety initiatives and the comments received from the Aging Airplane Program Update (July 30, 2004), the FAA has concluded that we need to adopt a regulatory approach recognizing the shared responsibility between DAHs and operators.[1] When we decide that general rulemaking is needed to address an airworthiness issue, and believe the safety objective can only be fully achieved if the DAHs provide operators with the necessary information in a timely manner, we will propose requirements for the affected DAHs to provide that information by a certain date.

In applying this policy, we will consider the following factors when determining if DAH requirements are needed to support the safety objective:

- *The complexity of developing data and documents to address the safety issue:*[2] Type design data analysis is necessary for the timely, efficient development of necessary data and documents.
- *The need for FAA-approved service instructions to be available in a timely manner:* We need to be confident that when the required data and documents are provided, they will be acceptable,

[1] This policy will not affect the FAA's process for determining when and under what circumstance it is appropriate to issue ADs.

[2] This consideration will also address the potential for a readily identifiable third party to develop the complex data and documents in time to achieve compliance.

are available on time, and can be readily implemented by the operators to comply on large fleets of airplanes.

• *Whether a number of different types of transport airplanes need similar safety improvements:* Because the safety issue is common to many airplanes, we need to ensure that technical requirements and compliance process are consistent to ensure required safety level can be achieved equitably.

• *The safety objective needs to be maintained for the operational life of the airplane:* We need to ensure that future design changes do not degrade the achieved level of safety in the fleet.

• *Additional factors relevant to the safety objective being addressed:* There may be other factors that are unique to a particular safety concern that we also need to consider.

When the FAA takes this regulatory approach to implementing actions necessary for safety through complementary operational and DAH requirements, we will:

• Publish a notice of proposed rulemaking for public comment.

• Provide the rationale for adopting requirements for both the operators and DAHs.

• Identify the affected airplane models and types of operations.

• Define the specific information that must be developed and made available.

• Provide technical information in the rule when it is necessary for compliance.

• Identify processes and procedures for implementation of safety related actions.

• Specify the appropriate compliance times to allow for all of the design, certification, and implementation activity to occur.

• Consider the economic impacts to all affected parties and ensure that the safety benefits are sufficient to warrant the costs.

• Publish the proposed guidance materials associated with the safety initiatives concurrently with the rulemaking proposals, or as soon after as possible. This will enable industry to evaluate all of the related materials as soon as they are available and provide comprehensive comments to the FAA. For any materials that are not available during the comment period on the NPRM, we will provide a separate comment period for the proposed guidance.

• Identify training requirements.

• Seek information from industry to gain a full understanding of these considerations when developing our proposal.

This policy is based on the need to ensure there are acceptable data and documents available in a timely manner to support operator compliance with the related operational rules. The FAA understands that in some cases where airplane modifications are required, third parties may be able to offer engineering support for compliance with the operational rules. However, the FAA believes that requirements for DAHs may still be necessary because DAHs have all of the original data (analysis, models, test results, service experience, etc.) necessary to evaluate their current designs and develop modifications or programs that will enable them to show compliance in a timely way. In addition, these rules may also include production cut-in requirements, so DAHs would have to develop designs to comply with those requirements anyway.

This policy builds on current regulations (14 CFR 21.50 and 21.99) that require DAHs to "make available" certain service information that is necessary to maintain the airworthiness of airplanes. The FAA understands that data and documents, such as airplane maintenance manuals, structural repair manuals, service bulletins, etc., and support are part of some purchase contracts between DAHs and operators. In each case, the DAH would be required to "make available" the service information developed under a DAH requirement. Since current business relationships are structured to comply with this existing long-standing requirement, we do not anticipate any disruption in these relationships as a result of the DAH requirements. The requirement to "make available" does not preclude the DAH from charging for these data and documents.

In adopting this policy, we do not intend to limit the flexibility that a DAH has to contract with a third party to provide a means of compliance with a DAH requirement. This type of business arrangement has been used by DAHs to provide customer support for modifications associated with both required and voluntary configuration changes. If a DAH does rely on third parties, the DAH would still remain fully responsible for ultimate compliance with the requirement.

Under this policy, we will continue to the hold the affected operators responsible for implementing actions necessary for safety. In the event the DAH no longer exists and, therefore, cannot provide the required support, the operator still has the responsibility for complying with the operational rule on time. The operator must work to contract with a party capable of providing the needed support, or potentially remove airplanes from service.

Under this policy, we would not make DAHs responsible for addressing safety problems related to airplane configurations for which they are not the design approval holder. They would not be expected to provide data and documents related to modifications developed by third parties or operator-developed repairs and alterations. However, they may be required to provide guidance on how to assess the effects of those kinds of changes on the DAH's design.

Regulations applying this policy will contain additional features that will help ensure that the required safety related actions are acceptable and available on time for implementation by the operator. A requirement for compliance planning by the DAHs will be an integral part of this new approach to ensure that the DAH and the FAA have a common understanding of how the DAH intends to comply. The FAA is committed to assuring the proposed requirements of this new approach are complied with so that the safety objectives are achieved on time. This approach will also promote the development of consistent and standardized safety related actions.

As previously discussed, this policy statement is the cumulative result of past experience and in-depth reviews of past efforts to ensure the safety of the fleet through the certification and continued airworthiness processes. The FAA concludes that, under the circumstances described above, this new regulatory approach is necessary for safety and provides an efficient and cost effective strategy for addressing complex airworthiness issues in the future.

Issued in Washington, DC on July 6, 2005.

Nicholas A. Sabatini,

Associate Administrator for Aviation Safety.

[FR Doc. 05–13670 Filed 7–11–05; 8:45 am]

BILLING CODE 4910–13–P

IOP

10

To

Part 13 Formal Complaint

U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

DEC 13 1999

Mr. Ronald M. Mrozek, Counsel
GE Engine Services
GEAE Legal Operation
One Neumann Way
Cincinnati, OH 45215-6301

Dear Mr. Mrozek:

This responds to your letter, dated May 28, 1999, to Thomas McSweeny, Associate Administrator for Regulation and Certification, in which you reported a possible non-compliance with 14 CFR § 21.50(b).[1] Because your letter raised regulatory interpretation and enforcement questions, I am responding on behalf of Mr. McSweeny.

In your letter, you raised a particular concern with the refusal of British Aerospace PLC ("BAe") to provide Instructions for Continued Airworthiness (ICAW) to GE Accessory Services - Grand Prairie, Inc. (GE - Grand Prairie), an FAA-certificated repair station. You stated that: (1) BAe has refused to provide ICAW for seven airframe components of the BAe-146 airplane; (2) BAe's refusal is based on their claim that they are not obligated to provide the subject ICAW because the airframe components are vendor components; (3) BAe claims that to provide copies of the subject ICAW would breach contracts between BAe and those vendors and would breach copyrights in the ICAW documents; (4) BAe has instructed GE - Grand Prairie to contact the subject vendors to obtain the ICAW; and (5) the subject vendors have refused to provide ICAW, stating, at least in two instances, that GE - Grand Prairie is not a BAe-146 owner or operator and is not on the lists of "BAe- or vendor-approved" repair stations.

If one were to assume only the following, one would conclude that BAe is in violation of § 21.50(b). First, that the subject airframe components are part of the BAe type design, and were not added by someone other than BAe pursuant to a supplemental type certificate. Second, that the FAA has rated GE - Grand Prairie to perform inspections and maintenance on the components. In that case, BAe would be required to provide ICAW for the components to GE - Grand Prairie, because FAA-certificated repair stations are "other persons required by [Chapter I of Title 14 of the CFR] to comply with any of the terms of the[] instructions."[2]

The fact that BAe has historically used vendors to supply components would not obviate its obligation to comply with § 21.50(b); that section clearly states that the obligation to provide ICAW rests with the holder of the design approval.

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[1] Section 21.50(b) states, in pertinent part:

> The holder of a design approval, including either the type certificate or supplemental type certificate for an aircraft, aircraft engine, or propeller for which application was made after January 28, 1981, shall furnish at least one set of complete Instructions for Continued Airworthiness prepared in accordance with §§ 23.1529, 25.1529, 27.1529, 29.1529, 31.82, 33.4, or 35.4 of this chapter...to the owner of each type of aircraft, aircraft engine, or propeller upon its delivery, or upon issuance of the first standard airworthiness certificate for the affected aircraft, whichever occurs later, and thereafter make those instructions available to any other person required by this chapter to comply with any of the terms of these instructions....

[2] See, e.g., 14 CFR § 43.16, which states, in pertinent part: "Each person performing an inspection or other maintenance specified in the Airworthiness Limitations section of a manufacturer's maintenance manual or Instructions for Continued Airworthiness shall perform the inspection or other maintenance in accordance with that section...."

BAe may not avoid its obligations under FAA regulations by entering into contracts that conflict with the regulations. Furthermore, the fact that BAe and some of its vendors have supplied the original owners or operators with ICAW would not obviate the design approval holder's obligation to also provide ICAW "thereafter, .to any other person required to comply with any of the terms of [the ICAW]."

However, as later discussed with your counsel, Mr. Kenneth Quinn, the application for the type certificate for the BAe-146 was filed prior to January 28, 1981, and the BAe-146 is not subject to the provisions of 14 CFR § 21.50(b). Notwithstanding that technicality, ICAW apparently are available for the subject components, as described in your letter.

Thus, in light of GE - Grand Prairie's offer to pay reasonable reimbursements to BAe for the costs of providing the ICAW documents, BAe's apparent refusal is puzzling, at best, and, at worst, is an artificial obstacle to ensuring that each BAe-146 airplane is maintained in an airworthy condition. BAe's refusal to provide ICAW, while technically not a violation, is inconsistent with the objectives of § 21.50(b) and is not in the best interests of aviation safety.

On August 31, 1999, Carey Terasaki of my staff and Mr. Renton Bean of the Aircraft Engineering Division met with Mr. Quinn and his associate, Ms. Maren Lee. Mr. Quinn and Ms. Lee stated that other original equipment manufacturers similarly have refused to provide ICAW for products that *are* subject to § 21.50. I will discuss this with Mr. McSweeny, and will renew with him our commitment to enforce this important provision in the regulations.

If you wish to discuss this further, please do not hesitate to contact us.

Sincerely,

James W. Whitlow
Deputy Chief Counsel

IOP

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To

Part 13 Formal Complaint

ORDER

8110.54

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

RESPONSIBILITIES, REQUIREMENTS, AND CONTENTS

July 1, 2005

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Distribution: A-W (IR/FS)-3; A-X (CD/FS)-3; A-FFS-1, 5 (ALL); A-FAC-0 (ALL); AMA-220 (25 copies); AMA-250 (10 copies); AFS-600 (3 copies); AEU-100

Initiated By: AIR-140

RECORD OF CHANGES **DIRECTIVE NO.** 8110.54

CHANGE TO BASIC	SUPPLEMENTS			OPTIONAL	CHANGE TO BASIC	SUPPLEMENTS			OPTIONAL

FAA Form 1320-5 (6-80) USE PREVIOUS EDITION

FOREWORD

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

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

Nicholas A. Sabatini
Associate Administrator for Aviation Safety, AVS-1

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CHAPTER 1. PURPOSE AND ORDER ADMINISTRATION

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

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

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

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

1-5. Definitions. See appendix 9.

1-6. Acronyms. See appendix 10.

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

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

CHAPTER 2. REGULATORY REQUIREMENTS FOR ICA

2-1. Requirement for ICA.

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

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

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

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

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

a. TCs

b. Amended TCs

c. Changes to type design approved under 14 CFR §§ 21.97 and 21.99

d. STCs

e. Amended STCs

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

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

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

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

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

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

(1) The documents contain all required information for the change to type design; and

(2) They furnish the documents to the FAA and all owners of the product per the program identified in section 5-1, paragraphs k and l of this document.

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

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

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

2-10. ICA for Military Surplus Aircraft.

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

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

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

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

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

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

CHAPTER 3. ICA FORMAT AND TYPES OF DATA

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

a. ICA for each aircraft must include:

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

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

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

3-2. How to Format the ICA.

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

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

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

3-3. ICA Content for Specific Design Approvals.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAPTER 4. REQUIRED MANUALS OR SECTIONS

4-1. Airworthiness Limitations Section (ALS).

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

(1) Approved mandatory replacement times for type certification;

(2) Approved mandatory inspection times for type certification; and

(3) Inspection procedures for those approved mandatory times.

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

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

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

e. For regulatory requirements, see:

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

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

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

4-3. Aircraft Maintenance.

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

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

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

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

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

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

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

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

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

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

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

b. For regulatory requirements, see:

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

∞ § 25.1529, Appendix H, H25.3(a);

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

∞ § 29.1529, Appendix A, A29.3(a).

4-4. Aircraft Maintenance Instructions.

a. These manuals and sections must include:

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

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

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

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

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

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

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

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

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

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

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

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

c. For regulatory requirements, see:

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

4-5. Balloon Maintenance.

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

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

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

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

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

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

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

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

(8) Hard landing inspection items and procedures.

(9) Balloon storage preparation and limits.

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

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

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

4-6. Engine Maintenance.

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

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

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

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

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

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

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

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

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

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

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

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

4-7. Engine Overhaul.

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

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

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

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

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

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

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

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

4-8. Propeller Maintenance.

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

(1) Detailed description of the propeller and its systems and installations.

(2) Description of how the propeller components, systems, and installations are controlled and operated, including any special procedures and limitations.

(3) Installation instructions, including proper procedures for uncrating, acceptance checking, and lifting. They should also include any necessary checks, warnings, cautions, and notes that are part of the propeller type design.

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

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

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

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

(8) Information describing the order and method of removing and installing the propeller and its parts and accessories. It includes warnings, cautions, and notes that are part of the propeller type design.

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

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

4-9. Propeller Overhaul.

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

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

(2) Details on all fits and clearances for the propeller and components relative to overhaul.

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

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

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

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

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

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

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

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

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

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

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

e. An inspection program to ensure the continued airworthiness of the article. Certification tests, analyses, and service experience, if available, are useful when developing the inspection program for parts, assemblies, sub-assemblies, or modules.

f. Troubleshooting information to address potential malfunctions and provide procedures to correct them or replace the affected part or component before continued operation.

g. A means to ensure configuration control during maintenance. This ensures that the proper parts, components, and combinations of parts and components are identified and conform to the approved design.

h. Location of access panels for inspection and servicing. Diagram of structural access plates, and how to gain access when access plates are not provided.

i. Instructions for storing parts and components and identifying special containers and any equipment or tools. The ICA should also include environmental restrictions for storage and storage limits.

j. List of tools and equipment necessary for maintenance and directions as to their method of use.

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

a. Cleaning and inspection instructions that cover the materials and apparatus to use and methods and precautions to take during overhaul. These instructions must include methods of overhaul inspection.

b. Details on all fits and clearances for the component relative to overhaul.

c. Details of repair methods for worn or otherwise substandard parts with information necessary to determine when to replace parts.

d. Instructions for testing the article after overhaul. This should include test acceptance criteria.

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

f. List of tools and equipment necessary for maintenance and directions as to their method of use.

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

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

CHAPTER 5. ACO AND AEG RESPONSIBILITIES

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

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

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

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

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

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

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

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

(1) Instructions for engine and propeller installations (14 CFR §§ 33.5 & 35.3), and

(2) Format and content of the ALS (and CMRs if applicable).

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

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

(1) A list of all parts of the ICA affected by the design change.

(2) A detailed schedule for completing and submitting the ICA to the ACO.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CHAPTER 6. DISTRIBUTING ICA AND CHANGES

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

6-2. Distributing ICA.

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

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

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

a. Paper copies of the changes, sent to all owners on record.

b. Electronic format copies, sent to all owners on record.

c. Web-based access to ICA changes. This option also requires a way of notifying owners on record that a change is available.

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

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

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

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

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

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

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

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

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

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

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

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST

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

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 1. SMALL AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST

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

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 2. TRANSPORT CATEGORY AIRCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST

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

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
( ) Scheduling information for ( ) rotorcraft equipment, including recommended periods for ( ) cleaning, ( ) inspecting, ( ) adjusting, ( ) testing, and ( ) lubricating; and ( ) the work recommended at these periods.	A27.3(b)(1)	
( ) Degree of inspection for each part of ( ) rotorcraft and its ( ) engines, ( ) the auxiliary power unit, ( ) rotors, ( ) accessories, ( ) instruments, and ( ) equipment.	A27.3(b)(1)	
( ) The applicable wear tolerances.	A27.3(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.	A27.3(b)(1)	
( ) Recommended overhaul periods and necessary cross-references to the ALS.	A27.3(b)(1)	
( ) Inspection program that includes ( ) the frequency and ( ) extent of the inspection necessary to provide for continued airworthiness.	A27.3(b)(1)	
( ) Troubleshooting information describing ( ) probable malfunctions, ( ) how to recognize those malfunctions, and ( ) remedies for them.	A27.3(b)(2)	
( ) Descriptions of the order and method of ( ) removing and ( ) replacing engines with any necessary precautions.	A27.3(b)(3)	
( ) Descriptions of the order and method of ( ) removing and ( ) replacing rotors with any necessary precautions.	A27.3(b)(3)	
( ) Descriptions of the order and method of ( ) removing and ( ) replacing parts with any necessary precautions.	A27.3(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.	A27.3(b)(4)	
( ) Diagrams of structural access plates and information needed to gain access for inspections when access plates are not provided.	A27.3(c)	

APPENDIX 3. SMALL ROTORCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 4. TRANSPORT CATEGORY ROTORCRAFT ICA CHECKLIST

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

APPENDIX 4. TRANSPORT CATEGORY ROTORCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 4. TRANSPORT CATEGORY ROTORCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 4. TRANSPORT CATEGORY ROTORCRAFT ICA CHECKLIST (CONTINUED)

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

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST

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

APPENDIX 5. MANNED FREE BALLOON ICA CHECKLIST (CONTINUED)

REQUIREMENT	Regulation Appendix	Location In ICA
( ) Maintenance information for each part of the rigging, including recommended periods for ( ) cleaning, ( ) adjusting, ( ) testing, and ( ) lubricating; ( ) applicable wear tolerances; and ( ) the work recommended.	A31.3(e)	
( ) Maintenance information for each part of the basket structure, including recommended periods for ( ) cleaning, ( ) adjusting, ( ) testing, and ( ) lubricating; ( ) applicable wear tolerances; and ( ) the work recommended.	A31.3(e)	
( ) Maintenance information for each part of the fuel systems, including recommended periods for ( ) cleaning, ( ) adjusting, ( ) testing, and ( ) lubricating; ( ) applicable wear tolerances; and ( ) the work recommended.	A31.3(e)	
( ) Maintenance information for each of the instruments, including recommended periods for ( ) cleaning, ( ) adjusting, ( ) testing, and ( ) lubricating; ( ) applicable wear tolerances; and ( ) the work recommended.	A31.3(e)	
( ) Maintenance information for each part of the heater assembly, including recommended periods for ( ) cleaning, ( ) adjusting, ( ) testing, and ( ) lubricating; ( ) applicable wear tolerances; and ( ) the work recommended.	A31.3(e)	
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.	A31.3(e)	
( ) Recommended overhaul periods and necessary cross-references to the ALS must also be included.	A31.3(e)	
( ) Inspection program that includes ( ) the frequency and ( ) 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 information describing ( ) probable malfunctions, ( ) how to recognize those malfunctions, and ( ) remedies for them.	A31.3(f)	
( ) Details for what, and how, to inspect after a hard landing.	A31.3(g)	
( ) Instructions for storage preparation, including any storage limits.	A31.3(h)	
( ) Instructions for repair on the balloon envelope and its basket or trapeze.	A31.3(i)	
( ) ICA must contain a section, titled Airworthiness Limitations, that is ( ) segregated and ( ) clearly distinguishable from the rest of the document. **NOTE:** The appropriate ACO/ECO will evaluate and approve the Airworthiness Limitations Section (ALS) in the applicant's ICA.	A31.4	
( ) ALS must describe each ( ) mandatory replacement time, ( ) structural inspection interval, and ( ) related structural inspection procedure, including ( ) envelope structural integrity, required for type certification.	A31.4	
( ) If ICA consist of multiple manuals, the ALS required by this paragraph must be in the principal manual.	A31.4	
( ) ALS must contain a legible statement in a prominent location that reads: "The Airworthiness Limitations Section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403."	A31.4	

APPENDIX 6. ENGINE ICA CHECKLIST

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

APPENDIX 6. ENGINE ICA CHECKLIST (CONTINUED)

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

APPENDIX 6. ENGINE ICA CHECKLIST (CONTINUED)

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

APPENDIX 7. PROPELLER ICA CHECKLIST

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

APPENDIX 7. PROPELLER ICA CHECKLIST (CONTINUED)

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

APPENDIX 8. RELATED PUBLICATIONS

1. Code of Federal Regulations (CFR). Order copies of 14 CFR sections from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. Telephone 202-512-1800; fax 202-512-2250. Alternatively, you can get copies on-line at http://www.gpoaccess.gov/cfr/.

2. FAA Orders, Advisory Circulars (AC), and Technical Standard Orders (TSO). Copies of the following orders, ACs, and TSO are available from the FAA website at http://www.airweb.faa.gov/rgl.

a. FAA Order 8110.4, *Type Certification*

b. FAA Order 8110.42, *Parts Manufacturer Approval Procedures*

c. FAA Order 8300.10, *Airworthiness Inspectors Handbook* (**NOTE:** You can get copies of this order online at http://www.faa.gov/avr/afs/faa/8300/.)

d. FAA Order 8430.21, *Flight Standards Division, Aircraft Certification Division, and Aircraft Evaluation Group Responsibilities*

e. AC 20-114, *Manufacturers' Service Documents*

f. AC 21-40, *Application Guide for Obtaining a Supplemental Type Certificate*

g. AC 25-19, *Certification Maintenance Requirements*

h. AC 25.1529-1, *Instructions for Continued Airworthiness of Structural Repairs on Transport Airplanes*

i. AC 33.4-1, *Instructions for Continued Airworthiness*

j. AC 33.4-2, *Instructions for Continued Airworthiness: In-Service Inspection of Safety Critical Turbine Engine Parts at Piece-Part Opportunity*

k. AC 35.4-1, *Propeller Instructions for Continued Airworthiness*

l. AC 43-13-1B, *Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair*

m. AC 121-22, *Maintenance Review Board Procedures*

n. TSO-C77b, *Gas Turbine Auxiliary Power Units*

3. Other FAA Document. *The FAA and Industry Guide to Product Certification* (CPI Guide), dated September 2004, is available from the FAA website at http://www.faa.gov/certification/aircraft/av-info/dst/CPI_guide_II.pdf.

APPENDIX 8. RELATED PUBLICATIONS (continued)

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

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

APPENDIX 9. DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

APPENDIX 9. DEFINITIONS (continued)

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

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

APPENDIX 10. ACRONYMS

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

U.S. Department
of Transportation

**Federal Aviation
Administration**

Directive Feedback Information

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

Subject: Order 8100.54

To: Directive Management Officer, AIR-530

(Please check all appropriate line items)

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

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

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

☐ Other comments:

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

Submitted by: _____ Date: _____

FTS Telephone Number: _____ Routing Symbol: _____

FAA Form 1320–19 (8-89) (Representation)

IOP

12

To

Part 13 Formal Complaint

The Complainant, through its agency counsel, has withdrawn its appeal, served February 8, 1991, from the oral initial decision of Administrative Law Judge Jeffrey Tureck in the above-captioned case issued at the conclusion of the hearing held on January 30, 1991.

THEREFORE, IT IS ORDERED THAT:

Complainant's appeal is hereby dismissed.

JAMES B. BUSEY, ADMINISTRATOR, Federal Aviation Administration

by: JAMES S. DILLMAN*, Assistant Chief Counsel

Issued this 28th day of March, 1991.

*Issued under authority delegated to the Chief Counsel and the Assistant Chief Counsel for Litigation by Memorandum dated January 29, 1990, pursuant to 49 U.S.C. § 322(b) and 14 C.F.R. §13.202. See 55 Fed. Reg. 15094 (April 20, 1990).

❖ ❖ ❖

F.A.A. Order No. 91-6
Served: April 10, 1991

In the Matter of

ORA L. LOWERY

Docket No. CP90SO0239

ORDER DISMISSING APPEAL

The Complainant, through its agency counsel, has withdrawn its appeal, served February 8, 1991, from the oral initial decision of Administrative Law Judge Jeffrey Tureck in the above-captioned case issued at the conclusion of the hearing held on February 1, 1991.

THEREFORE, IT IS ORDERED THAT:

Complainant's appeal is hereby dismissed.

JAMES B. BUSEY, ADMINISTRATOR, Federal Aviation Administration

by: JAMES S. DILLMAN*, Assistant Chief Counsel

Issued this 10th day of April, 1991.

*Issued under authority delegated to the Chief Counsel and the Assistant Chief Counsel for Litigation by Memorandum dated January 29, 1990, pursuant to 49 U.S.C. § 322(b) and 14 C.F.R. § 13.202. See 55 Fed. Reg. 15094 (April 20, 1990).

❖ ❖ ❖

F.A.A. Order No. 91-7
Served: April 10, 1991

In the Matter of

ROBERT T. PARDUE

Docket No. CP90SO0161

ORDER DISMISSING APPEAL

On February 5, 1991, Respondent filed a notice of appeal from the oral initial decision of Administrative Law Judge Jeffrey Tureck issued at the conclusion of the hearing held on January 28, 1991. Respondent has failed to perfect that appeal by filing an appeal brief in accordance with 14 C.F.R. §13.233(c), pursuant to which the appeal brief was due on March 19, 1991. Accordingly, Respondent's appeal is subject to dismissal under 14 C.F.R. § 13.233(d)(2).

THEREFORE, IT IS ORDRED THAT:

Respondent's appeal is hereby dismissed.

JAMES B. BUSEY, ADMINISTRATOR, Federal Aviation Administration

by: JAMES S. DILLMAN*, Assistant Chief Counsel

Issued this 10th day of April, 1991.

* Issued under authority delegated to the Chief Counsel and the Assistant Chief Counsel for Litigation by Memorandum dated January 29, 1990, pursuant to 49 U.S.C. §322(b) and 14 C.F.R. §13.202. See 55 Fed. Reg. 15094 (April 20, 1990).

❖ ❖ ❖

F.A.A. Order No. 91-8
Served: April 11, 1991
Pet. for review denied, 977 F2d 594

In the Matter of

WATTS AGRICULTURAL AVIATION, INC.
d/b/a GROWERS AIR SERVICE

Docket No. CP89WP0148

DECISION AND ORDER

Respondent Watts Agricultural Aviation, Inc., d/b/a Growers Air Service, ("Respondent") has appealed from the written initial decision served by Administrative Law Judge

Burton S. Kolko on March 2, 1990.[1] In his decision, the law judge held that Complainant proved that Respondent violated Section 91.29(a) of the Federal Aviation Regulations (FAR), 14 C.F.R. § 91.29(a),[2] by operating an aircraft in an unairworthy condition and Section 91.173(a) of the FAR, 14 C.F.R. §91.173(a),[3] by failing to keep appropriate maintenance and inspection records. Due to his finding that Complainant did not prove one of the alleged violations set forth in the Complaint, the law judge reduced the civil penalty sought by Complainant from $1,750 to $1,400.

Complainant alleged that on July 2, 1988, Respondent operated N5224S, a Model AT-301 Air Tractor, in the vicinity of Davis, California. The pertinent allegations in the Complaint are as follows:[4]

3. Incident to said operation, the following records were not kept:

a. A current status of applicable Airworthiness Directives (ADs) including for each, the method of compliance, and the AD number and revision date.

b. A copy of FAA Form 337 required for an alteration to the currently installed propeller.

4. Incident to said flight, the following discrepancies were present:

a. The wing carry-through structure's safe-life was exceeded by 754 hours.

b. The required fuel placards were not displayed on either wing.

5. You operated N5224S in an unairworthy condition.

Complainant alleged further that by reason of the above, Respondent had violated Section 91.29(a) of the FAR, in that Respondent operated an unairworthy aircraft, and Section 91.173(a) of the FAR, in that it failed to keep appropriate maintenance and inspection records containing the information specified in that section.[5] In his written initial decision, the law judge affirmed all but one of the alleged violations.[6]

Gordon Read, an FAA Aviation Safety Inspector, testified that during investigation of the crash of N5224S he examined the wreckage, and the aircraft and maintenance records relating to N5244S. Robert Barabino, a mechanic at McClellan Air Force Base, and Joseph Moody, a mechanic and the president of Chico Flight Center, testified on behalf of Respondent. Mr. Barabino and Mr. Moody both testified based upon their review of the aircraft records. Neither Mr. Barabino nor Mr. Moody examined the wreckage.

The Evidence and The Law Judge's Decision

The evidence with regard to each of the pertinent allegations, and the law judge's decision as to each, were as follows:

Paragraph 3(a). The aircraft records contained the following "AD notes":

82-06-12 Complied with 11 May 82 tach time 2394.73 PEW

83-18-01 Complied with 11/24/83 tach 3340 Peter Dabaghian

82-06-12 Recurring 2000 hrs. changed gear tach 3970 B.M.

(Complainant's Exhibit 5, p. 42).

Mr. Read testified that contrary to Section 91.173(a)(2)(v), Respondent failed to maintain records reflecting the current status of compliance with AD Nos. 82-06-12 and 83-18-01. These notes were incomplete, he explained, because: 1) no AD revision dates were mentioned; 2) the [second] note pertaining to AD No. 82-06-12 did not include the date or time when compliance with that AD would next be due; and 3) the note about AD No. 83-18-01 did not include the method of compliance.

Mr. Moody testified that the records indicate that Respondent had complied with all of the applicable airworthiness directives. With regard to the AD note pertaining to AD No. 83-18-01, he first testified that the time for compliance was not included. However, he later testified that the AD note mentions the time of compliance, because it is stated in the note: "recurring, 2000 hours" (TR-103-4), and therefore, that the AD note is complete.

1/ A copy of the law judge's written initial decision is attached.

2/ Section 91.29(a) of the FAR, 14 C.F.R. § 91.29(a), provides as follows:

> No person may operate a civil aircraft unless it is in an airworthy condition.

3/ Section 91.173(a) of the FAR, 14 C.F.R. § 91.173(a), provides in pertinent part:

> (a) Except for work performed in accordance with §91.171, each registered owner or operator shall keep the following records for the periods specified in paragraph (b) of this section:
>
> (2) Records containing the following information:
>
> (v) The current status of applicable airworthiness directives (AD) including, for each, the method of compliance, the AD number, and revision date. If the AD involves recurring action, the time and date when the next action is required.
>
> (vi) Copies of the forms prescribed by § 43.9(a) of this chapter for each major alteration to the airframe and currently installed engines, rotors, propellers, and appliances.

4/ There was one other allegation regarding Respondent's failure to add certain equipment installed after the aircraft's original certification on the weight and balance report and the equipment list. The law judge ruled in Respondent's favor on this point, and Complainant did not appeal that ruling.

5/ Complainant also alleged that Respondent had violated Section 43.9(a) of the FAR, 14 C.F.R. § 43.9(a), but withdrew that allegation at the hearing.

6/ See footnote 4, *supra*.

The law judge held that Complainant proved that the AD notes were incomplete because the revision dates for each AD were not recorded and the method of compliance with one AD was not included. (The law judge apparently rejected Complainant's argument that the date of next compliance was not included.) (Initial Decision at 3).

Paragraph 3(b). Mr. Read testified that Respondent should have maintained a copy of FAA Form 337 reflecting a "major modification" (installation of a roller bearing) which was made to the propeller. FAA Form 337 is a historical record of maintenance. He referred to an Aircraft Propulsion Systems, Inc., engineering specification (pertaining to a supplemental type certificate issued by the FAA) in which it is written that because the installation of the roller bearing constitutes "a major modification," FAA Form 337 must be issued by the licensed powerplant mechanic or the FAA-approved propeller repair station which performed the modification. (Complainant's Exhibit 7, p. 5).

On cross-examination, Mr. Read testified that Respondent had informed him that it once had a yellow tag (a logbook recording device) for this modification and that a yellow tag indicates that the part can be returned to service. Mr. Barabino testified that if a repair station supplies a yellow tag, the propeller can be installed on an airplane without FAA Form 337.

The law judge held that Complainant proved that Respondent had failed to maintain a record of the alteration to the propeller, as required, and he rejected Respondent's effort to shift responsibility to the repair station, stating that 14 C.F.R. § 91.173 does not permit the owner or operator to transfer its recordkeeping duties to others. He wrote further that ". . . Respondent cannot fairly suggest that it had no knowledge of the repair while at the same time asserting that the yellow tag permitted the aircraft to return to service." (Initial Decision at 5). He concluded that if indeed Respondent did not have knowledge of the repair -- a proposition which he considered incredible -- then Respondent at least had constructive notice of the repair due to the receipt of the yellow tag, and therefore, it should have acquired a completed FAA Form 337 from the repair station. (Id.)

Paragraph 4(a). With regard to the allegation that the safe-life of the wing carry-through structure was exceeded by 754 hours, Mr. Read testified that it is stated in the type certificate data sheet that the carry-through structure of the wing is life-limited at 5000 hours. (Complainant's Exhibit 3, p. 5). It is provided further that the life-limit can be extended to 7000 hours if the wing is modified in compliance with a service letter issued by Snow Engineering Company, the manufacturer of the Air Tractor. Respondent had not complied with the service letter, and Mr. Read testified that the aircraft's total time, as measured by its tachometers,[7/] was 5754 hours at the time of the accident.[8/]

7/ A tachometer measures the time that an aircraft engine is running.

(FOOTNOTE 8 IS IN NEXT COLUMN)

Mr. Read sent a letter of investigation to Respondent and received a response written by Respondent's president, Ralph J. Holsclaw. In this letter, dated July 27, 1988, Mr. Holsclaw responded that because the tachometer "at 2000 RPM has at least a 10-11% error," the airframe total time would be approximately 5000 hours. (Complainant's Exhibit 8). Mr. Read testified that he disregarded this response because the actual operating RPM or average operating RPM of that engine had not been established. Mr. Read testified, in essence, that it would be arbitrary and unsafe to reduce all tachometer times by a certain percentage because, for example, when an Air Tractor descends, its engine operates at only 1200 RPM. Thus, he explained, tachometer time cannot be converted to clock hours unless there is a record of the actual engine speeds during the operation of the aircraft.

Respondent introduced a letter dated December 9, 1988, from Leland Snow at Air Tractor, Inc., to Mr. Read, in which Mr. Snow wrote:

> Our tachometers recorded an hour at 1796 RPM. The Air Tractor operates at 2100 RPM loaded and 2000 RPM empty, for an average of 2050 RPM. This calculates 4,994 hours for an aircraft showing 5700 hours on the tach. . . . The engine normally runs while the aircraft is being loaded, so take another hundred or so hours off the time.

(Respondent's Exhibit 1). Respondent also introduced a document which purported to be Service Letter No. 75, dated December 12, 1988, in which it was stated that at engine speeds below 1796 RPM, the tachometer accumulates hours at a slower rate than clock hours, while at engine speeds above 1796 hours, the tachometer accumulates hours faster than clock hours. (Respondent's Exhibit 2).[9/] Relying upon these documents, Robert Barabino and Joseph Moody testified that the aircraft did not have 5000 hours at the time of the accident.

8/ Mr. Read explained how he determined that the wing carry-through structure's safe-life was exceeded by 754 hours. He testified that his examination of the records revealed that the tachometer in this aircraft was replaced at 3970 hours, and that an additional 1784 hours, as measured by the new tachometer, were applied subsequently to the aircraft. The aircraft, he concluded, had a total of 5754 hours because total time is the sum of the times recorded on the former and present tachometers.

9/ Complainant filed a Motion to Strike, requesting that the Administrator strike Respondent's Exhibit 2 because it was not provided to Complainant's counsel until the day of the hearing, despite to the law judge's Order to Compel Discovery. (Complainant had objected to the admission of that exhibit at the hearing, but the law judge overruled the objection.)

Complainant's Motion to Strike is denied. Although I am dismayed that the law judge's Order to Compel Discovery was disregarded and, more fundamentally, that at least theoretically Complainant could have been prejudiced by Respondent's failure to exchange documents in discovery in a timely fashion, I deny Complainant's motion because, like the law judge, I find this exhibit to be both irrelevant and unpersuasive. (Initial Decision at 8). Moreover, whereas the law judge could have enforced his Order to Compel Discovery by refusing to admit this document, he was not required to do so by Section 13.220(n) of the Rules of Practice, 14 C.F.R. §13.220(n) (1989).

The law judge held that Complainant proved that the safe-life of the carry-through structure of the wing was exceeded. He wrote: "Although the tachometer reading may not be completely accurate, the FAA is entitled to rely on an operator's recording device as long as it is used consistently throughout the service life and is not in error to the point of affecting safety (See Tr. 75)." (Initial Decision at 7).

He concluded that the tachometer was consistently used and was not grossly in error. (Id.)

Paragraph 4(b). The type certificate data sheet provides that certain information must be displayed on placards in full view of the pilot:

> (7) Next to fuel filler caps: Fuel 38" U.S. gal. Min. Octane 87. Fuel tanks are interconnected. Allow sufficient time for fuel level to equalize before top-off of tank. No aromatic fuel.

(Complainant's Exhibit 3, p. 4, n. 2). Mr. Read testified that in addition to this requirement, a placard reading "AUTO FUEL -- 87 OCTANE MINIMUM" was required at or near the fuel filler cover. (**See** Complainant's Exhibit 5, p. 50). He stated, "I had noted at the scene that there was no placard readable **on** the fuel access cap." (TR-23-24)(emphasis added).

The law judge rejected Respondent's argument that in light of Mr. Read's testimony that he observed no readable placards **on** the fuel filler caps, Complainant had failed to satisfy its burden of proof that there was no readable placards **next to** the fuel filler caps, as required by the type certificate data sheet. He wrote that "[o]ne failing to observe the placard 'on' the fuel access cap would undoubtedly notice it 'next to' the cap had it been placed there as required," and, consequently, he held that there was no placard next to the cap. (Initial Decision at 9).

Respondent's Appeal

In this appeal, Respondent argues that Complainant failed to satisfy its burden of proof. Respondent argues specifically that the evidence indicates that:

> 1. Respondent maintained adequate records of compliance with applicable ADs;
>
> 2. Respondent's failure to keep a copy of FAA Form 337 reflecting an alteration to the propeller does not constitute a violation of Section 91.173(a)(2)(v) because:
>
> > a. the FAA-approved repair station, which made the alteration to the propeller, issued a "yellow tag";
> >
> > b. the FAA-approved repair station is required to issue FAA Form 337; and
> >
> > c. Respondent was not aware of the alteration;
>
> 3. despite the tachometer reading of 5754 hours at the time of the accident, the 5000-hour safe-life of the propeller was not actually exceeded because the tachometer recorded hours faster than clock hours; and
>
> 4. the only evidence presented by Complainant was that there were no readable fuel placards **on** the fuel access caps, while the requirement was that there be fuel access caps **near** the fuel access caps.

Respondent also maintains that "Complainant is barred from relitigating issues in connection with N5224S relating to the wing carry-through structure, fuel placards, currency of ADs and weight and balance recalculation under the Doctrine of Collateral Estoppel." (Appeal Brief at 20).

Based upon review of the entire record, including the briefs submitted by both parties, Respondent's appeal is denied. The reasons for the denial are set forth below.

Disposition of Respondent's Appeal

Paragraph 3(a). The law judge's finding that the AD notes were incomplete is affirmed. It is clear from the record itself that the AD notes were incomplete because: 1) they did not include the revision numbers of the ADs with which Respondent had complied, and 2) the method of compliance was only included in one of the three notes. Section 91.173(a)(2)(v) specifically requires that the method of compliance and the AD revision number be recorded.

The fact that Respondent may have actually complied with the ADs does not relieve Respondent of its responsibility under this regulation to maintain complete records. **See** *Administrator v. Air Maryland, Inc.*, NTSB Order EA-2951 at 9 (June 13, 1989)(in which it was held that the fact that Air Maryland may have provided all or some of the required hazardous materials training to its pilots did not obviate its recordkeeping requirement under 14 C.F.R. §135.63(a)(4)). As the NTSB has declared, "[a] policy of leniency toward recordkeeping inevitably encourages carelessness in the timely performance of required maintenance, to the derogation of safety in air transportation." *Administrator v. Newman*, 1 NTSB 2008, 2010 (1972), *aff'd, Newman v. Shaffer*, 494 F.2d 1219 (2d Cir. 1974).

Paragraph 3(b). The law judge's finding that FAA Form 337 should have been maintained by Respondent in its records is affirmed. Section 91.173(a)(2)(vi) requires each registered owner or operator to maintain copies of the forms prescribed by 14 C.F.R. §43.9(a) for each major alteration to the propeller. Section 43.9(a) provides that major alterations shall be entered on a form prescribed in Appendix B by the person performing the work, and Appendix B specifies that FAA Form 337 is to be completed. Respondent did not have a copy of FAA Form 337 reflecting the modification to the propeller, and as a result, it violated Section 91.173(a)(2)(vi).

Respondent's arguments with regard to this allegation may be disposed of easily. A "yellow tag" is not a permanent record. *Newman v. Shaffer*, 494 F.2d 1219, 1220

(2d Cir. 1974). Indeed, Respondent said that it had a yellow tag for this work, but was unable to produce it. Moreover, Appendix B to Part 43 does not permit the use of a yellow tag as a substitute for FAA Form 337. Respondent did not argue that it had any other record of the modification.

Like the law judge, I find it incredible that Respondent may have been unaware of the repair to the propeller. Moreover, the fact that Respondent's counsel has repeatedly asserted that Respondent was unaware of the repair does not alone constitute proof of that allegation. No one employed by Respondent testified that he was unaware of the repair, and no documentary evidence was introduced to support this argument presented by Respondent's counsel. For that matter, Mr. Read's testimony that Respondent informed him that there had been a yellow tag for this repair suggests that Respondent did indeed have knowledge of the repair.

Finally, Respondent's attempt to shift the responsibility for this violation to the repair station which performed the modification must be rejected for several reasons. There is no evidence that the repair station did not issue a completed FAA Form 337 other than the fact that Respondent did not have a FAA Form 337 in its records during the investigation. More importantly, under Section 91.173(a)(2)(vi) of the FAR, the responsibility to maintain FAA Form 337 reflecting a major modification to the aircraft belongs to the owner or operator, not to the repair station. **See** *Administrator v. Fleischman*, NTSB Order EA-2962 at 10-11 (July 28, 1989), *aff'd, Fleischman v. DOT*, No. 89-70367 (9th Cir., March 1, 1991), 927 F.2d 609, (in which the NTSB rejected a similar argument.)

Paragraph 4(a). The law judge's finding that the safe-life of the wing carry-through structure was exceeded by 754 hours is affirmed, and necessarily then, Respondent's violation of Section 91.29(a) (operating an unairworthy aircraft) is likewise affirmed. Respondent failed to prove that had a clock been used to record time, rather than a tachometer, the records would indicate that the Air Tractor had been in operation less than 5000 hours. Respondent based its argument on Leland Snow's opinion that since the Air Tractor operates at 2100 RPM loaded and 2000 RPM empty, the average speed of operation is 2050 RPM. (Respondent's Exhibit 1). However, it would be inappropriate to use this average speed because, as Mr. Read pointed out, for example, the engine speed is 1200 RPM when the aircraft descends. Mr. Read's testimony proves that it would be inappropriate to use 2050 RPM (or any other randomly selected RPM) as the average engine speed. Since the actual engine speeds during the aircraft's operation have not been established, and since Respondent had no separate system of recording the aircraft hours, there is no accurate way to determine what would be the correct number of clock hours. Hence, Respondent failed to rebut Complainant's *prima facie* case that the safe-life of the wing carry-through structure was exceeded.

Respondent did not introduce any evidence that it had consciously and deliberately elected not to modify the wing carry-through structure when the tachometers indicated that the Air Tractor had been in operation for 5000 hours because Respondent believed that the tachometers were an inaccurate measure of actual airframe time. Consequently, Respondent's theory is no more than a *post hoc* rationalization.

Finally, for purposes of complying with maintenance requirements, operators must select a method of determining time of operation and then must adhere to it. Accurate recordkeeping is the linchpin behind the FAA's regulatory scheme, and FAA inspectors must be able to determine from a review of the records whether required maintenance has been performed on a timely basis. Therefore, if an operator has been using a tachometer to record time in operation, and the operator has been using that method to determine when to do its required maintenance and inspections, it cannot use as a defense that it was not required to perform certain maintenance because its tachometer is inaccurate. Hence, I agree with the law judge that "[a]lthough the tachometer reading may not be completely accurate, the FAA is entitled to rely on an operator's recording device as long as it is used consistently throughout the service life and is not in error to the point of affecting safety . . . ." (Initial Decision at 7).

Paragraph 4(b). The preponderance of the evidence supports the law judge's finding that there was no readable fuel placard next to the fuel filler caps as required by the aircraft's type certificate data sheet, and that finding is affirmed. There should have been a fuel placard referring to the fact that the aircraft could only use auto fuel and one about the fact that the fuel tanks were interconnected. I agree with the law judge that "[o]ne failing to observe the placard 'on' the fuel access cap would undoubtedly notice it 'next to' the cap had it been placed there as required." (Initial Decision at 9). Respondent could have rebutted this evidence, but it failed to do so. The only evidence that Respondent introduced on this point was a paragraph in the letter from Air Tractor, Inc., in which it was acknowledged that the metal placards were painted over and that the tank quantity (38) was steel-stamped and visible through the paint. While it may be true that, as stated further in that letter, "[o]ne would think that pilots at Growers would know that the fuel tanks were interconnected after having operated the aircraft for 5,000 hours," (Respondent's Exhibit 1), that does not excuse Respondent's failure to comply with the type certificate data sheet. Indeed, without readable fuel placards, it is simply fortuitous that no accident occurred due to improper fueling practices.

Paragraph 5. As a result of the fact that the safe-life of the wing carry-through structure was exceeded and that the required fuel placards were missing, Respondent was operating an unairworthy aircraft, and therefore, was in violation of 14 C.F.R. §91.29(a). An aircraft is airworthy when 1) it conforms to its type design or supplemental type design and to any applicable Airworthiness Directives, and 2) is in a condition for safe operations. Section 603(c) of the Federal Aviation Act of 1958, as amended, 49 U.S.C. App. §1423(c); *Administrator v. Doppes*, NTSB Order No. EA-2123 at 6, 5 NTSB 50 (January 25, 1985). Since the aircraft did not conform to its type certificate, it was not airworthy. *Morton v. Dow*, 525 F.2d 1302, 1307 (10th Cir. 1975).

Collateral Estoppel. Respondent's last argument that Complainant should be collaterally estopped from assessing a civil penalty against Respondent is rejected. Respondent bases this argument on the fact that similar actions were brought against two mechanics employed by Respondent. In one case, *In the Matter of Dabaghian*, a hearing was conducted on December 4, 1989, before Administrative Law Judge Henry B. Lasky. Judge Lasky held that Complainant had failed to prove the allegations contained in the Complaint. Complainant filed an appeal from that decision, but subsequently withdrew its appeal. **See** *In the Matter of Dabaghian*, FAA Order No. 90-0006 (February 16, 1990), 1 HCPC 15. In the other case, *In the Matter of Edwards*, Complainant withdrew the Complaint on March 12, 1990, before a hearing was held, and the law judge dismissed the Order of Civil Penalty on March 15, 1990.

"Collateral estoppel, like the related doctrine of res judicata, has the dual purpose of protecting litigants from the burden of relitigating an identical issue with the same party or his privy, and of promoting judicial economy by preventing needless litigation." *Parklane Hosiery Co. v. Shore*, 439 U.S. 322, 326 (1978).[10/] Under collateral estoppel or "issue preclusion," "[w]hen an issue of fact or law is actually litigated and determined by a valid and final judgment, and the determination is essential to the judgment, the determination is conclusive in a subsequent action between the parties, whether on the same or a different claim." **Restatement (Second) of Judgments** § 27 (1982). The **Restatement (Second) of Judgments** also provides for issue preclusion between a party to the first action and a non-party. **Id.**, § 29.

Here, Respondent relies upon the non-appealed initial decision and a voluntarily withdrawn complaint as the basis for its assertion of collateral estoppel. However, Section 13.232(j)(3) of the Rules of Practice provides that "[a]ny issue, finding, or conclusion, order, ruling, or initial decision of an administrative law judge that has not been appealed to the FAA decisionmaker is not precedent in any other civil penalty action." 55 Fed. Reg. 27548, 27585 (July 3, 1990)(to be codified as 14 C.F.R. § 13.232(j)(2)). Accordingly, if the Administrator is collaterally estopped by an unappealed initial decision of an administrative law judge in a case against another party, that would result, in essence, in giving precedential value to that initial decision, contrary to Section 13.232(j)(2). Hence, the law judge's decision in *In the Matter of Dabaghian* cannot collaterally estop the Administrator from reviewing identical issues on appeal in the instant case. Similarly, the law judge's dismissal of the case in *In the Matter of Edwards* does not estop Complainant in the case at bar because, as Complainant correctly notes in its brief, the former case was not actually litigated and the law judge's dismissal does not contain any findings. *Lubrizol Corp. v. Exxon Corp.*, 632 F. Supp. 326 (S.D. Tex. 1986).

The doctrine of collateral estoppel is also inapplicable here because the issues dealt with in *In the Matter of Dabaghian* did not include some of the issues in the instant case. Complainant alleged that Dabaghian, a mechanic employed by Respondent in the instant case, violated 14 C.F.R. § 43.15(a), by failing to properly determine whether N5224S met all applicable airworthiness requirements when he performed certain 100-hour inspections on it. Complainant alleged in pertinent part that Dabaghian had approved N5224S for return to service when the required fuel placards had been painted over and were unreadable, and the wing carry-through structure's 5,000 hour safe-life had been exceeded. Thus, two issues in the instant case -- whether the operator should have maintained FAA Form 337 for a major alteration to the propeller and whether the records reflecting compliance with applicable ADs were complete in accordance with the FAR -- did not arise in *In the Matter of Dabaghian*. In addition, the fuel placards issue was not identical in these cases. Administrative Law Judge Lasky held in *In the Matter of Dabaghian* that the evidence indicated that Mr. Dabaghian had replaced the fuel placards with readable ones when he inspected the aircraft, and that the fact that the aircraft did not have readable fuel placards after the crash does not prove that Mr. Dabaghian "painted over and made them unreadable without replacing them with new ones." (*In the Matter of Dabaghian*, Initial Decision, TR-120). In contrast, the issue in the instant case is not what Mr. Dabaghian did or did not do, or saw or did not see, when he inspected the aircraft, but whether the aircraft had readable placards on July 2, 1988, the date of the accident, which was one month after the last 100-hour inspection conducted by Mr. Dabaghian. If, as Administrative Law Judge Lasky found, the aircraft had readable fuel placards when Mr. Dabaghian returned it to service after the 100-hour inspections, then these placards somehow disappeared prior to the crash. Likewise, whether the aircraft was in an airworthy condition when Mr. Dabaghian returned it to service, as well as on the date of the flight, are two separate, albeit perhaps related, questions.

Finally, Respondent and its mechanic cannot be considered to be privies. Employment alone is insufficient to satisfy the identical party requirement. *E.g., Lubrizol Corp. v. Exxon Corp.*, 632 F. Supp. at 330. Moreover, the fact that Respondent and Mr. Dabaghian were represented by the same attorney in both proceedings is likewise insufficient. *Pollard v. Cockrell*, 578 F.2d 1002, 1009 (5th Cir. 1978).

10/ Collateral estoppel is part of the broad doctrine of res judicata. K. Davis, **Administrative Law Treatise**, § 21:2 (2d. ed. 1980). The distinction between collateral estoppel and res judicata has been explained as follows:

> Under the doctrine of res judicata, a judgment on the merits in a prior suit bars a second suit involving the same parties or their privies based on the same cause of action. Under the doctrine of collateral estoppel, on the other hand, the second action is upon a different cause of action and the judgment in the prior suit precludes relitigation of issues actually litigated and necessary to the outcome of the first action.

Parklane Hosiery Co. v. Shore, 439 U.S. 322, 326 n. 5 (1979).

THEREFORE, in light of the foregoing, Respondent's appeal is denied, and the law judge's decision is affirmed.[11/] A civil penalty in the amount of $1,400 is hereby assessed.[12/]

JAMES B. BUSEY, ADMINISTRATOR, Federal Aviation Administration

Issued this 10th day of April, 1991.

11/ I have also considered whether any changes made in the Rules of Practice during the pendency of this case may have affected the result in this case, and have concluded that no change in the Rules is pertinent to this case. If Respondent believes that changes in the Rules would have affected the outcome of this case, Respondent may file a petition for reconsideration of this decision and order, pursuant to 14 C.F.R. § 13.234. Such a petition for reconsideration must include a particularized showing of harm, citing the specific rule change (or changes) and its relevance to the challenged findings or conclusions. **See** 55 Fed. Reg. 15110, 15125 (April 20, 1990). Although the filing of a petition for reconsideration does not normally stay the effectiveness of the Administrator's decision and order, under these circumstances, if Respondent files such a petition I will stay the effectiveness of this decision and order pending disposition of the petition.

12/ Unless Respondent files a petition for reconsideration within 30 days of service of this decision (as described above), or a petition for judicial review within 60 days of service of this decision (pursuant to 49 U.S.C. App. § 1486), this decision shall be considered an order assessing civil penalty. **See** 55 Fed. Reg. 27574 and 27585 (1990) (to be codified at 14 C.F.R. §§ 13.16(b)(4) and 13.233(j)(2)).

ORAL INITIAL DECISION OF ADMINISTRATIVE LAW JUDGE BURTON S. KOLKO

This proceeding was initiated under 14 C.F.R. 13.16(h) by an Order of Civil Penalty dated May 17, 1989, alleging that respondent Watts Agricultural Aviation, Inc., d/b/a Growers Air Service 1) operated an aircraft when it was not in an airworthy condition in violation of Section 91.29(a) and 2) failed to keep appropriate maintenance and inspection records required by Section 91.173(a).[1/] The Order of Civil Penalty serves as the Complaint in an action brought under 14 C.F.R. 13.16 (see Section 13.16(g)(3)).

Complainant makes five specific allegations in support of these charges: that Respondent operated an aircraft used in agricultural operations, airtractor Model AT-301, on July 2, 1988 near Davis, California without 1) a current status of applicable Airworthiness Directives (ADs) including, for each, the method of compliance, the AD number and revision date; 2) a copy of FAA Form 337, required for an alteration to the propeller; 3) required fuel placards on either wing; and 4) a current weight and balance report and equipment list. In addition, the agency alleged that the safe life of the wing carry through structures, or wing spar, was exceeded by 754 hours. The FAA, acting through its Assistant Chief Counsel, Western-Pacific Region, proposes to assess a civil penalty under section 901(a) of the Federal Aviation Act in the amount of $1,750.00.

1/ A third charge, that Watts violated section 43.9(a) in performing maintenance on an aircraft without entering it into the maintenance record for the aircraft, was later dropped as erroneous. Tr. 7.

Respondent denied the allegations and by letter dated May 9, 1989, requested a hearing in this matter. A hearing was held on October 24, 1989, in Sacramento, California. Due to the unusual nature of the case I requested and received written briefs and issue this written decision (See Tr. 109-110; 14 C.F.R. 13.231 and .232). I find the violation in each instance except number 4 above, and assess a civil penalty of $1,400.00.[2/]

Background

On July 2, 1988, a restricted-category aircraft operated by Respondent and used for special-purpose agricultural operations pursuant to 14 C.F.R. 21.25 -- airtractor Model AT-301, number N5224S -- was involved in an accident. FAA Aviation Safety Inspector Gordon Read investigated on July 6, 1988, finding the aircraft upside down and facing opposite the direction of the flight in a field near Davis, California. Its tail section, wing, propeller and cockpit sustained damage. Inspector Read took pictures at the scene (Tr. 9-13; Exhs. C-2, C-3). Following his on-site investigation, he reviewed relevant FAA and aircraft records and the next day sent a letter of investigation to Respondent's president (Exh. C-9; Tr. 39) who replied on July 27, 1988 (Exh. C8; Tr. 35). Inspector Read,s investigation led eventually to the charges before me (See Tr. 13-43).

Airworthiness Directives

Paragraph 3a of the Order of Civil Penalty charges Respondent with failing to keep "a current status of applicable Airworthiness Directives (A.D.'s) including for each, the method of compliance, the AD number and revision date" pursuant to the requirements set out in 14 C.F.R. 91.173(a)(2)(v). Inspector Read stated that two applicable Airworthiness Directives, ADs 8206-12 and 83-18-01 (Exh. C-6) were referenced in Respondent's aircraft log without revision dates. In addition, AD 83-18-01 contained no method of compliance (Tr. 32).

Respondent states in defense that the agency has neither alleged nor shown that these ADs were not complied with (Tr. 82-83). Indeed, it asserts that it complied with all applicable ADs at the time of the flight and accident (Tr. 100, 102-04; see Resp. Br. (Styled "Closing Arguments"), pp. 8-9).

I find the violations as charged. The agency proved, in accordance with its charge, that the revision dates for each AD were not recorded and that one AD contained no method of compliance. That the ADs may have been in fact complied with is irrelevant. The allegation essentially

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2/ I grant Complainant's motion to mark and admit its proposed Exhibits C-10 through C-14. I also deny Complainant's renewal of its Motion, based on Respondent's failure to provide any exhibits prior to hearing, to Deem Allegations Admitted, which I denied at the hearing (see Tr. 52, 57-58, 71). See note 9, below, for the description of exhibits C-10 through C-14, which are transmitted herewith to the hearing docket.

charges a recordkeeping violation[3], and the FAA has shown that the required records were not kept.

Form 337

Paragraph 3b of the complaint charges that the Respondent violated 14 C.F.R. 91.173(a)(2)(vi) by failing to keep "a copy of FAA Form 337 required for an alteration to the currently installed propeller" (See Tr. 32-34; Exh. C-7). Inspector Read determined through observation and photographs that an alteration to the propeller--the installation of roller bearings--had been performed (Tr. 12, 34-35). According to the agency, however, Respondent did not have the required records reflecting such alteration (Tr. 3234). The FAA is not alleging that the repair was not performed (Tr. 93).

Respondent maintains that no violation occurred. Respondent explained that the FAA-approved repair station performing the propeller work issued to it a "yellow tag"--a logbook entry recording device certifying, in accordance with what is written on the tag, that the product is airworthy and approved for return to service (Tr. 80-82). N5224S, it states, was then suitable for return to service (Tr. 93). Moreover, Respondent asserts, it had no knowledge that modifications were performed, and in any event never received the proper form. If the repair station, which was required to issue Form 337, failed to do so, and Watts, further, was unaware of any modification, then it could not possibly maintain the record (Resp. Br. 9; Tr. 100-01). It argues that it would be "improper to hold Watts liable for the failure of the repair station's duty" (Resp. Br. 9). In these circumstances, Respondent contends that no violation existed.

I find the violation as charged. The agency proved that Respondent failed to maintain records reflecting the propeller repair. I reject Respondent's attempt to shift its duty to the repair station. 14 C.F.R. Section 91.173, under which Watts was charged, sets out specific responsibilities for owners and operators. It does not permit those duties to be transferred to another entity. Furthermore, Respondent cannot fairly suggest that it had no knowledge of the repair while at the same time asserting that the yellow tag permitted the aircraft to return to service. In making these contentions, Respondent seems to be suggesting either that it was unaware that receipt of the yellow tag indicated that some kind of work had been performed on the propeller or that it was ignorant of the contents of the tag. The suggestion that Watts, a company in the business of airborne agricultural operations, did not know what had taken place at the repair station strains credibility. Moveover, even if it had no such knowledge, receipt of the yellow tag would have, or should have, put it on notice to further investigate. Watts had, at the least, constructive knowledge of the repair. It was then incumbent upon it to acquire Form 337 from the repair station. It did not.

For these reasons, then, I find that FAA proved paragraph 3b of the Order of Civil Penalty.

Safe Life of Wing Carry Through Structure

Paragraph 4a of the Order of Civil Penalty charges that "[t]he wing carry through structures' safe life was exceeded by 754 hours." On the basis of this allegation Respondent was charged with operating the aircraft in an unairworthy condition in violation of 14 C.F.R. 91.29(a).

The AT-301 airtractor type certificate data sheet (TCD) requires that the carry through structure of the wing, or wing spar, be life-limited at 5000 hours.[4] Inspector Read testified that N5224S' tachometer indicated 5,754 hours, or 754 hours over the service limit (Tr. 16, 27-29, 55). He acknowledged that the tachometer, which measures the time the engine is running, may not be an accurate measure of time in service, but if the operator uses it as a baseline to record time, the FAA will use that measure in enforcing the FARs (Tr. 28, 74-75).

Respondent argues that no violation occurred. It asserts that the true flight time for this aircraft was less than 5000 hours. In support it cites a letter from Snow Engineering, the aircraft manufacturer. In the letter Snow claimed that its tachometers recorded a flight hour at an engine speed of 1796 RPM. Since the airtractor operated at 2100 RPM loaded and 2000 RPM empty for an average of 2050 RPM, the true flight time for this aircraft, according to Snow, worked out to 4,894 hours--4,994 under its calculations minus another 100 hours to account for the engine running while the aircraft was being loaded and not in flight (Exh. R-1; Tr. 51). Respondent also cited service letter number 75 issued December 11, 1988, which confirmed the tachometer characteristics described above and clarified that engine speeds below 1796 RPM accumulate hours at a slower rate than clock hours, while speeds over 1796 RPM build up hours at a faster rate. Service letter number 75 further stated that a more appropriate tachometer, based on an average engine speed of 2050 RPM, would be available in January 1989. The new tachometer would record about 14% less time per clock hour than the old (Exh. R-2; Tr. 51-54). In addition, Respondent's witnesses asserted based on the two letters that N5224S had less than 5000 hours actual flight time at the time of the accident (Tr. 89, 99).

I find the violations as charged. Respondent's tachometer showed a reading of 5,794 hours, 794 hours beyond the 5000-hour service life specified for the carrythrough structure of the wing in the airtractor's type certificate data sheet. Although the tachometer reading may not be completely accurate, the FAA is entitled to rely on an operator's recording device as long as it is used consistently throughout the service life and is not in error to the point of affecting safety (See Tr. 75). The evidence

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[3] This is not to suggest that the violation is technical in nature. Revision dates assist in enforcing safety standards by accounting for later revisions or amendments to applicable ADs, and thus help to indicate when inspection is next required (See Tr. 3032; Exh. C-5, p. 42).

[4] Exh. C-3. It also provides that the life limit could be extended to 7000 hours if the entity complied with Snow Engineering Company's service letter no. 55, dated July 26, 1984. Exh. C-4; Tr. 15. Respondent stipulated that it did not meet the requirements of service letter no. 55. Tr. 18.

showed that Respondent's tachometer was consistently used and was not grossly in error. Against that background, I find the violation. Moreover, Inspector Read stated that, in view of Respondent's contention that actual flight time was under 5,000 hours, he sought other expert opinions on the matter, and all concurred with his assessment that the wing spar's safe life was exceeded (Tr. 51-52). These assessments also lead me to conclude that Respondent is in violation of 91.29(a) as charged in the complaint.

Service letter number 75, promising a more accurate tachometer, does not avail Respondent. It was issued on December 11, 1988, several months after the accident that triggered this case, and is not relevant to the charge. In any event it does not relieve Respondent of its responsibility to ensure, according to measuring devices then in use, that the service life of the wing carrythrough structure was not exceeded. For all these reasons I find the violation as stated in paragraph 4a of the Order of Civil Penalty.

Fuel Placards

Paragraph 4b of the complaint charges that "the required fuel placards were not displayed on either wing." Thus, the complaint alleges, the aircraft was operated in an unairworthy condition in violation of 14 C.F.R. 91.29(a).

The TCD requires that certain information pertaining to flight and operating limitations be placed next to fuel filler caps.[5/] Inspector Read testified that "there was no placard readable on the fuel access cap" (Tr. 23-24). Respondent states that no violation occurred, arguing that the type certificate data sheet requires that the placard be "near the caps--not on the cap" as Read testified (Resp. Br. 8).

I find the violation as charged. I conclude that no readable fuel placard was placed next to the fuel filler caps as required by the aircraft's TCD. Although Inspector Read testified in support of this charge that he observed no placard "on" the fuel access cap, I discern no decisionally significant difference between "on" and "next to" in view of the purpose of the requirement. This requirement, grounded in concerns of safety, is informational in nature. It is designed to give the observer information pertaining to fuel requirements and limitations in order to permit the operation of the aircraft in a safe manner. One failing to observe the placard "on" the fuel access cap would undoubtedly notice it "next to" the cap had it been placed there as required. It makes no difference, then, that Inspector Read testified only that he failed to observe the placard "on" the cap. I conclude that no placard was next to the cap either. Therefore, I find the violation as charged.

Weight and Balance Report and Equipment List

Paragraph 4c of the Order of Civil Penalty charges that "the weight and balance report and equipment list were not current, i.e., the list did not include the landing light, nav lights, strobe lights, or spray system" in violation of sections 91.29(a) and 91.173(a) of the FARs.

Inspector Read testified that his photographs revealed that the named equipment items had been installed on the aircraft after its original certification in 1978. However, no corresponding addition was made to the equipment list nor had the weight and balance report been updated (see Exh. C-5, p. 48; Tr. 24-25).

Respondent argues that it was not required to possess an updated weight and balance form. In support it points to the TCD, which states that "current weight and balance report including list of equipment . . . must be provided . . . at the time of original certification" (Exh. C-3). This statement, it contends, indicates that a current weight and balance report is needed only at original certification. Watts also asserts that the manufacturer appears to agree with its interpretation of the TCD (see R-I). Finally, it notes that CAM 8.10-4(c)(l)[6/] states that "A weight and balance report is not required to be submitted" (see C-11, p. 10).

Complainant argues that the addition of this equipment required that the empty weight certification be reestablished and the equipment list updated in order to be able to ascertain that the aircraft was in a safe weight and balance status--that is, that the center of gravity fell within a specific limit and the aircraft weight was not exceeded. Inspector Read explained that while an agricultural operator may conceivably operate safely with greater than the maximum weight or outside center-of-gravity limitations, it is incumbent to have the certificated empty weight of the aircraft and the equipment list in order to determine whether that aircraft can in fact be operated safely (Tr. 25-26).

Complainant also asserted that CAM 8.10-4(c)(l) as well as (b)(3) establish standards and policies only for issuance of type certificates, airworthiness certificates and aircraft modifications; the subject aircraft, by contrast, was originally type certificated under a restricted-type certificate and was neither recertificated nor modified from another type certificate. Therefore, it states, CAM policies cited by Respondent afford no relief from TCD requirements (Tr. 67-69, 72-73). In contrast to Respondent, Inspector Read cited the language of Respondent's type certificate data sheet as requiring a current weight and balance report and equipment list (Exh. C-3; Tr. 26; see also Tr. 42-43).

5/ This information must state as follows: "Fuel 36 U.S. gal. Min. Octane 87. Fuel tanks are interconnected. Allow sufficient time for fuel level to equalize before topoff of tank. No aeromatic fuel." In addition, "Next to oil filler cap: Oil Tank 6 gal. cap." Exh. 3; Tr. 22-24.

6/ Civil Aeronautics Manual (CAM) 8, submitted as Exh. C-11 and dated March 1959, consisted originally of regulations (14 C.F.R. Part 8) relating to standards for the issuance of type and airworthiness certificates and operating limitations for restricted category aircraft. See 15 F.R. 9223, December 29, 1950, establishing 14 C.F.R. Part 8. In 1964, Part 8 was eliminated and portions of it recodified in 14 C.F.R. Part 21. The former 8.01(b) and 8.10, for example, became section 21.25; 8.20 was folded into new section 21.185. See 26 F.R. 10698, November 15, 1961 (announcement of proposed rule change); 29 F.R. 6999, May 27, 1964 (NPRM); and 29 F.R. 14563, October 24, 1964 (Final Rule). The portions of Part 8 which were not retained in the FRs or otherwise superseded remain as FAA policy and provide technical information on acceptable methods of complying with the regulations. They should be used in conjunction with applicable sections of the FARs. See Advisory Circular (AC) 20-33B, dated June 12, 1975 (Exh. C-13).

I find that Complainant has not sustained its burden as to this charge. It has not proved its case. I assume, without deciding, that the referenced agency policies stating that weight and balance reports are not required to be submitted (CAM 8.10-4(b)(3) and (c)) do not apply to this aircraft. Complainant nevertheless has not shown that Respondent was under a duty to submit an updated weight and balance report and equipment list. The agency did not show that any statutory or regulatory requirement to submit such items was triggered by the addition to N5224S of a landing light, nav light, strobe lights and a spray system. Furthermore, the type certificate data sheet plainly requires that a weight and balance report and equipment list be provided only at the time of original certification.

I am sympathetic to the agency's further contention that a weight or balance change could in any event render this aircraft unairworthy or unsafe. But this record furnishes no evidence tending to so prove. Complainant's mere assertion that the information sought was needed to establish a baseline by which the aircraft's weight and balance and center of gravity could be measured is insufficiently probative. I therefore find for Respondent on this count.

Penalty

Complainant seeks to assess a civil penalty of $1,750.00 based on five specific allegations (see Order of Civil Penalty, paragraphs 3a and b and 4a, b, and c).[7] As detailed above I have found the violation with respect to four of the five and found for the Respondent as to the fifth. The record does not indicate how the agency would allocate its proposed penalty among the allegations. I conclude that an allocation of one-fifth of the proposed penalty per charge, or $350.00, is a fair and reasonable assessment.

As to the four allegations in which I find for the agency I conclude that the proposed penalty is reasonable and no basis exists for reducing it. Since I have found for the Respondent on the fifth allegation, I am reducing the agency's proposed penalty by one-fifth, or $350.00. I, therefore, assess a civil penalty of $1,400.00.[8]

7/ A sixth allegation, that Respondent operated aircraft N5224S in an unairworthy condition, is based on the other charges. See Order of Civil Penalty and Tr. 42.

8/ The following FAA rebuttal exhibits are received for the record:

1. *Memo. dated April 2, 1974; Subject: Applicability of Airworthiness Directives, from Director, Flight Standards Service, AFS-1 to All Regional and Center Directors. (C-10)*
2. *Civil Aeronautics Manual 8. Aircraft Airworthiness, Restricted Category, March 1959. (C-11)*
3. *AC-43.13-1A, Chapter 13. Weight and Balance, pages 243 & 257. (C-12)*
4. *Advisory Circular No. 20-33B, dated May 1, 1975. (C-13)*
5. *Advisory Circular 43-9B, dated January 9, 1984. (C-14)*

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F.A.A. Order No. 91-9
Served: April 12, 1991

IN THE MATTER OF

CONTINENTAL AIRLINES, INC.

Docket Nos. CP89NM0037, CP89NM0052, CP89NM0057

DECISION AND ORDER

Respondent Continental Airlines, Inc. ("Respondent") has appealed from the oral initial decisions[1] issued by Administrative Law Judge Burton S. Kolko in the above-captioned cases at the consolidated hearing held in these cases on October 19, 1989, and February 1, 1990, in Seattle, Washington. The law judge held that Respondent violated section 108.5(a)(1) of the Federal Aviation Regulations (FAR) (14 C.F.R. §108.5(a)(1)),[2] by failing to carry out a provision of the Standard Security Program (SSP) which was adopted by Respondent pursuant to that regulation. Complainant sought a civil penalty of $1,000 in CP89NM0037, $10,000 in CP89NM0052, and $1,000 in CP89NM0057. The law judge affirmed the civil penalty sought in each case.

In the Complaints filed in these cases, Complainant alleged that on three separate occasions, at specified security checkpoints at three separate airports, Respondent's security screener failed to detect an FAA-approved test object during a no-notice test conducted by the FAA. It was further alleged that Section XIII.D.1. of Respondent's security program requires Respondent, acting through its employees, contractors, and agents who perform screening functions, to detect each FAA-approved test object during each screening system operator test conducted by the FAA without notice and using FAA-approved test objects. It was alleged in each Complaint that Respondent violated section 108.5(a)(1) of the FAR, in that it failed to carry out Section XIII.D.1. of its security program.

Respondent presented the same arguments in its appeal briefs in each of these three cases. For the reasons discussed below, Respondent's appeals are denied, and the law judge's initial decision is affirmed.[3]

1/ A copy of the law judge's initial decision is attached.

2/ Section 108.5(a) of the FAR provides in pertinent part:

> Each certificate holder shall adopt and carry out a security program that meets the requirements of section 108.7 for each of the following scheduled or public charter passenger operations: (1) Each operation with an airplane having a passenger seating configuration of more than 60 seats.

FOOTNOTE 3 ON NEXT PAGE

IOP

13

To

Part 13 Formal Complaint

ORDER EA-2934

Adopted April 7, 1989

AERO LECTRICS, INC., RESPONDENT

SE-8532

OPINION AND ORDER

Respondent has appealed from the written initial decision issued by Administrative Law Judge Patrick G. Geraghty on June 30, 1988.[1] The law judge affirmed the Administrator's order revoking respondent's repair station certificate based on the following grounds, as set forth in the order (complaint), as amended:

1. Aero Lectrics, Inc. (hereinafter Aero Lectrics) is now, and at all times mentioned herein was, the holder of Repair Station Certificate No. S03-69.

2. From approximately June 13, 1984, through August, 1985, Aero Lectrics performed repairs and alterations to twenty-two (22) Lucas A.C. generators, and thereafter approved these generators for return to service.

3. The A.C. generators described in Paragraph 2 were subsequently installed on DeHavilland Dash 7 aircraft operated by Rocky Mountain Airways, Inc.

4. The alterations performed by Aero Lectrics consisted of machining the bearing and housing assembly, P/N 81400971, and the housing liner, P/N 81400973, and chrome plating and machined bearing surfaces.

5. The alteration procedure described in paragraph 4 was an appliance major alteration.

6. The alteration procedure described in Paragraph 4 was not approved by the appliance manufacturer (Lucas) or by the FAA.

7. On or about May 2, 1986, Aero Lectrics, received a Beechcraft (Electro-Mech) condenser blower, Model EM69, from Rio Airways with a request to overhaul that unit.

8. Aero Lectrics disassembled, inspected, cleaned, repaired, and tested the Model EM69 blower and replaced certain parts.

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[1] A copy of the initial decision is attached.

9. On or about May 13, 1986, Aero Lectrics approved the blower for return to service on a maintenance release tag with the entries, "overhauled and tested" "0 time" and "the appliance identified was repaired and inspected in accordance with current instructions contained in Rio Airways and the maintenance release rules of the FAR's under which the operator is certified . . ."

10. These entries were intentionally false, in that Rio Airways had never provided any manual or technical data for maintenance release purposes to Aero Lectrics.

11. On or about May 13, 1986, Aero Lectrics sent Rio Airways an invoice containing the work description "overhauled and tested" and a charge in the amount of $445.98.

12. At the time of the above-described work, Electro-Mech., Inc., had not issued an overhaul manual or any other overhaul data or instructions for overhauling the Model EM69 blower.

13. Aero-Lectrics overhauled the above-described blower without using required special technical data since such data was not available to it.

By reason of the foregoing facts and circumstances, Aero Lectrics violated the following Federal Aviation Regulations.

a. Section 43.13(a), in that it performed maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller, or appliance and failed to use methods, techniques, and practices prescribed in the current Manufacturer's Maintenance Manual or Instructions for Continued Airworthiness, or otherwise acceptable to the Administrator.

b. Section 43.13(b), in that it performed maintenance, alteration, or preventive maintenance and failed to do the work in such a manner and to use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on was at least equal to its original or properly altered condition.

c. Section 145.51, in that it approved for return to service an aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major alteration when the work had not been done in accordance with technical data approved by the Administrator.

d. Section 145.53, in that it maintained or altered an article for which it was rated when it required special technical data that was not available to it.

e. Section 145.57(a), in that it failed to perform its alteration in accordance with the standards in Part 43 of the Federal Aviation Regulations.

f. Section 43.12(a)(1), in that it made, or caused to be made, a fraudulent or intentionally false entry in a record or report that is required to be kept, made, or used to show compliance with any requirements under Part 43 of the Federal Aviation Regulations.[2]

Furthermore, the Administrator has determined that Aero Lectrics lacks the degree of care, judgment, and responsibility to be holder of a Repair Station Certificate and lacks qualifications to hold said certificate.

In support of its appeal, respondent had filed an appeal brief in which it argues that the evidence does not support findings of intentional falsification or lack of qualifications on the part of respondent; that in the absence of a specific finding of lack of qualifications the Administrator's complaint should be dismissed as stale; and that the law judge's interpretation of "preventive maintenance" is not justified by the language of the rule.

The Administrator has filed a reply brief opposing the appeal and urging that the initial decision be affirmed.

Upon consideration of the briefs of the parties, and the entire record, the Board has determined that safety in air commerce or air transportation and the public interest require affirmation of the order of revocation. We adopt the law judge's findings as our own.

This proceeding involves two separate sets of violations - the first pertaining to work done for Rocky Mountain Airways on 22 generators in

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[2]The above provisions read as follows:

"§43.13 *Performance rules (general).*

(a) Each person performing maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller, or appliance shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the Administrator, except as noted in §43.16. He shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices. If special equipment or test apparatus is recommended by the manufacturer involved, he must use that equipment or apparatus or its equivalent acceptable to the Administrator.

(b) Each person maintaining or altering, or performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness."

"§145.51 *Privileges of certificate.*

A certificated domestic repair station may -

(a) Maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory, or part thereof, for which it is rated;

(b) Approve for return to service any article for which it is rated after it has been maintained or altered;...

However, a certificated repair station may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major alteration unless the work was done in accordance with technical data approved by the Administrator."

"§145.53 *Limitations of certificates.*

A certificated domestic repair station may not maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory for which it is not rated, and may not maintain or alter any article for which it is rated if it requires special technical data, equipment, or facilities that are not available to it."

"§145.57 *Performance standards.*

(a) Except as provided in §145.2, each certificated domestic repair station shall perform its maintenance and alteration operations in accordance with the standards in Part 43 of this chapter. It shall maintain, in current condition, all manufacturers' service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters."

"§43.12 *Maintenance records: Falsification, reproduction, or alteration.*

(a) No person may make or cause to be made:

(1) Any fraudulent or intentionally false entry in any record or report that is required to be made, kept, or used to show compliance with any requirement under this part . . ."

1984-1985 and the second pertaining to work done for Rio Airways on a condenser blower in 1986. With respect to the first, the Administrator charged, and the law judge found, that the work done on the generators constituted a major alteration utilizing a procedure not approved by the appliance manufacturer (Lucas) or the FAA. Respondent argues on appeal, as it did unsuccessfully to the law judge, that the work done was preventive maintenance, rather than a major alteration, and thus did not require manufacturer or FAA approval. In support of his argument, respondent points to the definition of "preventive maintenance" as including the application of "preservative or protective material to components" where "complex assembly operations" are not involved.[3] Like the law judge, we are not persuaded by this argument.

The work actually done on the generators may be described as follows: The component was disassembled, the parts were machine ground to either an oversize or undersize dimension, the parts were then chrome plated, they were again ground to specific interior and exterior diameters, and finally the parts were reassembled.

In our judgment, the above process is a "complex assembly" within the meaning of Appendix A of Part 43 and the chrome bonding is not a "preservative or protective material," a phrase which more logically refers to preservatives or lubricants. The work done therefore cannot fairly be described as "preventative maintenance." On the contrary, the work constituted a major alteration since it changed the basic design of the part by introducing a new material (chrome). Since the procedure utilized was not approved by the manufacturer[4] or the FAA, the cited violations were clearly established.

The second set of violations pertains to the overhaul of a condenser blower, manufactured by Electro-Mech, at the request of Rio Airways, the operator of the Beechcraft in which the blower was installed. The record establishes that respondent overhauled the blower without the aid of either an overhaul manual or such other technical data as would assure that the work would be correctly or properly accomplished.[5] When the oversized blower was returned to Rio, the part had attached to it a "Serviceable Part Tag" indicating it had been "OVERHAULED AND TESTED" and was a "0 time" part.[6] This tag also contained a statement, under the heading "MAINTENANCE RELEASE," that "the appliance identified was repaired and inspected in accordance with current instructions contained in Rio Airways and the maintenance rules of the FAR's under which the operator is certificated and is approved for return to service as per those requirements."[7]

Respondent argues that the above statement may be meaningless, incomplete, or improper but not intentionally false because the phrase "Rio Airways" does not refer to anything, such as a manual or technical data. We disagree. A repair station such as respondent is permitted to do maintenance work based on technical data submitted by the operator usually in the form of the maintenance (or overhaul) manual. The purpose of the tag is to

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[3]Part 43, Appendix A, Section (c)(10).

[4]In fact, the manufacturer viewed the procedure employed by respondent as poor practice.

[5]At the time of the overhaul, the manufacturer (Electro-Mech) had not yet issued an overhaul manual. Although Electro-Mech supplied cut-away drawings to respondent, it is apparent that these documents were not sufficient, in terms of specific dimensions and test procedures, to assure a proper overhaul. Rio Airways furnished no data to respondent.

[6]Ex. C-4.

[7]The above statement is printed on the tag with the phrase "Rio Airways" entered in longhand in the underscored space. The statement was signed by the President and Chief Inspector for respondent.

indicate that the part has been overhauled pursuant to those procedures and that the terms of the maintenance release have been met in accordance with the operator's data. The President of respondent testified in effect that, when he signed the tag, he was representing that the work was performed in accordance with Rio's maintenance manual (or data) even though respondent had been unable to obtain a manual from Rio. Under the above circumstances, the law judge concluded, reasonably in our view, that the information on the tag constituted an intentionally false entry.

Finally, with respect to sanction, respondent argues that the evidence does not support a finding that respondent lacks qualifications. The law judge ultimately concluded as follows:

> The Board has held that a single instance of intentional falsification can support revocation. Herein, however, not only is there shown falsification but a course of conduct which to me demonstrates respondent's lack of care, judgment and a disregard or contempt for the FARs under which respondent is certified. I find, therefore, that safety in air commerce and transportation and the public interest therein mandate revocation of respondent's Repair Station Certificate. And I so hold. (I.D. 14).

In our judgment, the above conclusion is consistent with Board precedent and with the circumstances of the case. Contrary to respondent's assertion on appeal, the Board has affirmed revocation on the basis of a single instance of intentional falsification[8] Furthermore, by virtue of the conduct reflected in this record, respondent has demonstrated that it lacks the qualifications[9] to hold a repair station certificate and that the sanction of revocation is warranted.

ACCORDINGLY, IT IS ORDERED THAT:

1. Respondent's appeal is denied;

2. The Administrator's order, and the initial decision, are affirmed; and

3. The revocation of respondent's repair station certificate shall commence 30 days after service of this order.[10]

KOLSTAD, Acting Chairman, BURNETT, LAUBER, NALL and DICKINSON, Members of the Board, concurred in the above opinion and order.

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[8]See *Administrator v. Twomey*, Order EA-2370 (1986), where the Board upheld the revocation of the respondent's medical and other airman certificates for backdating his application of a medical certificate.

[9]As respondent points out, the law judge did not explicitly state that respondent lacks "qualifications". However, he did state that respondent has demonstrated a "lack of care, judgment and a disregard or contempt for the FAR's under which respondent is certified", a finding which is tantamount to lack of qualifications. Consequently, respondent's argument that the complaint should have been dismissed as stale is without merit.

[10]For purposes of this order, respondent must physically surrender its certificate to an appropriate representative of the FAR pursuant to section 61.19(f) FAR.

DECISION AND ORDER OF PATRICK G. GERAGHTY, ADMINISTRATIVE LAW JUDGE

This proceeding is before the National Transportation Safety Board (the Board) under the provisions of Section 609, Federal Aviation Act of 1958, as amended and the Board's Rules of Practice in Air Safety Proceedings (49 CFR 821.1 et.seq.) on the appeal of Aero Lectrics, Inc. (herein respondent), from an Order of Revocation, as amended, issued against respondent's Repair Station Certificate, No. S03-69. The Order was issued on behalf of the Administrator, Federal Aviation Administration (FAA), hereafter complainant, by the Regional Counsel of the Northwest Mountain Region. The Order serves herein as the complaint.

Following notice, the matter was heard in Denver, Colorado, on March 15, 1988. At trial the complainant was represented by Staff Counsel Karl B. Lewis, Esq., Regional Counsel's Office. The respondent was present (in the person of Company Official) and was represented by Counsel J. Scott Hamilton, Esq., of Colorado.

Following trial, parties were granted leave to obtain further testimony from a Charles Williams by way of deposition. That was accomplished on March 23, 1988, and the submitted deposition has been considered and is hereby designated as part of the record in this proceeding.

AGREEMENTS

The parties have agreed that there is no dispute as to the following allegations as stated in the complaint:

1. The allegations contained in Paragraphs 1, 3, 7, 8, 9 and 11 are admitted in their entirety.

2. The allegations of Paragraphs 2 and 4 are admitted, with the exception of the descriptive word, "alterations."

3. So much of Paragraph 12 as pertains to lack of issuance of an overhaul manual.

The matters agreed to are deemed established for purposes of determination of this proceeding.

DISCUSSION

The complainant's Order of Revocation is based upon the circumstances relating to two (2) instances of alleged repair, alteration or overhaul performed by respondent on two (2) different items/appliances: twenty-two (22) Lucas A.C. generators; a Beechcraft (Electro-Mech) condenser blower Model EM69. It is charged that respondent in his performance of the work done and in representations made pertaining thereto did so in regulatory violation of provisions of Parts 43 and 145 Federal Aviation Regulations (FARs). For ease of discussion the two (2) incidents, the evidence offered by the parties and their contentions with respect to each incident will be addressed separately.

With respect to the work admittedly performed by respondent on twenty-two (22) Lucas A.C. generators, it is complainant's contention that the work constituted an appliance major alteration; the procedure respondent admits using was not approved by the appliance manufacturer or by FAA. Further,

that the process utilized constituted a complex assembly operation. respondent contends that the work he performed was not a major alteration, but rather was work authorized in accordance with FAR provisions pertaining to preventive maintenance.

Two (2) of complainant's witnesses testified as to the scope of the work performed. The chroming process was described as a technique by which a hard chrome surface is applied, i.e., built-up, on or to the original surface of the bearing housings and liners of the generators. Prior to the chroming process, and after disassembly, the parts were machine ground to either oversize or undersize to make room for the chrome application. After the parts had been chrome plated they were then again ground to specific interior and exterior diameters and reassembled.

Mr. Glenn Lewis is employed by FAA, holds an airframe and powerplant (A&P) Certificate and investigated this incident on behalf of complainant. He testified that he had contacted the manufacturer, Lucas Industries, concerning the process used by respondent. Exhibit C-16 establishes that the manufacturer never authorized and, in fact, would have recommended against the chroming build-up process developed by respondent. Mr. Lewis also stated that FAA had never issued an approval or authorization for this process. In his opinion, the procedure used by respondent on the Lucas generator bearing and housing assemblies constituted a complex process and was a major alteration as it changed the original design of the subject parts. He pointed out that Appendix A, Part 43 FAR defines a major alteration as an alteration of basic design not in accordance with either the manufacturer's or the FAA's airworthiness directives.

Mr. John Feyler, President and Chief Inspector for respondent and Mr. Charles Rathburn, Director, Quality Control, Rocky Mountain Airways, testified concerning the work performed to the generators. Apparently, the latter organization had been experiencing an excessive failure rate on the two (2) assemblies or parts of the Lucas generators and was also having difficulty obtaining replacements. At a meeting attended by these two (2) individuals and other personnel of the two organizations, it was determined that respondent would perform the chroming process described in an effort to alleviate the failure problem. Both Mr. Feyler and Mr. Rathburn testified they, that during discussions, had determined that the chrome process was not a major alteration or repair but rather would constitute preventive maintenance, thus not requiring FAA -- or apparently --manufacturer's approval or authorization. They conceded that at no time prior to, nor subsequent to that discussion was any contact made with either the manufacturer, or the FAA to determine if the process was acceptable or to inquire as to whether or not their classification of the process as preventive maintenance was correct. Mr. Rathburn agreed that the process used was not in accordance with recommendations of the manufacturer and that the basic design of the pertinent assemblies did not include a chrome plating of the parts.

It is clear that the process utilized by respondent on these bearing and housing assemblies constituted appliance major alterations in that the process altered the components basic design and was not in accord with either manufacturer, nor FAA recommendations and/or Airworthiness Directives. Thus, the process did not fall with the exception/definition of Appendix A pertaining to "preventive maintenance."

Moreover, the process described -- disassembly, grinding, chrome plating, regrinding, and reassembly -- cannot be logically considered as other than a "complex assembly" process within the meaning and intent of that expression as stated in Appendix A, 4, (c), Part 43 FAR. For completeness, I also observe that respondent's process cannot be reasonably be said to come

within Item 10 of Appendix A, 4(c) as its very language excludes the type of work described herein and, as the manufacturer (if asked) would have recommended against such process, and since there is no evidence showing that such or similar process has been approved, authorized or recommended or used by any other repair facility, the process is also, in my view, contrary to good practice.

I find, therefore, that with respect to the work performed by respondent on the twenty-two (22) Lucas generators that respondent did so in regulatory violation of the charged Sections of Parts 43 and 45 FARs.

Respondent admits that he received a Beechcraft (Electro-Mech) condenser blower (hereafter, blower) from Rio Airways with a request for overhaul of the unit, and thereafter, approved said unit for return to service on a maintenance tag bearing entries that the work had been done in accordance with the instructions and maintenance release rules of Rio Airways and the FARs under which that operator was certified. Complainant contends that such entries were intentionally false, as Rio Airways had never furnished any manuals, or technical data for maintenance release purposes to respondent. He further alleged that, as Electro-Mech had not issued overhaul data or instructions for overhauling the blower, respondent performed the work without utilizing the required special technical data, as such was not available. Respondent performed the work without utilizing the required special technical data as such was not available. Respondent, while admitting to having done the work, returning the unit to service and the lack of an issued overhaul manual, denies that he intentionally falsified the service tag, or performed the work without having the required special technical data or instructions for performance of that overhaul.

Michael Payne was, in 1986, employed by Rio Airways (Rio) as Director of Maintenance, and holds an airframe and power plant certificate. He testified that in the spring of 1986, Rio contacted respondent and contracted with respondent for a zerotime overhaul of the blower. Prior to that Rio had attempted to obtain an overhaul manual to allow Rio to do the work itself. Rio called Electro-Mech but was advised that no overhaul manual, nor overhaul data were available. Mr. Payne testified that *Exhibit C-4*, is the serviceable part tag that was attached to the blower when it was returned to Rio by respondent. The witness stated that Rio was not certified to overhaul the blower unit as Rio did not have the required manual. Thus, at the time Rio sent the blower to respondent, Rio did not have any technical data, nor an overhaul manual to furnish to respondent.

Charles D. Williams is employed by Vickers Electromech - formerly, Electro Mech, Inc. - in the position of Chief Engineer, Motors and Fans, and in 1986, held the position of Director Quality Control for that organization. His testimony established that as of May 1986, Electro-Mech had not issued an overhaul manual for the type blower in question. An overhaul manual for such blowers was issued on August 20, 1986, Exh. C-5, but prior to that date any blower requiring repairs would necessarily have to be returned to the manufacturer, i.e., Electro-Mech for accomplishment. The witness discussed "cut-away drawings", stating that such drawings would have a parts list attached, but that such drawings, along with the parts list, would not provide sufficient data to allow for accomplishment of an overhaul of the blower unit at issue, as the document would not provide specific dimensions for components, not provide test procedures, and not provide data for repair procedures. Exh. C-6.

Fred Maupin is an Aviation Safety Inspector for FAA, he holds an A&P certificate and has been in aviation maintenance for about 40 years. He described his initial involvement in this matter, stating that when he interviewed Mr. John Feyler to inquire as to respondent's possession of an

overhaul manual for work on EM69 blowers, respondent produced only a cut-away drawing. The witness stated that, when he asked specifically for a manual, he was told by Mr. Feyler that none was available, and further, that the respondent never submitted any other basis for the work done, other than the cut-away drawing. Mr. Maupin also stated that, when he told Mr. Feyler than an overhaul could not be, by regulation, performed in the absence of a manual, Mr. Feyler replied that someone had to do it (the work). The witness pointed out that, while a Repair Station, such as respondent, can do maintenance work based upon technical data/manual submitted with an air carrier's manual - where the carrier owns the unit being repaired - the Repair Station must have that air carrier's manual available for guidance for accomplishing the work in accordance with that carrier's requirements. Thus the release executed on Exh. C-4 by respondent, according to Mr. Maupin, would tell a recipient of the blower that the work done by the respondent had been done in accordance with Rio Airways procedures and overhaul manual. The witness opined that respondent could not rely upon the Functional Test section of its Inspection Procedure Manual as such only provides information for testing the functions of a piece of equipment prior to repair and after the work had been done and the unit re-assembled. This witness concluded that respondent could not have properly overhauled the blower in the absence of an overhaul manual, as respondent would have had insufficient data for the work to be done, and that cut-away drawings would not be a valid substitute.

Mr. John Feyler testified that he worked on the blower unit, inspected it, did final testing and signed the release forms. He stated that he had technical data available to him in the form of blueprints and engineering drawings Exh R-2. He conceded that the documents that he had did not supply procedures for disassembly or re-assembly, nor inspection procedures; and further, that Electro-Mech had not been furnished any directives specifying what parts in the blower were to be replaced during an overhaul as opposed to a repair. In fact it was acknowledged by the witness that he had not seen an overhaul manual for the blower unit until the date of this trial. Lastly, Mr. Feyler, agreed that, by signing the release tag, Exh C-4, such would represent to someone receiving the unit that the overhaul had been done in accordance with Rio Airways maintenance manual and that, under respondent's own procedures, it would represent work as done in accordance with technical data of Rio Airways.

Additional testimony offered by the parties, i.e., that of Mr. Lym Padmos. the deposition of Mr. Williams, does not add any evidence affecting the outcome of this proceeding, thus it need not be discussed.

The evidence by a clear preponderance establishes that respondent undertook to overhaul the blower unit for Rio Airways at a time when respondent did not have available an appropriate overhaul manual, or such other adequate technical data as would assure that the work was correctly and properly accomplished. Rio Airways did not have a manual - as none had as yet been issued by the manufacturer -, nor did Rio ever supply respondent with any technical data pertaining to this work. Nevertheless, it is established that respondent did accept the unit for overhaul, worked on it and ultimately executed a serviceable part tag, in such form, knowing that the wording of the tag would represent to anyone receiving the unit that the work had been done under procedures, instructions and data approved for use by Rio Airways, when in fact respondent knew Rio had not furnished to respondent any such data or manual. The statement on the serviceable tag is a material statement. At the time Mr. Feyler, on behalf of respondent, executed such he knew the import of what he was signing and that it was false. I find and hold, therefore, that by performing work on the blower unit

respondent did so in violation of the charged provisions of Parts 43 and 145 FARs and particularly, and most significantly, in violation of Section 43.12(a)(1) FARs, which prohibits making intentionally false entries in records or reports required or to show compliance with Part 43 FARs.

The issue of appropriate sanction does not require extended discussion in light of the circumstances established herein. In my view, respondent's determination to work on the Lucas generators, based on its professed reliance upon the term "preventive maintenance", was a deliberate misreading of the Regulations and merely a subterfuge resorted to to provide a color of legality for the respondent's actions. As discussed above, respondent knew that Rio had not supplied either a manual, or technical data and that even the manufacturer could not, at the time, furnish an overhaul manual. Nonetheless, respondent undertook to perform work on the Electromech blower. Lastly, and most egregiously, respondent executed a document - the serviceable part tag -knowing that others would rely upon it and its representation as to the basis of the work done, and knowing that such representation was false.

The Board has held that a single instance of intentional falsification can support revocation. Herein, however, not only is there shown falsification but a course of conduct which to me demonstrates respondent's lack of care, judgement and a disregard or contempt for the FARs under which respondent is certified. I find, therefore, that safety in air commerce and transportation and the public interest therein mandate revocation of respondent's Repair Station Certificate. And I so hold.

ORDER

IT IS THEREFORE ADJUDGED AND ORDERED THAT:

(1) Complainant's Order of Revocation, the complaint herein, be and it hereby is, affirmed.

(2) Respondent's Repair Station Certificate No. S03-69, and any other repair station certificate held by respondent, be and hereby are revoked.

(3) Respondent shall surrender his certificate(s) by personal delivery to or by placing in the U.S. mail, postage prepaid and properly addressed to the Administrator FAA or his designee said Certificate(s) on or before the effective date of this order.

IOP

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To

Part 13 Formal Complaint

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

In the Matter of: EMPIRE AIRLINES, INC.
FAA Order No. 2000-13
Docket No. CP98NM0011
Served: June 8, 2000

DECISION AND ORDER[1[1]]

Respondent Empire Airlines is appealing from Administrative Law Judge Burton S. Kolko's written initial decision[2[2]] issued on September 3, 1999. The law judge held that Empire violated 14 C.F.R. §§ 43.13(a)[3[3]] and 121.379(b)[4[4]] when the left

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[1[1]] The Administrator's civil penalty decisions are available on LEXIS, Westlaw, and other computer databases. They are also available on CD-ROM through Aeroflight Publications. Finally, they can be found in Hawkins's Civil Penalty Cases Digest Service and Clark Boardman Callaghan's Federal Aviation Decisions. For additional information, *see* 65 Fed. Reg. 1654, 1671 (January 11, 2000).

[2[2]] A copy of the law judge's written initial decision is attached.

[3[3]] Section 43.13(a) of the Federal Aviation Regulations provides in pertinent part:

> Each person performing maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller or appliance shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the Administrator except as noted in § 43.16.

14 C.F.R. § 43.13(a).

[4[4]] Section 121.379(b) of the Federal Aviation Regulations provides:

> A certificate holder may approve an aircraft, airframe, aircraft engine propeller or appliance for return to service after maintenance, preventive maintenance, or alterations that are performed under paragraph (a) of this section. However, in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator.

14 C.F.R. § 121.379(b). Section 121.379(a) provides in pertinent part that "A certificate holder may perform or it may make arrangements with other persons to perform maintenance, preventive maintenance, and alterations as provided in its continuous airworthiness maintenance program and its maintenance manual." 14 C.F.R. § 121.379(a).

engine mount[5][5] of Empire's Fairchild F-27F aircraft was repaired in a manner not specified by either the Fairchild Structural Repair Manual (SRM) or Overhaul Manual (OM). The law judge determined that a $5000 civil penalty for those violations was appropriate. For the reasons set forth below, Empire's appeal is denied.[6][6]

During the summer of 1997, Empire Airlines requested that the FAA extend the time before overhaul for the engine mounts for its Fairchild F-27F aircraft, N222DG. (Tr. 8, 26; Complainant's Exhibit 5.) Larry Richards, the FAA principal maintenance inspector (PMI) assigned to Empire, requested that Empire provide him with the maintenance records for that aircraft's engine mounts. (Tr. 9) While reviewing one of the records documenting maintenance performed by Conair Aerospace in 1996, he

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[5][5] The Fairchild F-27 Series Overhaul Manual describes the engine mount assembly as follows:

> The engine mount assembly consists of six steel tubes welded to seven fittings to form a W-shaped structure capable of supporting the power plant. The assembly is also utilized to support the engine control linkage, fire detector cable, electrical harnesses, fuel heater, and various hose and heat shield assemblies.

Fairchild F-27 Series Overhaul Manual, Engine Mount, Part Number 27-510001-1, -31, and –51, at 71-1, page 1 (Sep 1, 1967.)

[6][6] Conair Aerospace, located in Abbottsford, Canada, was performing a C check on the F-27 when the corrosion on the left engine mount was discovered. (Tr. 66.) Conair Aerospace is authorized to perform heavy checks and overhauls, and to accomplish airworthiness directives under Empire's operations specifications. (Tr. 102; *see also* Tr. 68.)

Conair employees had discovered pitting corrosion when they removed a placard that had been affixed to the motor mount. According to Empire Airlines' Terry D. Robinson, most of the pits were within the negligible range, having less than 5% penetration through the base material, but there were a couple places where it was difficult to determine whether the pitting was more extensive than that. (Tr. 68.) The defect and the repair were described as follows in the repair report dated August 15, 1997:

> Defect: Inboard and outboard support tubes found corroded where igniter warning stickers attached. ...
>
> Rectification: corrosion removed, and tubes measured and found below limits.
>
> Engine mount separated from the engine and tubes reinforced with welded repairs in accordance with AC 43.13-1A, para. 71.

noticed an entry regarding an engine mount repair indicating that the mount had corrosion beyond limits, and that it was repaired in accordance with Advisory Circular (AC) 43.13-1A, paragraph 71. (Tr. 9; Complainant's Exhibit C.) Paragraph 71 describes how to perform a welded sleeve repair.[7[7]] He questioned the appropriateness of this reference to AC-43.13-1A.[8[8]] (Tr. 9.) Consequently, he requested that Empire provide him with any data substantiating the repair. (Tr. 9.)

Subsequently, Empire's Frank James contacted the flight standards district office. Mr. James informed Inspector Richards that Empire had taken N222DG out of service and was preparing to remove and replace its left engine mount.[9[9]]

Inspector Richards flew to Midland, Texas, and observed and photographed the repaired mount that had been removed from N222DG, as well as the replacement mount.

[7[7]] Paragraph 71 of Advisory Circular 43.13-1A provides as follows:

> This repair is outlined in figure 2.5. Select a length of steel tube sleeve having an inside diameter approximately equal to the outside diameter of the damaged tube and of the same material, and at least the same wall thickness. Diagonally cut the sleeve reinforcement at a 30 degree angle on both ends so that the minimum distance of the sleeve from the edge of the crack or dent is not less than 1 ½ times the diameter of the damaged tube. Cut through the entire length of the reinforcement sleeve, and separate the half-sections of the sleeve. Clamp the two sleeve sections to the proper positions on the affected areas of the original tube. Weld the reinforcement sleeve along the length of the two sides and weld both ends of the sleeve to the damaged tube as shown in the figure. The filling of dents or cracks with welding rod in lieu of reinforcing the member is not acceptable.

[8[8]] The inspector was surprised to find this reference to AC 43.13-1A for a repair to an air carrier aircraft. (Tr. 9.) He stated further that "43.13-1A is primarily used for the general aviation community and it's used as acceptable data for minor repairs. ... [R]epairs to an engine mount as per FAR Part 43(a)[14 C.F.R. § 43.13(a)] is classified as a major repair and, although AC 43.13-1A can be used as a basis for approval, stand[ing] alone it is not normally approved data for a major repair." (Tr. 10.)

[9[9]] The aircraft operated for about 1 ½ years with the sleeve repair without any problems. (Tr. 75.)

(Tr. 15-17; Complainant's Exhibit 2.) He observed that the corroded areas of the removed left engine mount had been repaired with a "sleeve" weld. (Tr. 20, 21, 37.)

According to the Fairchild F-27 Series Overhaul Manual, when rust or corrosion is found on the engine mount, the rust should be cleaned off down to the bare metal and the surface should be inspected. "Isolated pitting less than 1/20 of tube diameter and not located in the middle third of the tube may be considered negligible." Fairchild F-27 Series Overhaul Manual, IX-15 (Nov. 15, 1986), page 3.

Regarding repairs to the engine mount, the Fairchild Overhaul Manual provides as follows:

> B. Damage Repairable By Patching.
>
> Repairs by patching to the engine mount for damage exceeding that considered to be negligible are given in the applicable sections of Civil Aeronautics Manual 18.[10[10]]
>
> C. C. Damage Repairable By Insertion.
>
> Damage to the engine mount, exceeding that repairable by patching, is repaired according to the limits given in the applicable sections of Civil Aeronautics Manual 18.
>
> D. D. Damage Necessitating Return of Mount to Manufacturer.
>
> Any damage in excess of negligible, which cannot be repaired by patching or insertion, ... necessitates return of mount to manufacturer for correction or repair.

Fairchild Overhaul Manual, F-27 Series, IX-15, (Nov. 15, 1986), at page 4.

The Fairchild F-27 Series Structural Repair Manual, similarly, provides the following instructions for repair of the engine mounts:

[10[10]] The Civil Aeronautical Manual (CAM) was superceded by Advisory Circular 43.13-1, later amended as Advisory Circular 43.13-1A. (Tr. 80.)

B. Damage Repairable By Patching.

Patch repairs in middle third of tube are not permissible. For damage exceeding that considered to be negligible repairs are accomplished as given in the applicable section of Federal Aviation Agency publication AC 43.13-1.

C. Damage Repairable By Insertion.

... Damage to the engine mount exceeding that considered to be negligible or repairable by patching is repaired according to the limits given in the applicable section of Federal Aviation Agency publication AC 43.13-1.

D. Damage Necessitating Replacement.

Any damage in excess of negligible, but in such a position that it cannot be repaired by patching or insertion indicates that engine mount replacement is necessary. The engine mount must also be replaced if any damage exists which is beyond the limits or repair by patching or insertion ....

Complainant's Exhibit 4, Fairchild F-27 Series, Structural Repair Manual, IX-4 (Oct. 15, 1978), at page 17.

Thus, neither the Fairchild Overhaul Manual nor the Structural Repair Manual specify that a "sleeve" weld is an allowable repair for the engine mount.

Terry Robinson, Empire's customer coordinator in 1996,[11[1]] testified that he had seen the damage before the repair and that the damage was in the middle third of the tube. (Tr. 65, 75, 81.)[12[12]] Mr. Robinson testified further that Conair used the sleeve repair because the damage was in the middle third of the tube, where patching was prohibited. (Tr. 75.)

[11[1]] In that position, Mr. Robinson served as a liaison between Conair Abbottsford and Empire Airlines. At the time of the hearing, he was Empire's Director of Maintenance.

[12[12]] Inspector Richards explained that the documentation for this repair did not specify where the damage was. However, he did observe that the repair extended into the middle third of the tube. (Tr. 58, 59.)

The parties introduced evidence on the issue of whether a sleeve repair is a type of patch repair, or whether sleeve and patch repairs[13][13] are separate procedures. Inspector Richards testified that there is a significant difference between a welded patch repair and a welded sleeve repair. He explained that the welded patch repair is a much less aggressive repair than the welded sleeve repair. (Tr. 21.) He testified that there were too many variables involved for him to be able to give an opinion regarding whether a welded sleeve repair is stronger than a patch repair. (Tr. 53-54.)

Terry Robinson, in contrast, testified that a sleeve repair is stronger than a patch repair because a sleeve repair encapsulates the tube, while a patch merely reinforces the side of the tube on which the patch is welded. (Tr. 73-75.) Harold Martin, an engineer who worked for Fairchild from 1947 to 1971 and then again from 1978 until his retirement in 1984, testified that a sleeve repair is a patch repair and that a sleeve repair is stronger than a patch repair as described in AC 43.13. (Tr. 93.) Mr. Martin testified further that he believes that Fairchild intended to categorize both patch and sleeve repairs as patches. (Tr. 94.)

While the Fairchild F-27 Series Overhaul and Structural Repair Manuals do not specify that a sleeve repair is an appropriate repair for the engine mount, the manufacturer's manuals for the Fairchild FH-227, in contrast, do provide for engine mount sleeve repairs. (Tr. 44, 45, Respondent's Exhibit 1.)[14][14] One type of engine mount may be used on both the Fairchild F-27F (N222DG is a Fairchild F-27F) and the

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[13][13] The directions for performing a sleeve repair are contained in AC 43.13-1A, paragraph 71, while directions for the performance of a welded-patch repair are set forth in AC 43.13-1A, paragraph 73. (*See* Complainant's Exhibit 3.)

[14][14] Inspector Richards testified also that another manufacturer, Fokker, permits sleeve repairs on the engine mounts for the Fokker F-27. (Tr. 44-45.)

Fairchild FH-227. (Complainant's Exhibit 8; Tr. 44.) Empire argued at the hearing that if the sleeve repair is approved for the Fairchild FH-227, then it must also be approved for the Fairchild F-27F because the two aircraft may use the same engine mount.

The law judge held that Empire violated Sections 43.13(a) and 121.379(b) of the Federal Aviation Regulations. He concluded that the overhaul and structural repair manuals permitted only two methods of repair – patching and insertion -- for non-negligible damage to the engine mount on a Fairchild F-27 series aircraft. He held that if there is any damage beyond the criteria for patching or insertion repairs then engine mount replacement is required under the manufacturer's manuals. (Initial Decision at 3.) He held further that these manuals do not provide for sleeve repairs, and sleeve and patch repairs are "materially different." (Initial Decision at 4.) The law judge also rejected Empire's argument that the Fairchild F-27 series overhaul and structural repair manuals' silence regarding sleeve repairs can be regarded as tacit approval. (Initial Decision at 4.)

Empire argued at the hearing that reliance upon AC 43.13-1A was proper under the FAA Inspector's Handbook, FAA Order No. 8300.10. The Inspector's Handbook provides this guidance to FAA inspectors:

> NOTE: AC 43.13-1, as amended, may be used as approved data, only if the following three prerequisites are met:
>
> - • The user has determined that it is appropriate to the product being repaired/altered;
> - • The user has determined that it is directly applicable to the repair/alteration being made;
> - • The user has determined that it is not contrary to manufacturer's data.

(Tr. 105; Respondent's Exhibit 3.) The law judge rejected this argument. He wrote:

> Respondent's further contention that the FAA Inspector's Handbook allows AC 43.13-1 to be used as approved data if appropriate, applicable, and not

> contrary to manufacturer's data ... merely begs the question, since whether the sleeve repair performed by Respondent's contract repair station meets these conditions is a central issue in this case.

(Initial Decision at 4.)

The law judge also rejected Empire's argument that it should have been able to use a sleeve repair for the F-27F because sleeve repairs are permissible for the FH-227, which uses the same motor mount as the F-27F. The judge explained that the "apparent interchangeability" of the engine mounts on the F-27 and the FH-227 does not change the fact that the Fairchild F-27 series overhaul and structural repair manuals do not allow for sleeve repairs to the engine mount for repair of corrosion. (Initial Decision at 4.)[15[15]] The judge stated that he had to presume that there was a logical reason why the F-27 series manuals did not provide for sleeve repairs and why the FH-227 manuals did permit such repairs. He wrote:

> Respondent was obligated to follow the terms of governing manuals. If dissatisfied or unclear about the terms its remedy was to attempt to amend the manuals or gain permission from an FAA designated engineering representative ("DER")[16[16]] to make the desired repair. (Tr. 10-11), not to follow the procedures set out in a manual expressly applicable to a different aircraft.

(Initial Decision at 4.)

The law judge assessed a $5000 civil penalty against Empire for these violations.

On appeal, Empire argues that it was entitled to rely upon AC 43.13-1A as approved data for the sleeve repair of the engine mount of its Fairchild F-27F. This argument is rejected.

[15[15]] The law judge mistakenly referred to the FH-227 as the Fokker FH-227. However, the FH-227 is manufactured by Fairchild, not Fokker. *See* Respondent's Exhibit 1.

[16[16]] A DER is a FAA-designee with the authority to approve data on behalf of the Administrator. (Tr. 10-11.) There was no evidence in this case that a DER had approved any data that would permit the use of a sleeve repair for Empire's N222DG.

Under Section 121.379, a certificate holder may approve an aircraft for return to service after maintenance performed by another person as provided in the certificate holder's continuous airworthiness maintenance program and in its maintenance manual. However, "in the case of a major repair or major alteration, the work must have been done in accordance with technical data approved by the Administrator." 14 C.F.R. § 121.379(b). There is no dispute in this matter that the left engine mount repair constituted a major repair (Tr. 63), and thus, Empire was obligated to use approved data when repairing the corroded engine mount.

It is uncontested in this case that the Fairchild F-27 series overhaul and structural repair manuals contained approved data for a major repair of a Fairchild F-27F aircraft, such as Empire's N222DG. As Inspector Richards explained, AC 43.13-1A is not normally considered to be approved data for a major repair, but may be used as a basis for approval. [17[17]] (Tr. 10.) The patch and insertion repairs set forth in AC 43.13-1A were approved data for a major repair of this aircraft because both were referenced in the Fairchild F-27 series overhaul and structural repair manuals. In contrast, neither the Fairchild F-27 series overhaul nor the structural repair manual referenced the description of the sleeve repair set forth in AC 43.13-1A. Also, neither Empire nor Conair sought the approval of a DER for a sleeve repair of N222DG's left engine mount. Hence, the sleeve repair set forth in AC 43.13-1A cannot be considered "approved data" for a major repair of the Fairchild F-27F aircraft in this case.

The fact that a sleeve repair may be approved data for the repair of one model aircraft (*i.e.*, the Fairchild FH-227) does not mean necessarily that a sleeve repair is

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[17[17]] Likewise, it is stated in the FAA Inspector's Handbook that AC 43.13-1, as amended, may be used on an individual basis to obtain approval. (Respondent's Exhibit 3, paragraph 1.D(2)).

approved for the same type of damage to another aircraft (*i.e.*, the Fairchild F-27F). The Fairchild F-27 and the Fairchild FH-227 may be similar aircraft, and they may use the same motor mount. However, there may be subtle differences that would make a welded sleeve repair appropriate for the FH-227 and not for the F-27F. That might be the reason that the Fairchild FH-227 manuals permit welded sleeve repairs of the motor mount, but the Fairchild F-27 series manuals do not. Whether there are indeed differences between the aircraft that would explain why a welded sleeve repair is approved data for the FH-227, but not the F-27F, cannot be determined on this record and is not a question that needs to be addressed on this appeal. Regardless of the similarity between the aircraft, aviation safety demands that maintenance personnel not assume that approved data for the repair of one specific aircraft can be used as approved data for a major repair on a different aircraft.[18[18]]

According to the FAA Inspector's Handbook, FAA Order No. 8300.10 chg. 10, repair data may not be considered as "approved" unless the user has determined first that the data is not contrary to the manufacturer's data. Referring to a dictionary definition of "contrary," Empire argues that "the term 'contrary' does not simply imply absence from the manual" but instead, "means that the repair must be opposite or all together different from the repair described in the manual." (Appeal Brief at 6.) Using a sleeve repair was indeed contrary to the structural and overhaul manuals. Under these manuals, if the damage exceeded the negligible level and could not be repaired by patching or insertion, then it would be necessary to return the mount to the manufacturer. *See* Fairchild F-27

[18[18]] It is possible, considering that the Fairchild F-27F and the FH-227 may use the same motor mount, that a DER might have approved a welded sleeve repair on behalf of the Administrator for a Fairchild F-27F engine mount if Empire had sought such approval. However, there is no way to resolve that question on this record.

Series Overhaul Manual, 71-1, Paragraph 5D (Nov. 15, 1986); Fairchild F-27 Series Structural Repair Manual, 54-2, Paragraph 13D (October 15, 1978) *included in* Complainant's Exhibit 4; (Tr. 49.) Patching was not an option because the damage extended into the middle third of the tube.[19[19]] Performing a welded sleeve repair is distinguishable from an insertion[20[20]] or returning the mount to the manufacturer for replacement.

Empire argues that it was not precluded from using a sleeve repair because the manual did not specifically prohibit the use of sleeve repairs. The law judge correctly found that this argument was not compelling. The manufacturer's manuals stated which repairs were appropriate. It is unreasonable to expect the manufacturer to have listed all of the repairs that would not be appropriate for any given damage.

Empire argues that Complainant failed to prove its case because Complainant did not call an expert witness. Empire points to the case of In the Matter of Florida Propeller and Accessories to support its argument. In that case, the Administrator held that Complainant failed to introduce expert testimony on the critical issue of whether a propeller could wear down a certain amount in a certain length of time. FAA Order No. 97-32 at 9 (October 8, 1997). The issues involved in the case at hand do not require such expert testimony. The question here was whether Conair used the approved repairs in the manuals, and the evidence indicated that it did not.

[19[19]] Mr. Robinson testified that the damage was in the middle third of the engine mount. (Tr. 75.)

[20[20]] Inspector Richards testified that a repair by insertion requires the use of a jig fixture. (Tr. 36.)

Empire argues that the law judge's initial decision in In the Matter of Lockheed Aeromod Center, FAA Case No. CP 94WP0028, supports its position in this case. In that case, the law judge held that Complainant had failed to prove by the preponderance of the evidence that the respondent repair station had not used the methods, techniques and practices acceptable to the Administrator because the respondent had not followed its procedures manual. The law judge noted that Complainant had been unable to cite any section of the procedures manual that respondent had failed to use, but instead pointed to an inapposite requirement. 1995 FAA LEXIS 308 at *22-24 (March 3, 1995). As already explained, Complainant did prove in the case at hand that Empire Airlines used a procedure not permitted by the manufacturer's overhaul and structural repair manuals. Moreover, it should be noted that initial decisions of the law judges, while useful, have no precedential value unless appealed to, and affirmed by, the Administrator, and are not binding in other cases. 14 C.F.R. § 13.233(j)(3).[21[21]]

Empire also argues that it was entitled to rely on the services performed by Conair. In support of this proposition, Empire cites to the law judge's decision in In the Matter of Empire Airlines, FAA Case No. CP94NM0064, 1995 LEXIS 399 (March 3, 1995), *appeal withdrawn,* FAA Order No. 95-7, 1995 FAA LEXIS 362 (May 5, 1995). In that decision, the law judge held that the evidence failed to prove that either the wheel in question was improperly greased when installed by a repair station after an overhaul,

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[21[21]] This regulation provides:

> A final decision and order of the Administrator after appeal is precedent in any other civil penalty action. Any issue, finding or conclusion, order, ruling or initial decision of an administrative law judge that has not been appealed to the FAA decisionmaker is not precedent in any other civil penalty action.

or that improper greasing caused the wheel bearing to fail on takeoff and separate from the aircraft. The law judge held further that even if Complainant had proven that the wheel bearing had been improperly greased or that the improper greasing had caused the incident, Empire was not liable. The law judge explained that Empire should not be held responsible for the separation because Empire reasonably relied upon a FAA-certificated repair station to do the repair, and Empire had no reason to suspect that the repair station had not accomplished the task properly.

As noted above, an initial decision that has not been affirmed on appeal to the Administrator lacks precedential value. Moreover, unlike the cited initial decision, in the case at bar Empire had reason to know of the improper repair by Conair. While no Empire employees worked on the C-check, Empire employees Terry Robinson, the customer coordinator, and David Hartson, the director of quality assurance, were at the Conair facility while the C-check and repair were accomplished. (Tr. 55-56, 65, 99, 100.) Mr. Robinson acknowledged seeing the damage prior to the repair and the repair itself. (Tr. 81.)[22[22]] Moreover, Conair's Mohammed Aslam, who signed the airworthiness

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[22[22]] While not entirely clear, it appears that Empire's employees participated in the decision to use a sleeve repair. Mr. Robinson, who saw the damage prior to the repair, testified comparing the patch to a sleeve repair:

> [W]hen we look at the engine mount and the torsional loads and all of the things that it has to go through in supporting that engine solely in flight, in turbulence, and all of the other things that it goes through, it was our decision that a – that we would err on the side of what is the most safe, in our opinion what was the most safe, what was the most structurally sound repair that we could put on that.

(Tr. 75.)

He also testified:

> When we added up all the information and looked at that, if we would have used strictly a patch repair it would have tailed into the center third of that motor mount and upon our reasoning is that if the manufacturer said he didn't want it there then it tailed into there

release for this aircraft, was acting on Empire's behalf.[23][23] Empire specifically authorized

Mr. Aslam to release aircraft for flight after certain required inspections, such as the one involved in this incident.

It is also noteworthy that in Empire Airlines' Airworthiness Release/Inspection Authorization Form (Complainant's Exhibit 10), authorizing Mr. Aslam to perform inspector and airworthiness release duties, *provides* that: "All authorized personnel are responsible to the Director of Quality Assurance when performing inspections." Thus, when Empire authorized Mr. Aslam to approve the aircraft for return to service, it retained the ultimate responsibility for proper approval. In any event, the repair performed by Conair was described accurately in the maintenance records. If Mr. Robinson or Mr. Hartson had reviewed the paperwork and the manuals, they could have determined that a major repair based upon unapproved data had been made. Hence, it is reasonable to hold Empire accountable for the return to service of this aircraft that had undergone a major repair not based upon approved data.

Air carriers have the duty to perform their services with the highest possible degree of safety in the public interest. 49 U.S.C. § 44702(b)(1)(A); In the Matter of

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> then that would have, you know, created problems that he didn't want us to do and that's why we chose to use the sleeve repair.

(Tr. 75-76.) Certainly, if Empire's employees participated in the decisionmaking process that resulted in the use of the sleeve repair, then Empire should be held responsible for the failure to use approved data for this major repair contrary to 14 C.F.R. § 121.379(b).

[23][23] As Inspector Richards explained, when Mr. Aslam approved the aircraft for return to service after the repair, he was acting for Empire Airlines. (Tr. 39.)

USAIR, FAA Order No. 92-70 at 4 (December 21, 1992).[24][24] While under the regulations, an air carrier can arrange with other persons to perform maintenance on its aircraft, the carrier cannot delegate away its primary responsibility for the airworthiness of its aircraft. 14 C.F.R. §§ 121.363(a)(1) and (b),[25][25] 121.379(a). Allowing an air carrier to delegate its primary responsibility for the safety of its aircraft would not serve the public interest.[26][26] While there may be certain limited circumstances in which an air carrier might not be held responsible for maintenance and inspections performed by a contractor or vendor, no such reasons exist in this case.

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[24][24] In that case, the Administrator held that regardless of whether the pushback operator was USAir's agent or an independent contractor, the Part 121 carrier was still responsible for the pushback operator's acts or omissions because the duty of care to protect others or their property is non-delegable. FAA Order No. 92-70 at 4.

[25][25] Section 121.363 provides in pertinent part:

> (a) (a) Each certificate holder is primarily responsible for the
>
> (1) (1) The airworthiness of its aircraft, including airframes, aircraft engines, propellers, appliances and parts thereof; ...
>
> (b) (b) A certificate holder may make arrangements with another person for the performance of any maintenance, preventive maintenance, or alterations. However, this does not relieve the certificate holder of the responsibility specified in paragraph (a) of this section.

14 C.F.R. § 121.363(a)(1) and (b).

[26][26] *See also* FAA Order No. 92-70 at 4, *citing* W. Prosser and W. Keeton, The Law of Torts § 71 (5th ed. 1984) (the non-delegable character of a duty is based on a finding by a court that the duty is so important to the community that it should not be transferred to another.) Although this is not a case in tort, the Administrator may look to tort principles for guidance.

Based upon the foregoing, Empire's appeal is denied, and the law judge's initial decision assessing a $5,000 civil penalty against Empire is affirmed.[27[27]]

JANE F. GARVEY, ADMINISTRATOR
Federal Aviation Administration

Issued this 8th day of June, 2000.

[27[27]] Unless Respondent files a petition for review with a Court of Appeals of the United States under 49 U.S.C. § 46110 within 60 days of service of this decision, this decision shall be considered an order assessing civil penalty. *See* 14 C.F.R. §§ 13.16(b)(4) and 13.233(j)(2)(2000.)

IOP

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To

Part 13 Formal Complaint

SERVED: October 15, 1993

NTSB Order No. EA-3999

UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

Adopted by the NATIONAL TRANSPORTATION SAFETY BOARD
at its office in Washington, D.C.
on the 14th day of October, 1993

DAVID R. HINSON, Administrator, Federal Aviation Administration, Complainant, v. MISSOURI AEROTECH INDUSTRIES, INC., Respondent.	)	Docket SE-13249

OPINION AND ORDER

The Administrator has appealed from the oral initial decision issued by Administrative Law Judge William R. Mullins at the conclusion of an evidentiary hearing held in this case on September 2, 1993.[1] In that decision, the law judge found that the Administrator had established some of the factual allegations and regulatory violations recited in the emergency order revoking

[1] Attached is an excerpt from the hearing transcript containing the oral initial decision.

respondent's repair station certificate, and modified the sanction from revocation to the imposition of a $1250 civil penalty. For the reasons discussed below, we grant the Administrator's appeal and affirm the emergency order of revocation.

In the six-page emergency order of revocation (a copy of which is attached to this opinion and order), the Administrator essentially alleged that, over a two-year period, respondent overhauled or repaired, and then returned to service, 100 navigational antennas when it did not have available the appropriate technical data (e.g., data issued by the manufacturer or approved by the Administrator) necessary to accomplish that work. In addition, it was alleged that respondent had failed to maintain adequate work records in that several work orders were either missing or unaccounted for. The Administrator alleged violations of 14 C.F.R. 43.13(a), 43.13(b), 145.51, 145.53, 145.55, 145.57(a), 145.57(b), and 145.61.[2]

The factual circumstances underlying the alleged regulatory violations fall into six general categories. The evidence, the law judge's findings, and our conclusions with regard to each category are discussed separately below.

King ADF antennas, KA42B. Exhibits A-3 through A-11 establish that respondent repaired or overhauled nine King KA42B ADF antennas. The Administrator's sole witness in this case

[2] These regulations are set forth in an appendix to this opinion and order.

(Safety Inspector Gary Benson) testified that there is no technical data available from the manufacturer of the antenna, or approved by the Administrator, which allows repairs to be made to these antennas. (Tr. 24, 28-9, 61, 63.) The Administrator also introduced into evidence a letter from the manufacturer addressed to another FAA inspector confirming that the antennas are not field repairable, although they can be tested in accordance with a Service Memo. (Exhibit A-14). In response, respondent's primary witness and general manager (Thomas Coffee) testified that his repair station did possess installation and maintenance manuals for these antennas,[3] and that the manuals did not state whether the unit was repairable. (Tr. 98-100.) He did not, however, produce the manuals themselves.

KA44B. Exhibits A-15 through A-63 indicate that respondent overhauled or repaired 46[4] King KA44B ADF antennas with serial numbers above 24275, by adjusting the amplifier board. In support of his position that this work was also performed without the requisite technical data, the Administrator introduced into evidence a Service Aid published by the manufacturer of the antenna stating that antennas above serial number 24275 are

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[3] See Exhibit R-1, an internal maintenance manual log sheet, listing relevant manuals to which respondent subscribed. (Tr. 98.)

[4] Although the Administrator introduced 49 work orders pertaining to this type of antenna, two do not identify the serial number as being within the class of antennas to which repairs are prohibited (Exhibits A-27 and A-38) and one does not list any prohibited repairs (Exhibit A-63). (Tr. 69-70.) Accordingly, only 46 work orders identify potential violations on their face.

"sealed" and "cannot be repaired." (Exhibit A-64.) Although the Administrator conceded that a Service Aid is not a mandatory document which requires compliance, it was argued that the manufacturer's statement in that document that the antennas cannot be repaired showed that no manufacturer's data pertaining to repair of those antennas would exist. (Tr. 65, 136-7.)

In reply, Mr. Coffee contended that the manufacturer's manuals allowed for repairs to these antennas without reference to serial numbers, but he did not produce any such manuals. He also testified that the manufacturer had recently informed him that it was "possible" to make field repairs and adjustments to antennas above serial number 24275, and introduced evidence purporting to show that another repair station quoted him a price to repair an antenna above that serial number. (Tr. 106; Exhibit R-2.)

The law judge did not address the persuasiveness of Mr. Coffee's testimony. Rather, he concluded that the Administrator had not met his burden of proof with regard to the two sets of King antennas because the Administrator presented no published "hard data" to show that the work was not done in accordance with appropriate technical data. (Tr. 160-1.) He stated, "[i]f there's technical data out there, that's . . . mandatory on these folks, the burden of proof . . . is on the Administrator to bring that forth, to show that they weren't worked on in compliance with that data." (Tr. 161.) The law judge found that neither the letter to the FAA inspector (regarding the KA42B antennas)

nor the non-mandatory Service Aid (regarding the KA44B antennas) constituted such proof. We disagree.

In our judgment the Administrator presented sufficient prima facie evidence that no technical data was available with regard to repairing the King antennas. In order to overcome the Administrator's evidence, respondent had only to show evidence of the existence of the technical data alleged by the Administrator to be non-existent. However, respondent presented no such evidence.[5] Even assuming the repair station's former chief inspector (Ronald Roscoe)[6] removed some of the repair station's manuals from the premises when he abruptly departed from the company at about the time of the FAA's April, 1993, inspection -- as Mr. Coffee suggested (Tr. 132-3) -- this should not have presented an insurmountable barrier to respondent's procuring other copies of relevant technical data in order to prove that such data exists.

Accordingly, we find that the Administrator established 55 violations of 14 C.F.R. 43.13(a), 145.51, 145.53, and 145.57,[7]

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[5] Even assuming, as Mr. Coffee testified, that (with regard to the KA42B antennas) some sort of manuals were available and (with regard to the KA44B antennas) it is "possible" to make field repairs to the antennas, we do not view this as establishing that the specific repair work here at issue was accomplished in accordance with published or approved technical data, or even that such data exists.

[6] Mr. Roscoe's was the "authorized signature" on each of the 100 work orders at issue in this case.

[7] The Administrator alleged, in addition to these regulations, violations of 14 C.F.R. 43.13(b) and 145.55. However, regarding section 43.13(b), we agree with the law judge that it does not automatically follow from the fact that work

with regard to the two sets of King antennas.

Collins 137X-1 fixed loop antennas. Respondent's records indicate that it repaired a Collins 137X-1 antenna which "failed [an] isolation test," by disassembling it and aligning the isolation circuit to the manufacturer's specifications. (Exhibit A-65.) It is undisputed that this work is contrary to the manufacturer's instructions, which state that the antenna should be replaced in such a case, and contain no data for repairing the antenna. (Exhibit A-66.) Indeed, Mr. Coffee testified that it is not possible to disassemble this unit, and opined that Mr. Roscoe (who signed the work order) must have inadvertently written incorrect information on the work order. (Tr. 111.)

The law judge concluded that Mr. Roscoe had either falsified the work order or made a mistake in filling it out, and that because falsification would not have been within the scope of Mr. Roscoe's employment, the company should not be held liable for that act. (Tr. 162-3.) While we do not necessarily subscribe to this reasoning, we will uphold the law judge's finding that no violation of the cited regulations occurred, because it is based in part on a credibility finding that the prohibited repair work

(..continued)
was not done in accordance with published technical data that the item worked on was not in a condition at least equal to its original or properly altered condition. We note that the Administrator presented no evidence on this point, and the assertion in his appeal brief that antennas were returned to respondent for warranty repairs at a higher than normal rate is completely unsubstantiated in the record. Further, regarding section 145.55, although the law judge found a violation of that section (apparently based on a finding that respondent lacked relevant manuals at the inspection), no testimony was elicited on the record to support this charge.

was not actually performed.[8]

Collins 137A series (-6A, -5, -4, -6) fixed loop antennas. Respondent has not appealed from the law judge's findings that the repair work performed on four Collins 137A antennas was not performed in accordance with approved technical data in that the manufacturer's overhaul manual clearly states that these antennas are sealed units and cannot be repaired. (Exhibits A-67 through A-70; Exhibit A-71.)[9]

Collins ANT-60 ADF antennas. Exhibits A-72 through A-104 indicate that respondent repaired 33 ANT-60 ADF antennas, primarily by removing and replacing the amplifier board. It is undisputed that the manufacturer's maintenance manual contains no data on repairs, and states that defective antennas are to be returned to a Collins Avionics Service Center for repair. (Exhibit A-105.) In defense of these alleged violations, Mr. Coffee testified that the manufacturer sells amplifiers for this antenna for repair purposes, and that another repair station (Avionics Specialist, Inc.) has recently repaired some antennas of this make and model for respondent. (Tr. 118, 122; Exhibit R-5.) In rebuttal, Inspector Benson testified that, although not a Collins Service Center, Avionics Specialist is authorized by the

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[8] We note that respondent was not charged with falsification, but only with performing repairs without the appropriate technical data.

[9] Although respondent introduced a manufacturer's Service Bulletin giving instructions for the replacement of the connector to reduce corrosion, there is no evidence that the repairs evidenced by the work orders at issue here were limited to this connector replacement.

FAA to perform repairs on this antenna. (Tr. 146-7.)

It is unclear whether the law judge's findings of violations were based on respondent's use of Avionics Specialist to repair some antennas, or based on respondent's own repair of 33 of these antennas. We affirm the findings of violations based on the latter basis. Not only is respondent's recent use of Avionics Specialist outside the parameters of the complaint in this case, but we see no violation inherent in that use since the testimony established that, unlike respondent, Avionics Specialist has approval from the FAA to repair these antennas.

Collins 437X radio altimeter antennas. Exhibits A-106 through A-109 establish that respondent removed and replaced the connector on four Collins 437X antennas. It is undisputed that the manufacturer's instruction manual states that the connector "is an integral part of the antenna and cannot be replaced," and that if the antenna fails any test it should be replaced. (Exhibit A-110.) Mr. Coffee conceded that his repair station had no approved data for this repair, but demonstrated at the hearing that the connector could indeed be replaced by removing four screws. (Tr. 125.) He contended that it is "common knowledge in the industry that [the connectors] can be replaced." (Tr. 138.)

The law judge found the regulatory violations established for this set of allegations, noting, "[the fact] that apparently everyone in the business does it . . . does not relieve this corporation, and Mr. Roscoe of their responsibility for doing that when the manual . . . says it can't be done." (Tr. 164.)

We agree.

Missing or unaccounted for work orders. Inspector Benson testified that, upon inspection of respondent's records in May 1993, he discovered that a number of work orders were either missing or unaccounted for. Specifically, he found that, in ten instances, work order numbers for work which was logged as completed and "shipped," were missing from respondent's records. In addition, he found that seven work orders were completely unaccounted for. (Tr. 56-7; Exhibit A-111.) At the hearing Mr. Coffee produced some of the missing work orders,[10] and testified that it had been Mr. Roscoe's responsibility as the Chief Inspector to maintain the work order log book, and that he (Mr. Coffee) had no reason to believe that the records were not in order. (Tr. 129-30.)

In dismissing the recordkeeping allegations, the law judge was apparently under the impression that respondent had produced all of the missing work orders. (Tr. 165.) However, since that is not the case, we find that, with regard to the four missing work orders,[11] the Administrator established a violation of section 145.61.

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[10] The package contains six of the missing work orders, and five of the unaccounted for work orders. Accordingly, four work orders are still missing and two remain unaccounted for.

[11] We do not find any violation, however, with regard to the work order numbers which are unaccounted for because there is no indication that they represent any work that was actually done. The cited regulation requires only that a repair station maintain records of "all work that it does." 14 C.F.R. 145.61.

Respondent did not appeal the violations upheld by the law judge, or the imposition of a $1250 civil penalty. The only issues before us are the Administrator's appeal of the law judge's dismissal of many of the alleged regulatory violations, and the modification of the sanction from revocation to a civil penalty.

Having found, as discussed above, that respondent repaired and approved for return to service 96 navigational antennas without appropriate technical data, and that respondent failed to keep four required records,[12] the only issue remaining for our consideration is the appropriate sanction for these violations. In modifying the revocation sought by the Administrator to a $1250 civil penalty, the law judge cited the fact that Mr. Roscoe, who signed all of the work orders at issue as respondent's chief inspector, was the "bad actor." He concluded that, although the corporation should be held responsible for its employee's actions, it "should not be put out of business, just because one individual has fouled up."[13] (Tr. 168.)

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[12] We view the recordkeeping violation as de minimis with respect to determining the appropriate sanction.

[13] The law judge also mentioned he thought it was "unusual" that Inspector Benson had not discovered these violations during his regularly scheduled twice-yearly inspections, and suggested that he had "let[] them go through five or six inspections" before seeking revocation. (Tr. 167.) We note, however, that there is no indication in the record that Inspector Benson became aware of the violations here at issue during any of his previous regular "spot" inspections.

Even though Mr. Coffee appeared to be suggesting, during some parts of his testimony, that the unauthorized antenna repairs were performed without his knowledge or approval and that Mr. Roscoe alone bore responsibility for those repairs,[14] Mr. Coffee's testimony as a whole established quite the opposite. Far from indicating that he, as respondent's General Manager, disapproved of the unauthorized repairs, Mr. Coffee attempted to defend the propriety of those repairs, in effect endorsing and ratifying Mr. Roscoe's actions. Mr. Coffee, himself an experienced former avionics technician (Tr. 89), demonstrated a detailed knowledge of many of the specific repairs at issue in this case. (See e.g., Tr. 101-4, 110-1, 118-9, 125.)

In our judgment, the unauthorized repairs cannot be characterized as discrete and unauthorized actions of an errant employee. Rather, we hold that they were performed with the implicit approval of respondent's General Manager, and under the aegis of respondent's certificate.[15]

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[14] Mr. Coffee indicated that since he was occupied with the sales and promotional aspects of the business, Mr. Roscoe "had a free hand" in the operational activities of the repair station, and was not required to seek Mr. Coffee's approval on most matters. (Tr. 96-7.) Mr. Coffee's wife, who served as President of the company, also testified that Mr. Roscoe "basically ran the shop." (Tr. 143.) Mr. Coffee also testified that Mr. Roscoe was "entirely responsible" for repairing the King KA42B antennas (Tr. 99-100), and that he had recently discovered that Mr. Roscoe and another employee -- with whom he worked closely on all his repairs -- had developed their own handwritten procedures for use in repairing specific antennas (Tr. 127; Exhibit R-6).

[15] Because we have found that the management of the respondent company knew or should have known of the inappropriate actions and repairs being performed by its employee, Mr. Roscoe, and because the company's management at least implicitly approved

Further, we agree with the Administrator that the impact on aviation safety of such unauthorized repairs is not trivial. The reliability of a repair station's work depends in large part upon its adherence to the approved techniques and practices which are set forth in published technical data. (See Tr. 29.) Mr. Coffee indicated that most of respondent's work involved repairs of navigational equipment used on corporate or commercial aircraft (Tr. 94), equipment which is clearly critical to flight safety. In view of the large number of violations established in this case, and the obvious importance of insuring the highest degree of safety in connection with maintenance performed by repair stations,[16] it is our conclusion that respondent has demonstrated a lack of qualifications to hold a repair station certificate.[17]

(..continued)
of those activities, we need not reach the question of whether the company could have been held vicariously liable for the acts of its employee.

[16] As the Civil Aeronautics Board (our predecessor agency) stated in an early case involving the revocation of a repair station's certificate, "[t]he lives and safety of persons using the aircraft depend upon the integrity of the repair station operator." Propeller Service Corp., Air Agency Certificate, 13 CAB 242, 243 (1953).

[17] The FAA's Sanction Guidance Table indicates that the appropriate sanction, per violation, when a repair station maintains or alters an article without using required technical data ranges from a maximum civil penalty ($750 to $1000) to a 30-day suspension. However, the accompanying general guidelines make clear that "[w]henever multiple violations demonstrate a lack of qualifications or reason to believe that the certificate holder may lack qualifications, a remedial sanction such as revocation or suspension pending demonstration of qualifications is appropriate." See FAA Order No. 2150.3A, Appendix 4.

ACCORDINGLY, IT IS ORDERED THAT:

1. The Administrator's appeal is granted; and

2. The emergency revocation of respondent's repair station certificate is affirmed.

VOGT, Chairman, COUGHLIN, Vice Chairman, LAUBER, HART and HAMMERSCHMIDT, Members of the Board, concurred in the above opinion and order.

APPENDIX

§ 43.13 Performance rules (general).

(a) Each person performing maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller, or appliance shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the Administrator, except as noted in § 43.16. He shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry Practices. If special equipment or test apparatus is recommended by the manufacturer involved, he must use that equipment or apparatus or its equivalent acceptable to the Administrator.

(b) Each person maintaining or altiring, or performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).

§ 145.51 Privileges of certificates.

A certificated domestic repair station may—

(a) Maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory, or part thereof, for which it is rated:

(b) Approve for return to service any article for which it is rated after it has been maintained or altered;

(c) In the case of a station with an airframe rating, perform 100-hour, annual or progressive inspections, and return the aircraft to service; and

(d) Maintain or alter any article for which it is rated at a place other than the repair station if—

(1) The function would be performed in the same manner as when performed at the repair station and in accordance with §§145.57 to 145.61;

(2) All necessary personnel, equipment, material, and technical data is available at the place where the work is to be done: and

(3) The inspection procedures manual of the station sets forth approved procedures governing work to be performed at a place other than the repair station.

However, a certificated repair station may not approve for return to service any aircraft, airframe, aircraft engine, propeller, or appliance after major repair or major alteration unless the work was done in accordance with technical data approved by the Adminstrator.

APPENDIX

§ 145.53 Limitations of certificates.

A certificated domestic repair station may not maintain or alter any airframe, powerplant, propeller, instrument, radio, or accessory for which it is not rated, and may not maintain or alter any article for which it is rated if it requires special technical data, equipment, or facilities that are not available to it.

§ 145.55 Maintenance of personnel, facilities, equipment and materials.

Each certificated domestic repair station shall provide personnel, facilities equipment, and materials at least equal in quality and quantity to the standards currently required for the issue of the certificate and rating that it holds.

§ 145.57 Performance standards.

(a) Except as provided in § 145.2, each certificated domestic repair station shall perform its maintenance and alteration operations in accordance with the standards in Part 43 of this chapter. It shall maintain current condition, all manufacturers' service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters.

(b) In addition, each certificated domestic repair station with a radio rating shall comply with those sections of Part 43 of this chapter that apply to electic systems, and shall use materials that conform to approved specifications for equipment appropriate to its rating. It shall use test apparatus, shop equipment, performance standards, test methods, alterations, and calibrations that conform to the manufacturers' specifications or instructions, approved specification, and, if not otherwise specified to accept good practices of the aircraft radio industry.

§ 145.61 Performance records and reports.

Each certificated domestic repair station shall maintain adequate records of all work that it does, naming the certificated mechanic or repairman who performed or supervised the work, and the inspector of that work. The station shall keep each record for at least two years after the work it applies to is done.

IOP

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To

Part 13 Formal Complaint

ORDER EA-2008

Adopted May 31, 1984

THURMAN S. ALPHIN, RESPONDENT

SE-4824

OPINION AND ORDER

The respondent has appealed from the initial decision issued by Administrative Law Judge Thomas W. Reilly on April 28, 1983, containing his findings and conclusions following a three-day evidentiary hearing (held on September 21 and November 9 and 10, 1982) convened in response to Board Order EA-1777 (served May 27, 1982).[1] By that order the Board granted respondent's petition for rehearing on the charge that he had violated section 43.13(b) of the Federal Aviation Regulations ("FAR", 14 CFR §43.13(b)) in connection with his return-to-service inspections of two Continental 0-200-A aircraft engines that had been overhauled in the fall of 1979 by noncertified mechanics at his repair facility.[2] In the remanded proceeding the law judge again sustained the Administrator's suspension order with a reduction in sanction from 60 to 45 days.[3] The respondent, as noted, again has appealed.[4] For the reasons discussed below we conclude that the evidence adduced by the Administrator was insufficient to establish the violation charged. We will, therefore, grant the appeal.

The specific evidentiary concern that led to the remand of this proceeding involved the testimony of the Administrator's principal witness, a Federal Aviation Administration (FAA) inspector who observed the teardowns of the two engines after a complaint was made to the FAA. We noted, in granting the rehearing petition, that (Order EA-1777 at 2):

> "The asserted deficiencies in the powerplants at issue here involved internal engine components, chiefly in the valve train, which, according to the FAA inspector, exhibited wear in excess of maximum service limits. To reach such a determination precise measurements, involving hundredths or even thousandths of an inch, must be made and compared with the specifications listed for the component in the overhaul manual for the engine. Although the FAA inspector did not himself make any such measurements on the two engines, he recorded the results of measurements taken by another mechanic during the disassembly process. In response to respondent's efforts, at the hearing, to verify the basis for inspector's determination that specific parts were out of tolerance or exceeded

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[1] A copy of the initial decision is attached.

[2] Section 43.13(b) provides as follows:

"§43.13 Performance rules (general).

* * * * * *

(b) Each person maintaining or altering, or performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance, worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness)."

* * * * * *

[3] A 45-day suspension of respondent's Inspection Authorization, predicated on his alleged violation of section 43.13(b), had been affirmed by the Board in Order EA-1675, served September 24, 1981.

[4] The Administrator has filed a reply brief opposing the appeal and urging affirmation of the initial decision.

specifications, the inspector repeatedly stated that he and the mechanic had consulted the overhaul manual.[6] Respondent's petition asserts that the inspector's testimony in this connection is contradicted by his subsequent testimony, in a state court trial, wherein the inspector stated that the manual was not available during the teardowns and that he did not know whether the mechanic had referred to the manual." (*Footnote omitted).

In response to our order the law judge held what amounted to an entirely new hearing on the complaint. As a result, the Administrator was obligated to prove anew that the engines, when torn down, exhibited deficiencies which would not have been present if the overhauls respondent signed off on had been performed in accordance with applicable standards. We find ourselves unable to conclude that the Administrator met that obligation. Moreover, in light of the fact that the law judge did not limit the scope of the hearing on remand, we find it unnecessary to address the credibility or reliability of the evidence adduced in the original hearing.

Before turning to the merits of this appeal we believe some preliminary comments concerning the initial decision on remand are warranted. As a starting point we are unable to find support for the law judge's statement that "[b]oth engines had serious operational problems continuously after the so-called overhauls" (I.D. at 6). The only alleged "continuous" problem associated with either engine in the 83 and 150 hours, respectively, that they were operated after the overhauls was the complaint that they exhibited what the owner-operator of a flying school believed was excessive vibration or roughness.[5] The evidence as to existence of any abnormal vibration was, however, highly conflicting and vigorously contested. In fact, in response to the flight school owner's complaints of vibration, respondent produced three pilot-witnesses who had flown the aircraft without observing any roughness or excessive vibration.[6] More to the point, there was testimony that *after* the overhauls both of the engines passed at least one 100 hour or an annual inspection performed by someone other than respondent.[7] The initial decision on remand's characterization of the post-overhaul condition of the engines as exhibiting ongoing "serious operational problems" thus appears, even if it refers to more than the alleged vibration complaint, to be contrary both to the evidence of record and to the judgment of the inspectors who passed the engines in later inspections.[8]

Next, the initial decision on remand appears to conclude that the fact that the two individuals who performed most of the overhaul work did not hold mechanics certificates is to some extent dispositive not only of their ability to have done such work properly and of the degree of supervision their work should have received, but also of the issues concerning the existence of deficiencies in the two engines. While an unlicensed mechanic *may* require closer supervision, it by no means follows that he or she will inevitably require constant supervision or be unable or unlikely to perform as competently as a licensed mechanic. This view is unequivocally expressed in the FAR on the subject:

> "A person working under the supervision of a holder of a mechanic or repairman certificate may perform the maintenance ... that his supervisor is authorized to perform, if the supervisor personally observes the work being done *to the extent necessary to ensure that it is being done properly* and if the supervisor is readily available, in person, for consultation ... ." 14 CFR section 43.3(d), (emphasis added).

Our examination of the record persuades us that the law judge's conclusion that these individuals were not supervised closely enough reflects a generalized judgment based almost entirely on their unlicensed status rather than an assessment of their actual competency to perform the work properly and of the supervisor's evaluation of the need for supervision, matters with respect to which the record contains limited information.

We have addressed these two matters not because we believe them to be especially relevant to the Administrator's charge against respondent, but because of the amount of attention the initial decision on remand devotes to them.[9]

The deficiencies alleged to have been found during the teardown of these engines primarily involve the crankshaft and the camshaft in one engine and various valve train components in both engines. We will discuss the evidence concerning those components in the same order.

The Administrator produced evidence that a magnaflux examination at the teardown of the crankshaft from the engine removed from Cessna aircraft N2984V revealed the presence of an otherwise invisible one and three-quarter inch surface crack near the slinger ring. Respondent testified that in connection with the overhauls he had magnafluxed the crankshaft and had found no crack. While the respondent could have missed the crack, it is also possible that the crack did not exist at the time of his inspection. In fact, the FAA inspector conceded that the crack could have developed at some point during the 83 hours of operation of the aircraft after the overhaul.[10] In these circumstances, it cannot be determined conclusively whether this was a deficiency respondent should have detected.

With regard to the camshaft taken from 84V, the parties are in essential agreement that examination with V blocks and dial indicator showed that it was an unserviceable part because its cam lobes were progressively "out-of-round" as a result of improper, perhaps off-center, grinding or regrinding.[11] The parties do not agree on whether this was a flaw that should have been discovered during the overhaul. We do not think it was such a flaw. To begin with, the overhaul manual for this engine, in relevant part, specifies only a visual inspection of camshaft "journals for scoring, deformation and excessive wear" and of "cam lobes for profile wear, scoring, and pitting,

[6] Also unsupported is the comment that one engine "came close to causing a fatal accident with a student pilot and a flight instructor" (id.) It is true that there was a power loss in one engine that required an emergency landing at a nearby airport. The cause of the malfunction, however, was traced to a failed valve keeper. The Administrator neither alleged nor attempted to prove that this incident was the result of anything respondent or his employees did or did not do during the overhauls.

[5] It appears that no one from the FAA actually checked the operation of these engines in response to the complaint. They apparently were tagged for teardown solely on the owner's assertion that a problem existed.

[7] This testimony could not be corroborated as to one of the engines because its logbook was unavailable.

[8] A test of cylinder compression is one of the many checks performed during 100 hour and annual inspections. Where the inspection reveals "weak cylinder compression" the inspector is directed to examine the engine "for improper internal condition and improper tolerances." See 14 CFR Part 43, Appendix D—"Scope and Detail of Items (as applicable to the Particular Aircraft) To Be Included in Annual and 100-Hour Inspections" at (d)(6).

[9] Our earlier orders in this proceeding following the first hearing were predicated on the belief that respondent's connection with these overhauls was primarily as the inspector of work performed by other licensed mechanics. See, e.g., Orders EA-1611 (1981) and EA-1675 (1981). As reflected above, the hearing on remand revealed that the work was performed almost exclusively by uncertificated mechanics. This circumstance, of course, has no bearing on the Administrator's evidentiary obligation to demonstrate that the teardowns uncovered deficiencies inconsistent with proper overhauls.

[10] *See Tri State Airways v. Alpha Aircraft, Inc.*, Superior Court, New Jersey, Docket No. L-37005-79 Transcript page 94, December 17, 1981 which transcript the law judge made part of this record. The inspector had testified, at the first Board hearing, that the crack could not have developed after the overhaul. See Tr. at 213. One of respondent's expert witnesses testified at the New Jersey trial that the crack could have been caused by, among other things, erratic throttle operation. At the second Board hearing the FAA inspector stated that it was "most unlikely" that the crack would have developed under normal operation. See Tr. at 118.

[11] It could not be determined whether the camshaft had been improperly ground at time of manufacture or later.

particularly along the toe line." See Administrator's Exhibit 2, page 78.[12] It does not require or recommend measurement of cam lobe dimensions, and it does not, apparently for proprietary reasons, provide the information needed to do so. While we do not take issue with the FAA inspector's opinion that a better overhaul might be accomplished if testing not dictated by the overhaul manual were undertaken, the regulatory standard is not what an inspector believes should be done in connection with an overhaul, but, rather, what the Administrator has specified, through approved overhaul manuals and other documents, must be done.[13] We believe, in short, that a mechanic cannot be held to have failed to meet performance standards for maintenance operations solely because he has not carried out a beneficial test which is not mandated. Accordingly, we conclude that the problem identified with the camshaft is not one for which respondent is properly accountable under section 43.13(b).

Most of respondent's objections relate to the valve train measurements contained in the FAA inspector's report, a document assertedly prepared from notes taken during the teardown he observed but did not personally perform. His principal contention, in which we find considerable merit, is that the inspector's report is uncorroborated and that, while admissible in an administrative hearing, it cannot or should not be considered substantial evidence. In this connection respondent points out that the inspector did not personally make any of the measurements contained in the report, that neither the full name nor the qualifications of the individual who did make them are in the record, that that individual as an employee of a repair facility competing with respondent, had an economic incentive to find deficiencies,[14] and that the inspector on one occasion interfered with respondent's efforts, through counsel, to interview this individual. We share respondent's view that absent cross examination the reliability of this evidence cannot be adequately evaluated. We do not reject the report on that ground (that is, because it is based on discrepancies the inspector did not personally observe or which do not exclusively entail his own expertise or judgment), however, but rather because of other weaknesses with respect to the measurements the report covers.

Except for the listing of valve clearances, no actual figures are provided for the valve guide or rocker arm bushing clearances asserted to have been "out of limits". Assuming that the unnamed "mechanic" correctly positioned and correctly used the proper gauge, the fact that these components may have been "out of limits" is germane only if the measurements reflected wear greater than that attributable to the number of hours each engine had been operated since overhaul. The conclusory notation "out of limits" does not permit such a determination. Rather, it means only that, to some unspecified degree, the aperture at issue is either smaller or larger than would or should be observed between new or "zero time" parts. The lack of precision in the inspector's report is explained partly by the fact that the "mechanic" was not, as to some of the readings, strictly speaking,

[12] There is no claim that the camshaft exhibited unacceptable wear, scoring, pitting or deformation.

[13] Several of the alleged "deficiencies" noted by the inspector who witnessed the teardowns involved items that either were not shown to have been required as part of the overhaul procedure, such as compliance with nonmandatory service bulletins or the servicing of clutch assemblies, or which would not have in any way affected proper engine operation, such as the existence of a "forging lap" on a connecting rod cap, the assertion that a valve spring was in upside down, and the claim that one of four cylinders from the engine out of N2572U was steel rather than chrome. *See* Adm. Exh. A-3.

[14] Respondent further notes that this repair facility later realized an economic benefit from these teardowns by rebuilding one of the engines and by replacing the other with an engine in its own inventory.

measuring anything.[15] He was, instead, checking for new part tolerances by using a so-called "go, no go gauge", a tool designed so that, depending on which end of the tool is used, it can not be inserted if the clearance being checked is smaller or larger then it is supposed to be. The purpose of this tool is not to measure a clearance but to determine whether the clearance is within a specific range.[16]

It has become clear from the evidence adduced at the hearing on remand that we misapprehended the evidence at the original hearing concerning these measurements. This is demonstrated by our statement in the order remanding the case, that "[t]he asserted deficiencies in the powerplants at issue here involved internal engine components, chiefly in the valve train, which, according to the FAA inspector, *exhibited wear in excess of maximum service limits.*"[17] See Order EA-1777 at 2, emphasis added. What the evidence actually showed, if credited, was that the components no longer met or fell within new part tolerances, a circumstance essentially unrelated to permissible wear limits.[18] In view of these factors the notations in the report which are not actual measurements do not permit a judgment concerning degree of wear and thus must be deemed insufficient to establish deficiencies under the maintenance performance standard.

With respect to those few measurements for which we have the actual dimension, namely, the intake and exhaust valve clearances, it appears that four of sixteen clearances measured, with three of those on the engine that had been operated some 150 hours, exceeded upper limits, one by nearly three and a half hundredths of an inch.[19] In the absence of any clear evidence that measurements exceeding limits to this degree could not be attributable to the hours each engine accumulated in flight school service after the overhauls, we find ourselves unable to conclude on this record that deficiencies of this type and magnitude, if they existed upon teardown, would have precluded a determination that either or both of these engines was nevertheless "equal to its original ... condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness)" at the conclusion of the repairs. *See* note 2, *supra.*

For all of the foregoing reasons we find that safety in air commerce or air transportation and the public interest do not require affirmation of the Administrator's order.

[15] The overhaul manual, in Section XIII "Inspection", states at 13-3, page 73, that: Micrometer calipers, both inside and outside types, are the only measuring instruments which can be used to determine wear by measurement of a variety of sizes with sufficient accuracy for reliable comparison with specified limits."

[16] The inspector's report states that "The various measurements listed as, 'Out of Limits', were made with gauges set at maximum manufacturers service limits, therefore, no tolerances were listed." The evidence at the hearing established that a go, no go gauge is not adjustable, but is machined for specific applications. Further it appears that these gauges were used to check for new tolerances, not the "maximum manufacturers service limits."

[17] Where a service maximum is listed, it is a clearance which if not exceeded means that the parts on either side of the point at which the measurement is taken do not require replacement due to wear.

[18] The inspector listed as a deficiency in the engine from S&V the fact that the crank gear to cam gear tooth backlash clearance was .010", where new part tolerance was from .005 to .009. This was not a deficiency, as the service maximum for this measurement is .015". With regard to the backlash clearance on the other engine, the inspector's report listed it as .075". Respondent, however, testified that the reading he saw on the dial indicator at the teardown was .0075", a measure that placed the clearance in the middle of the range for new part tolerance. See November 9, 1982 Tr. at 210. Given the potential for error in the transcription of this reading, and the fact that the inspector did not himself measure the clearance, we decline to credit this reading in the absence of competent verification of its accuracy. In fact, the inspector agreed that it was unlikely that the .075 reading was accurate. Id. at 157.

[19] Another was off by almost one hundredth of an inch, and the other two were off by roughly two hundredths.

ACCORDINGLY, IT IS ORDERED THAT:

1. The respondent's appeal is granted; and
2. The order of suspension and the initial decision are reversed.

GOLDMAN, Vice Chairman, BURSLEY and GROSE, Members of the Board, concurred in the above opinion and order. BURNETT, Chairman, did not participate.

INITIAL DECISION AND ORDER
ON REMAND THOMAS W. REILLY, Administrative Law Judge.

This is a proceeding under §609 of the Federal Aviation Act of 1958, as amended, 49 U.S.C. 1429, conducted pursuant to the Board's Rules of Practice in Air Safety Proceedings, 49 CFR Part 821. The Administrator initiated enforcement action against the Respondent with an Order of Suspension dated August 14, 1980 (followed by an amended Order on December 15, 1980), based upon two alleged defective, deficient or improper engine overhauls performed in Respondent's repair facility in October and November, 1979.

The Respondent was afforded a full (and rather lengthy) evidentiary hearing on January 8, 1981, at which he was represented by counsel. After that hearing, an Oral Initial Decision was issued affirming the Administrator's suspension based upon violation of Federal Aviation Regulations (FAR) §43.13(b), but reduced the suspension from 60 days to 45 days based upon insufficient evidence of any violation of FAR §145.3, which had also been charged in the FAA Complaint. The suspension was directed to only the Respondent's Inspection Authorization (IA) certificate, and not to his A&P Mechanic's certificate.

Both of the subject engines upon which Mr. Alphin's shop allegedly performed overhauls were from Cessna 150's owned by a flying school, Tri-State Airways in New Jersey, and the aircraft were used in training student pilots. After the alleged overhauls were completed by Mr. Alphin's shop and they were returned to the flying school, both engines continued to run very rough and one eventually experienced an engine failure in flight during a student training flight. Complaints were made to Mr. Alphin and the aircraft were brought back to him, at which time minor adjustments were made, but no further teardown of the engines was undertaken. (The FAA ultimately ordered and supervised a methodical teardown inspection of both engines at another uninvolved engine repair facility.)

After the January 8, 1981 hearing and decision, the Respondent further appealed to the full Board. By Order EA-1675, served September 24, 1981, the Board denied Respondent's appeal from the Initial Decision and affirmed the 45-day suspension. Additionally, the Board also subsequently denied Respondent's Motion To Dismiss on procedural grounds, see Order EA-1743, served January 25, 1982. However, on May 27, 1982, the Board reconsidered itself and issued an order (EA-1777) remanding the proceeding for rehearing based upon "new matter" submitted by Respondent relating to alleged contradictory statements made by one of the investigating FAA maintenance inspectors at a subsequent (Dec. 16-18, 1981) state civil court damage trial, to which neither the FAA nor the NTSB was a party.

The flying school, Tri-State Airways, had sued Alphin Aircraft in state court, attempting to obtain reimbursement for the defective engine overhauls. The flying school was unsuccessful, but it is clear from the record of that trial (cited often by Alphin's attorneys and the Board itself)

that Alphin's attorneys were successful in preventing the FAA Inspectors from giving any expert or opinion testimony regarding the found engine parts and conditions, which clearly is the *sina qua non* of proving such a case.[1] Accordingly, I attach no special significance to the fact that the flying school has been a "loser" now not just once, but twice—once in the reversal of our proceeding, and the second time in the school's attempt to collect damages in state court. (The unfortunate flying school has also been a loser in another respect—after paying Alphin Aircraft some $8,000 or more for the overhaul of two of their Cessna 150 engines, their resultant serious engine problems ultimately resulted in the school having to pay again to have the same two engines re-overhauled by another engine shop.)

A formal, stenographically-recorded prehearing conference was conducted for the remand proceeding in U.S. Tax Court, Washington, D.C., on June 10, 1982, in an attempt to narrow the issues and reduce the extent of additional needed testimony and exhibits. Nevertheless, the remanded hearing took three times as long as the original hearing. The remand hearing took place on three separate days (September 21, 1982, November 9, 1982, and November 10, 1982) and it generated three more volumes of testimony (656 p.) and additional exhibits. Thus, including the record of the first hearing (245 p.), the NTSB transcripts now number five volumes (including prehearing conf.) and some 946 pages, plus the 444 pages of state court transcripts which may have to be referred to. There were six witnesses at the first hearing and a total of fifteen witnesses at the remand hearing. Four exhibits were identified for the Administrator (A-1 thru A-4) and thirteen for the Respondent (R-1 thru R-13) during the course of the two hearings, but not all were received in evidence.

I will not attempt to summarize the testimony or describe all the exhibits. Essentially, I will give my findings and conclusions with my impressions on credibility of some of the key witnesses.

Notwithstanding the lengthy hearing sessions, large number of witnesses and changing succession of lawyers representing both sides, I am convinced from the testimony that the Respondent signed off as an "IA" two engines as having been properly overhauled, when they had either not been overhauled at all or an outrageously deficient job of overhaul had been done. From the evidence I am also convinced that the actual "hands-on" work of overhauling (if done at all) was left in the hands of two people who were unqualified and untrained to work on aircraft engines, and the "supervision" of these people was either minimal or non-existent (notwithstanding protestations of Respondent to the contrary). One of these two people was a former car salesman (Duffy) and the other was a "moonlighting" Mack truck diesel engine machinist who was not paid any monetary compensation for his work on the two engines (Stoner). Neither of these two people had any FAA A&P Mechanic certificate or any other official aircraft engine maintenance or overhaul training. Using these two people to overhaul aircraft engines, virtually without direct supervision, it is no surprise that the job ended up as botched up and useless as it turned out to be. The question arises why Mr. Alphin, himself a qualified A&P Mechanic and IA, would use such unqualified people to do such a complex, safety-related job, when he had several other A&P-qualified aircraft mechanics available to him in his large repair shop? The answer appears to be—to save money. The evidence (Mr. Alphin's own testimony) discloses that even though the

[1] See Tr. 113-117 of state court transcript for Dec. 16, 1981, testimony of FAA Inspector Lengyel and objections thereto by Mr. Alphin's attorney.

flying school paid him many thousands of dollars ($8000 or more) to overhaul these two engines, that he (Alphin) had quoted a rather "low ball" figure to the flying school on the telephone to get the engine work, that he later realized that the prices quoted were too low, and, although he would not admit this, I think the circumstances indicate that one way to cut down the actual costs of the two overhauls was to use unqualified (and one unpaid) personnel to do the actual "hands-on" work of overhauling both engines. He may have done this before, and perhaps provided closer supervision before, and everything worked out okay, we do not know. What we do know is that these two "overhauls" were a disaster. These were not simply cases of "precise measurements" slightly exceeded—these were the absolute worst engine jobs this FAA Maintenance Inspector had ever seen in 38 years in the aircraft maintenance field, based upon what he saw at the FAA-supervised detailed teardown inspection.

The Board had indicated a credibility question as to the testimony of FAA Inspector Lengyel, in its remand order. It is true that Respondent's attorneys had a fun time at the state court trial testing his recollection of details and procedures used years earlier, without the Inspector's notes in front of him, things not in his official report or recorded elsewhere. However, having seen the Inspector testify twice now (undergoing hostile and aggressive cross-examination both times), I am totally convinced of his honesty, credibility and reliability. It is true that there were some apparent inconsistencies in details given at the NTSB and state court trials, but these were explained and are now understandable. The Inspector had no reason to treat this case any different from the hundreds of others he investigated before and after this one. He had several teardown inspections shortly after this one and he does not deny that it is possible that he confused some of the non-recorded details asked him on cross-examination. That is precisely why written reports are required of Inspectors—so that the critical details will not be forgotten or lost track of. He does not waver on the critical details of his observation as to the defective parts inside each engine. His faulty memory in no way creates the slightest suspicion that two proper overhaul jobs were done here. Both engines had serious operational problems continuously after the so-called overhauls, and one came close to causing a fatal accident with a student pilot and a flight instructor.

Lawyers can have a "field day" nit-picking the Inspector's recollections and his failures to recollect, but the facts are clear—these two aircraft engines should never have been signed off as airworthy or as having been properly overhauled by any responsible "IA" inspector. The only time a qualified mechanic touched these aircraft engines at Alphin's shop was to remove or re-install them after the alleged overhaul. At the first hearing, I waited with bated breath to see who the A&P Mechanic was who would come forward to admit that he personally worked on these two engines, i.e., actually performed the overhauls—but I waited in vain. I made it crystal-clear at the remand prehearing conference that I wanted to hear the testimony of the actual mechanic(s) at the hearing. Now I know why they were so "shy". There simply were no FAA-qualified A&P Mechanics who worked on these two engines. Thus, we had a classic recipe for "disaster", followed by the actual "disaster" (two unqualified persons struggling to do a complicated job almost totally without supervison—see testimony of Stoner re: absence of supervision—resulting in two shoddy, trouble-plagued aircraft engines).

It is classic "hornbook law" in the aviation maintenance field that an "IA" inspector has the overriding duty and responsibility to actually inspect before he "signs off" work as having been properly done, and any "common industry practice in the airlines" as alluded to by Respondent's counsel in the prehearing conference is simply illegal and a serious threat to air safety.

The Regulation

The Federal Aviation Regulation (FAR) here involved, and the one to whose standards an aircraft mechanic is required to conform before an FAA-designated IA is properly authorized to "sign off" his work returning an aircraft or engine to service, is FAR §43.13(b):

> "§43.13—Performance Rules (General).
>
> * * * * * * * *
>
> (b) Each person maintaining or altering, or performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, aircraft engine, propeller, or appliance worked on, will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).

It goes without saying that an IA Inspector must "actually inspect" the work in progress during an engine overhaul, i.e., while the engine is completely apart and parts are being worked on and determinations are being made as to what parts need replacement or reworking, if the inspector's function is to be properly, faithfully and honestly carried out. How else can he assure compliance with the requirements of the Regulation? It also follows that if the IA is, for some reason, allowing uncertificated, unqualified laborers do the job (an unemployed car salesman and a non-employee night Mack truck engine "inspector"), then a much closer supervision by the IA is required. (To this day, we have no FAA-certificated A&P Mechanic claiming to have done the "hands-on" work of these two aircraft engine overhauls.) It should also be noted that it is the more common practice in the industry that whenever non-qualified persons are allowed to do the work on an aircraft or engine, they are customarily under the active, very close supervision of a fully qualified FAA-certificated A&P Mechanic. The evidence discloses that this was not the case here, notwithstanding the last-minute protestations of Mr. Alphin on the last day of the hearing, when pressed on this point, that he (now operating in his capacity as an A&P Mechanic) was also the "qualified mechanic" who supervised the work he ultimately signed off as an IA Inspector. (Mr. Alphin's name does not appear on any of his worksheets where the A&P Mechanic's name should appear as having "performed" the work or been responsible for its performance. His name appears only as the "IA" who later inspected the "mechanic's" work.) FAR §43.9 requires that an entry be made in the aircraft records showing a description of the work performed, the name of the person performing the work, and the signature of the person performing the work, as well as the signature of the person approving the aircraft or engine for return to service. No such entries were made in this case (except Mr. Alphin as "IA" returning the aircraft to service), and only an FAA-certificated A&P Mechanic is authorized to sign off for such work. The FAA did not make a separate charge based on FAR §43.9, and accordingly it has not been considered in the evaluation of penalty, but it does cast some doubt on the legitimacy of this entire "overhaul" operation, performed as it was by virtually unsupervised, non-qualified, non-certificated laborers.

HIGHLIGHTS OF TESTIMONY

The following is not intended to be a "summary" of the testimony, but rather are only highlights or excerpts from the testimony of some of the witnesses, used for illustrative purposes. The record is already voluminous and any attempt at summarization would only add another volume to the volumes already available.

On the Administrator's direct case, FAA Maintenance Inspector Albert Lengyel and Mr. Daryl Middlebrook, president of the Penn Yann Aero Service, testified. Inspector Lengyel testified that he took written notes at the FAA-supervised teardown inspection of the two subject engines, conducted at Penn Yan Aero after repeated problems with the "newly overhauled" engines had been experienced by the flying school after they received their two aircraft back from Mr. Alphin's shop. Inspector Lengyel took copious notes at that teardown inspection (he went over the engines "with a fine tooth comb" according to Mr. Alphin's own testimony) in the presence of Mr. Alphin and one of his other employees (Mr. Wenrich). When Inspector Lengyel returned to his office, he prepared a written report of his findings, including the discrepancies found in both engines. This report was received in evidence as Exhibit A-3. Some excerpts from that report are as follows:

With regard to engine serial #252402, taken from N2984V:

"1. Found cylinder #1 having very little compression.

2. Cam shaft was found to have no bend at the center journal.
However in checking out the lobes the following was noted.
Lobe #1 - .010" - for #1 Exh only
Lobe #2 - .005" - for #1 Int and #2 Exh
Lobe #3 - .004" -
Lobe #4 - .0025"
Lobe #5 - .0015"
Lobe #6 - OK

These out-of-round measurements may indicate improper grinding. As can be noted the out-of-roundness diminishes as the measurements are taken going from rear to front of cam shaft.

A fuel leak test was made of #1 cylinder, results were satisfactory.

3. Valve Guide measurements
#1 Intake - OK Exh Out of Limits
#2 Intake - OK Exh Out Of Limits Blow by
#3 Intake - OK Exh Out Of Limits
#4 Intake - OK Exh Out Of Limits

[*Ed.Note:* "Exh" refers to exhaust valves, and *all* four exhaust valve guides were worn out-of-limits.]

NOTE: Found #2 cylinder with a valve spring in upside-down.

4. Valve Clearance - Limits .030 to .110
#1 Exh - OK Int - OK
#2 Exh - .131 Int - OK
#3 Exh - OK Int - OK
#4 Exh - OK Int - OK

5. *All* Rocker Arm Bushings out of limits.

6. Clutch Assembly (639153), 63974 Shaft Gear Assembly worn (Spalling) where #639788 Bearing runs. #63989 Sprags worn.

7. Service Bulletin M79-10, 0-200 Starter Clutch and Crankcase modification not accomplished.
Service Bulletin M74-24, installation of P/N 538556 Lock-O-Seals in place of P/N 63079-7 "O"-rings and P/N 2474 Washer, Intake Manifold improperly mounted.
Service Bulletin M71-8, Cotter PinP/N 639292 replacing P/N AN383-2S-8 not complied with."

[Excerpts from Ex. A-3, continued:]

"8. Crankshaft cracked (1¾" long) at the radius of the Slinger Ring."

* * * * *

[Still other discrepancies on this engine are listed in Ex. A-3.]

* * * * *

With regard to engine serial #253829-A-48, taken from N7572U:

"1. Found Cylinders #2, 3, & 4 to be chrome type. Found #1 Cylinder to be steel type but utilizing piston and rings for chrome type Cylinder.

2. Cam shaft was found serviceable with no bend in center journal.

3. Valve Guide Measurements
#1 Intake - OK Exh - Out of Limits
#2 Intake - OK Exh - OK
#3 Intake - Out Of Limits Exh - Out Of Limits
#4 Intake - OK Exh - Out Of Limits

4. Valve Clearances Limits .030-.110
#1 Exh - .127" Intake - .119
#2 Exh - OK Intake - OK
#3 Exh - OK Intake - .144
#4 Exh - OK Intake - OK

5. Rocker Arm Bushings
#1 Intake - Out Of Limits Exh - OK
#2 Intake - Out Of Limits Exh - Out Of Limits
#3 Intake - Out Of Limits Exh - OK
#4 Intake - Out Of Limits Exh - Out Of Limits

6. Clutch Assembly (639153), 639754 Shaft Gear Spalled where 639788 Bearing runs. #639789 Sprags worn.

* * * * * *

8. Crankshaft to Cam Shaft gear tooth clearance as measured - .075"
New Limits - .006"-.009"

10. Carburetor was not overhauled."

* * * * *

[Ed.Note and underscoring added.]

It should be noted that the above entry number 5 for the second engine, regarding the rocker arm bushings and the number thereof that were out-of-limits, was the source of heated argument by Respondent's attorneys that Inspector Lengyel had been "inconsistent" and "contradicted" himself. It is true that at one session of the state court civil damage trial Inspector Lengyel, without his notes before him, said that "three out of four were out of limits", when he had earlier testified at the first NTSB hearing, with his notes before him, that "six out of eight were out of limits". I consider this "inconsistency" much-to-do-over-nothing, since the contemporaneous report indicates that the true figure was six out of eight, and his attempted recollection some three years later being inaccurate does not in any way establish that he was "lying" or is unworthy of belief. As a lawyer myself, I acknowledge that it is a favorite game of cross-examining lawyers to try to compel a witness to state from memory virtually all the details in a written document made long ago, in the hopes he will forget some detail and thereby indicate he is now "unworthy of belief". But this is merely a "lawyer's game", in my opinion, and does not truly raise a question of credibility. (See Tr. 102, November 9th session, 2nd hearing.) Other similar attempts to confuse the witness were made at the New Jersey trial and the two NTSB hearings; however, his contemporaneous written report stands unrebutted by any evidence of Respondent. Only "questions" are raised, no

contradictory evidence. Other questions as to matters not included in the three-year old report were also used in an attempt to discredit the witness' written inspection findings, but any such "inconsistencies" as to such non-material matters as exactly what time a certain item was inspected three years ago and are you certain who was in the room then, are along the same non-productive lines.

Inspector Lengyel supplemented his testimony at the first NTSB hearing by further explaining the methods he used in determining that discrepancies existed and the role he played at the teardown inspection. Respondent's counsel and the Respondent himself tried to make much of the fact that he (Respondent) had the use of a much more "precise" Comptor gauge for measurement than did the Inspector, who used a simple "Go-No Go" gauge. Again, I see this as much-to-do-over-nothing. If the "Go-No Go" gauge is accurate, and as the evidence indicates it is widely used in the industry (even the Respondent's expert witnesses admitted that), then there is no significance to the fact that a "much more accurate" device is available. A part that is out-of-tolerance is still out-of-tolerance regardless of which gauge is used. It is not of earth-shaking importance to this proceeding exactly how much out-of-tolerance it was. (The fact that there were plenty of them out-of-tolerance is more important here.)

Daryl Middlebrook is the president and general manager of Penn Yan Aero, the neutral repair station where the FAA-supervised teardown inspection was performed on the two engines. Penn Yan is certificated to overhaul engines (Alphin's was not a "Certificated Repair Station" for engines at the time of these overhauls, although Alphin's was permitted to overhaul engines as part of their available A&P Mechanic certificates). Penn Yan was and is a Certificated Repair Station to overhaul aircraft engines, and this repair station has overhauled approximately 2,500 engines, and Mr. Middlebrook has personally been involved in about 90% of these, having an A&P Mechanic certificate and an AI. Additionally, Mr. Middlebrook has performed 200 to 300 teardowns of engines, and has done the "hands-on" work of overhauling 200-300 engines.

Mr. Middlebrook observed and participated in the teardown inspections on the two engines. He specifically recalls inspecting the camshaft of the engine from N2984V, by using a dial-indicator while the camshaft was in a V-block. He saw that the progressive difference in readings from lobe #6 to #1 indicated that the camshaft had probably been ground or re-ground off-center. This improper grinding would result in the valve starting to open or close before it should have. He compared that camshaft with a new one. He testified that he would not reinstall a camshaft in that condition in any engine he was overhauling. He described the use of "Go-No Go" gauges and how they are used. He also said that they are color-coded to avoid mistakes, and that there is quite a variance in size between them so that they would be difficult to inadvertently mix up. He also described his shop's maintenance manual library, its location relative to the work to be done including a reading table, about 50 to 75 feet from the engines being torn down. (Respondent's counsel also tried to make much of this fact, i.e., the fact that these manuals were "so far away". However, apparently counsel has never seen similar maintenance libraries at major airline maintenance hangars and the FAA's own Hangar 6 at Washington National Airport. It's the ready availability that counts—not the number of feet to the library.)

The Respondent offered three pilot witnesses (Bowers, McDonald and Benson) who each testified that they flew the aircraft in question after their

engines had allegedly been overhauled by Alphin Aviation, and none of them detected any particular problem with them, although Mr. Benson admitted that "they were not the smoothest aircraft he ever flew".

Robert Stockslager testified for the Respondent. Mr. Stockslager was a line service supervisor, and in that capacity he did not do overhauls and did not participate in the overhauls of these particular engines. He is an FAA-certificated A&P Mechanic and an IA, but his only connection with these two aircraft engines was to reinstall them after overhaul, and later on, to try to locate the problem when they were returned with complaints of roughness and vibration. Without removing the engines for teardown, he, with others assisting, remembers checking the "mags", blocks and compression. He also believes he changed the carburetor on one of the aircraft. He could not find the source of the problem and says he found no roughness during a ground run. He also remembers checking the valve clearances, using a Comptor gauge. He checked with Mr. Alphin assisting him, but they did not record their results. He admitted that the end result of his using the Comptor gauge, without recording the results, was the same as if he had used a "Go-No Go" gauge, since all he was checking for was to see whether or not each was within limits.

Richard Wenrich, no longer employed by Respondent, is also an FAA-certificated A&P Mechanic and an IA. He also did not do any of the work in overhauling these engines. He recalled that the engines came in for overhauls, but he did not see any of the tests being performed for the overhaul. He did accompany Mr. Alphin to Penn Yan shop at the time of the FAA-supervised teardown inspections.

Paul Duffy is a former car salesman who started working for Respondent in 1975, although what he did between then and 1979 is unclear. However, starting in 1979 (the same year these alleged overhauls took place), Mr. Duffy was assigned to tear down engines, wash parts and help assemble them. He testified that his involvement in the overhauls consisted of putting the engine case together and installing the cylinders. When the worksheet for N2984V (Ex. R-2) was shown to him, he acknowledged that those items showing the initials "P.D." were items he had worked on. Mr. Duffy does not have an FAA A&P Mechanic's certificate, and counsel for both sides agreed that any aircraft engine work done by him, under the FARs, would have to be "signed off" by a qualified certificated A&P Mechanic, who then would be responsible for the quality of his work. Mr. Duffy testified that he worked under the supervision of Respondent, and that he (Mr. Duffy) was assisted by another individual whose name he could not recall. He also could not recall if that other person had an FAA A&P Mechanic certificate. However, that other individual was clearly assisting Duffy, and not the other way around. Later in his testimony, Mr. Duffy stated that the only A&P Mechanic who ever supervised him while working on the subject engines was the Respondent himself.

Robert Stoner, an engine test inspector (diesel engines) for Mack Truck, was a full-time employee of Mack Truck employed on their night shift. After his midnight-to-8 a.m. shift was over, he would go over to Mr. Alphin's shop and work for him until about 1:00 or 2:00 o'clock in the afternoon. He did not get paid by Mr. Alphin or Alphin Aircraft, and was not an employee of either, but he did get some free flying time from Mr. Alphin once in a while. Mr. Stoner also did not have any FAA mechanic certificates. He testified that at the time of the overhauls of the subject two engines, he (Stoner) did all the cylinder work for Alphin Aircraft, and that

the Respondent let him work "with minimum supervision". When asked who made the decision as to whether a particular cylinder was good or bad, Mr. Stoner made it clear that Respondent would accept his (Stoner's) judgment without question. Since the Respondent knew that Mr. Stoner wanted to be left alone while working, the Respondent would not supervise him unless he (Stoner) asked for it. He stated that when he was doing the cylinder work, Respondent was "in and out half the time".

Mr. Stoner testified that he was the one who checked the cylinders after they were brought back with complaints of vibration. He checked the valve guides, the seats, "anything pertaining to the cylinder assembly I usually did myself". With respect to the overhauls, Mr. Stoner stated that he personally did the cylinder and valve work. As to the rocker arm bushings, he testified that as to each cylinder he did, he worked the rocker arm and put in bushings if they needed them. He said the clearance limits for the rocker arm bushings were okay and that it is better to have too much clearance than not enough. He acknowledged that with too much clearance it would make noise.

Mr. Stoner described a special tool that he personally made that he uses when he grinds a valve seat, and told how he used his special tool on both of the subject engines. Stoner's cylinder work consisted in rebuilding them. He remembered working on the cylinders for both engines ("I rebuilt them, whatever it took."). He further testified that if the cylinders in the engine from 72U were replaced with new ones (and he wasn't sure if this were the case), then he had no involvement with it, but if they were replaced with rebuilt cylinders "from the shelf", then they were cylinders that he had rebuilt. He testified that he can tell the difference between chrome and steel cylinders without relying on the color band. Mr. Stoner also testified that he had had no idea which FAA-certificated A&P Mechanic might have signed off his work.

Mr. Stoner was also used by Respondent as the vehicle to offer Respondent's Exhibit R-5, a photo album of pictures of Mr. Alphin's shop. It appears to be a well-equipped shop (he bought it from another engine shop in Texas), but there is no issue here as to available tools or equipment, just the qualifications of the people who worked on the subject two engines, and the results of such work.

Frank Taulbee was called by Respondent as an expert witness. He is a service manager for Teledyne Continental Motors Corporation, responsible for after-sales service to customers. He testified that valve guides can be checked either from the top or bottom of the cylinder, but that it is easier from the top. If one is using a Comptor gauge, one can read it better from the top. However, with a "Go-No Go" gauge a reading from the top will not be more accurate. He also noted that Continental uses the Comptor gauge only in experimental research. He said that "very, very few" shops use a Comptor gauge. (So much for the Respondent's argument that there was something improper about the FAA Inspectors using only a "Go-No Go" gauge for much of the teardown inspection.) With respect to the .075" clearance, crankshaft to cam shaft gear tooth, reported by FAA Insp. Lengyel for N7572U, Mr. Taulbee said that such a clearance was clearly excessive and would indicate to a qualified mechanic at time of overhaul inspection that something should be replaced. He said that should be obvious to the mechanic. Mr. Taulbee noted that Continental recommends that "new" limits be used for overhauls, even though "service" limits are acceptable to FAA. Thus, even with a crankshaft-to-cam shaft gear tooth clearance of .013", the service limit, an overhaul to this measurement would be, in his opinion, "a very bad overhaul". (Note: the Alphin shop "overhaul" resulted not in even a service limit clearance of .013", but a far out-of-tolerance .075", see Ex. A-3.)

With regard to valve springs, Mr. Taulbee explained that some of Continental's field manuals do specify that valve springs should go in a certain way. However, more current experience disclosed that it does not make any difference (i.e., the "upside-down" argument).

Respondent's counsel declined to cross-examine FAA Inspector Lengyel when he had the opportunity to do so; but preferred to call him as his own (adverse) witness later in the remanded proceeding. Inspector Lengyel testified that at the time of the teardown inspection at Penn Yan, the crankshaft for N2984V was magnafluxed after Respondent and Mr. Wenrich left. It was done by Mr. Middlebrook. He explained that at the earlier proceeding, he had gotten the terms "dye penetrant" and "magnaflux" confused, but that it definitely was the magnaflux procedure that was used (using a black light). Inspector Lengyel personally observed the crack in the crankshaft. Regarding the cam shaft, he testified that he had no way of knowing who did the improper grinding. He stated emphatically that the cam shaft in N2984V was clearly an unserviceable part notwithstanding the fact that the Continental overhaul manual does not deal with that aspect. If he were doing an overhaul, he would have definitely checked the cam shaft for just such a discrepancy as was found at the FAA inspection, before reinstalling it in an aircraft.

Inspector Lengyel believed that at the teardown inspection the valve guides were checked from both the bottom and top of the cylinders. He admitted that the overhaul manual does not specify service limits for valve guides, but later testimony established that where this is the case new limits should be used. As to the out-of-limits valve clearances, he said this could result in engine clatter or roughness and eventually would lead to a valve train problem. When asked about the fact that he testified at the 1981 NTSB hearing that a "Go-No Go" gauge was used for the rocker arm bushings, but at the New Jersey state court trial he said a "T"-gauge, he explained that he honestly can't remember now whether it was a "T"-gauge or a "Go-No Go" gauge (back in March 1980). Either one can be used for this purpose.

The Inspector testified that the compression check was done very early in the inspection process, before the engine was torn down. He said again, as he had in the 1981 hearing and the September 1982 hearing, that the compression check was done by the differential pressure method. He explained that his answer at the New Jersey trial saying that a compression gauge was used was due to a lapse in memory and confusing several investigations he had been on about the same time (a maintenance inspector takes compression checks of one type or another on virtually all these FAA investigations), and also due to the fact that at the New Jersey trial he had no notes to refer to.

The Respondent's attorney attempted to discredit the Inspector's compression check by disparaging the fact that the Inspector had turned the crankshaft by hand. Counsel specifically referred to the printed description of a direct compression check in Respondent's Exhibit R-6. However, a close reading of R-6 in the section on differential compression checks (the kind utilized by Inspector Lengyel) discloses that the crankshaft is to be turned by hand.

With regard to the alleged inconsistency between Inspector Lengyel saying at the NTSB hearing that the manual was available at the time of the teardown inspection, and at the New Jersey trial saying that the manual was not available to him during the teardown, he explained that when he testified before the NTSB he was referring to the fact that the manual was readily available to him because it was in the same building (hangar) and within easy walking distance. But at the New Jersey trial, he was under the impression that the question was directed to whether he physically had the manual in his possession while he was engrossed in the teardowns. In the latter case, the answer was "no", because it was referred to later that day and on subsequent days when he worked on his written report. (He took copious handwritten notes during the teardown and these utltimately formed the basis for his formal typewritten report, Ex. A-3.)

Inspector Lengyel adamantly stood by his earlier testimony that these two aircraft engines were the worst he has seen in his 38 years in the aircraft maintenance business.

The next witness for Respondent, Anthony Sianelli, was presented in an effort to establish that Inspector Lengyel interfered with Respondent's attempt to interrogate one of the Penn Yan mechanics about the procedure used for checking valve guides. Although this is a relatively minor point, as far as the merits are concerned, I have difficulty affording any weight to Mr. Sianelli's testimony. This is not so much a question of "credibility" i.e., honesty or general believability, but a serious question about his recollection and powers of perception. He could not recall what the date or approximate date it was that he accompanied Respondent to Penn Yan; he could not remember which aircraft the engines came from or if those aircraft were on the premises anywhere; and he had serious difficulty hearing normal spoken conversation from the attorney (Respondent's attorney) examining him. (See his repeated complaints: "I can't hear you", Tr. 192, 195.) However, he did recall that this occurred sometime in the Spring of 1981, and that there was allegedly some derogatory comment made by Mr. Middlebrook about FAA Inspector Lengyel.

The next witness to testify was the Respondent himself, Mr. T.S. Alphin. He asserted that during the period when "the issues arose about these two aircraft" he was in the engine shop (he also has an airframe shop) 90 to 95 percent of the time, getting equipment calibrated and set up for FAA certification. (His engine shop was subsequently certificated by the FAA as qualified for engine overhauls as an official Certificated Repair Station for aircraft engines.) He testified about the efforts he made with the aircraft after they were flown back to his shop with complaints about poor operation and roughness. He test flew them and performed other checks, and could find nothing wrong with them. He asserted that he checked the valve guides and they were "within tolerances".

He admitted that when he was first called about these two engines by Mr. Nazarian, the mechanic at Tri-State Aviation, he gave Nazarian an unusually low price for overhauling both engines (about $2600 each, he thinks). He admits that he "goofed" on the price (too low) but decided to stick to it, and he now claims that he had no intention of cutting cost corners to meet his low price. He admits that the going price then for overhauling 0-200 engines was about $3800. He asserted that he did not personally overhaul those engines, "my employees did and I supervised all of it." He also asserted later that he personally supervised 85-90% of the work, and that he sometimes did the "hands-on" work, but he admits that he did not sign off

any of the work as having been done by him (in his capacity as an FAA-qualified A&P Mechanic). He claims that both engines were magnafluxed prior to the overhauls. He says he did not sign for it but he did it for 84V and a Mr. Rettick did it for 72U. Mr. Alphin testified that he had a general policy in his shop that Mr. Wenrich would sign off for any overhauls coming out of his engine shop, but that this policy started between the overhauls on the two engines. He claimed that Wenrich signed off the overhaul on the second engine, and although Mr. Wenrich's initials appear in a few isolated places here and there on the worksheet for that engine, Mr. Wenrich never testified that he worked on either one of these two engines, even though he testified at length twice in this hearing (both at the first hearing, Jan. 8, 1981, and at the remand hearing, Sept. 21, 1982). Mr. Wenrich testified only to his observations at the Penn Yan FAA-teardown inspection.

Mr. Alphin now asserts that his secretary made a "mistake" in using his title "I.A." for the overhauls on these two engines—he claims she should have listed him as the "A&P Mechanic" responsible for the overhauls on both engines.

With respect to the FAA teardown inspection, Respondent admitted that "they checked everything with a fine tooth comb." He stated that he witnessed the cam shaft being checked and agreed that the #1 lobe was off .010". Respondent obtained the cam shaft shortly before the November 1982 hearing session and had it checked by a machine shop, Aircraft Engine & Accessory Co., for an inspection and report. That report (Ex. R-7) indicates "positively" that the cam shaft is not airworthy. The testing company concluded that the shaft had not been reground and that it probably had been manufactured that way. However, they also noted that "had this cam shaft been tested or reground at engine overhaul, the problem would have been discovered," although field testing "is difficult and is not common practice." No witness was available from the company for cross-examination as to their conclusions and speculations.

Regarding the crankshaft from N2984V, Respondent obtained the shaft shortly before the November 1982 hearing and admitted that magnafluxing revealed a crack that was a little over an inch long.

Respondent said that with respect to the valve guides, the manual does not provide "service limits", so his "Go-No Go" gauges are set to "new limits". He agreed that where there is no service limit listed in the manual, the proper procedure is to follow the "new" limit.

Respondent used the post-overhaul, post-teardown logbooks for the subject two aircraft to show that there had been several repairs after the Penn Yan overhauls on those engines. However, he admitted that with respect to N7572U, that was an entirely different engine from the one his shop worked on. He pointed out that a 100-hour or annual inspection had been done on one of the engines in October 1979 and January 1980. But he admitted that the internal engine parts are not inspected for tolerances during such inspections.

Respondent testified that he had ten to fifteen A&P Mechanics employed at the time of the subject two overhauls, and that there was at least one, usually two, in the engine shop at all times (but none signed for these two engine jobs). In addition to the engine shop, Respondent also had an airframe shop, radio shop and paint shop (separate buildings).

Respondent testified that he and somebody else together magnafluxed the crankshaft for N2984V before the overhaul. He claims that he did not observe any crack then. He conceded, however, that there was no entry on

any of the worksheets, either showing date or initials, indicating that a magnafluxing had been performed.

When asked specifically whether he personally worked on the overhauls, because he said he had not at the first NTSB hearing (Jan. 1981), Respondent replied that he "supervised" and was there "and helped with it". He admitted that he had not signed any of the items on the worksheets, either by name or initials. When asked who the A&P Mechanic was who should have signed off for the overhaul work, he said it should have been himself, but due to clerical (secretarial) error, it didn't turn out that way.

Respondent claimed that the first test of the "newly overhauled" engines was in the air, on a test flight. (Ground testing of aircraft engines, either on a test stand or in a static aircraft, is standard after an overhaul.)

FAA Inspector Raymond S. Whitehead, another General Aviation Maintenance Inspector from the Allentown GADO (as was Insp. Lengyel), was called by both the Respondent and the Administrator. He was called by Respondent in an apparent effort to show some kind of bias on the part of the FAA or Inspector Lengyel with respect to enforcement actions against Respondent (I find this to be utterly without merit). Inspector Whitehead was called on the Administrator's rebuttal case to describe a 100-hour inspection and an annual inspection. During neither is the engine torn down to inspect or measure existing tolerances or clearances. He also stated that when the engine overhaul manual does not list "service limits" for parts, then the "new limits" must be used. (The new limits are more demanding.) Inspector Whitehead also reported the results of his further investigation into Respondent's claims that these two engines had further similar problems even after Penn Yan had performed its (2d) overhaul on those same engines. (N.B., one of the engines that Alphin "overhauled" was rejected outright after inspection at Penn Yan and replaced in toto, thus only one of the original engines was actually re-overhauled for re-use by the flying school.) Inspector Whitehead's information from Mr. Madden at Tri-State Aviation was that he has experienced no problems and no vibration with the engine in N2984V after the Penn Yan overhaul. He also has had no problems or roughness with the engine in N7572U since its receipt from Penn Yan. Mr. Madden also informed him that the reason the propeller in 72U had been later repaired was because a student taxied into a hole and damaged the prop tips. The engine mounts had been replaced because a student had made a hard landing.

Mr. Middlebrook, recalled on FAA's rebuttal case, testified that an experienced mechanic should be able to tell the difference between a steel cylinder and a chrome cylinder with the naked eye. With regard to the valve guides, he stated that he measures them both from the top and the bottom because the bottom tends to "bell" out more than the top due to heat. If the bottom is out of limits, he replaces the guide. In response to Respondent's testimony that valve clearances can be out of limits at overhaul but later tend to close up, Mr. Middlebrook stated that the mechanic is required to make sure that the valve clearances are within limits at the time of overhaul. If they are not within limits, they can be adjusted by using different size push rods or exchanging rocker arms. Mr. Middlebrook also testified that the crankshaft had been magnafluxed during the FAA teardown inspection and that he himself observed the crack. This was done after Respondent had left, but Inspector Lengyel was still there. Mr. Middlebrook confirmed Insp. Lengyel's testimony that a black light is used during the magnaflux inspection. Mr. Middlebrook said that the eventual

consequence of a crankshaft being cracked, if left uncorrected, is that the propeller could come off.

The last witness to testify on the Administrator's rebuttal case (and the last for the entire remand hearing) was Mr. Leo Weston, the Manager of the FAA's General Aviation and Commercial Branch of the Aircraft Maintenance Division, Office of Airworthiness, in FAA Washington Headquarters. Mr. Weston has over 38 years experience in the field of aircraft maintenance, in the airlines, the military and for FAA. His FAA responsibilities include developing standards and regulations, as well as instructions for the field, for aircraft mechanics and repair stations, mechanic schools and aircraft technician schools. His office is also responsible for developing national policy, instructions and regulations governing aircraft inspection and aircraft maintenance programs for both large and small aircraft. He himself has worked as both a qualified A&P Mechanic, foreman and flight engineer. He has worked as a field FAA Maintenance Inspector. Although it is not a part of the routine and regular duties for an FAA Maintenance Inspector to actually perform engine overhauls (and because of his supervisory and other duties he has not performed manual overhaul work in over 20 years), Mr. Weston clearly has a background qualifying him as an expert in the field of aircraft maintenance. To argue that an FAA Maintenance Inspector, with 38 years in progressively more responsible maintenance positions, is not an expert in aircraft maintenance because he hasn't physically done the manual labor of an engine overhaul in 20 years is patently absurd.

Mr. Weston testified as to the necessary steps for a proper engine overhaul. He stated that the manual requires that after overhaul the engine must be tested on the ground, that the engine's performance is tested (run-in) while the engine is mounted on a test stand. Insofar as inspections by the responsible mechanic or "IA" are concerned, during the overhaul the work must be inspected "as often as necessary to make a determination that (the) work was being done properly." "If it requires to be there constantly, a person should be there constantly."

Mr. Weston also testified as to the record-keeping requirements in FAR Part 43. For any work done on an aircraft engine, no matter how minor, an entry must be made in the aircraft engine record (logbook), including the name of the mechanic returning it to service and a detailed description of the work done. (See FAR §43.9; see also FAR §43.3 "Persons authorized to perform maintenance, preventive maintenance, rebuilding and alteration", which requires that the person performing the work be a certificated A&P Mechanic, although one not so qualified may do the work under the direct supervision of an A&P Mechanic "if the supervisor personally observes the work being done to the extent necessary to ensure that it is being done properly.") The A&P Mechanic or IA signing off the work assumes responsibility for the quality of the work as if he had done it himself.

Mr. Weston also testified that a repair station must have the overhaul manual available but that its location was up to the repair station. With respect to the differential pressure check, he stated that the FAA's Advisory Circular on this subject recommends that the engine be turned by hand, and that the test be performed as soon as possible after the engine is shut down. The purpose of this is to ensure that all the parts are properly lubricated. However, there are other procedures that can be used for lubricating the engine besides running it. For example, a compression check can be done on a cold engine by inserting oil directly into the cylinders and

then turning the engine by hand.

DISCUSSION

This matter was remanded by the Board for rehearing based upon the apparent inconsistencies in FAA Inspector Lengyel's state court testimony, at which trial neither the FAA nor Inspector Lengyel nor the NTSB were represented by counsel, and thus had no opportunity to object or cross-examine (or even to argue against the unfairness or pointlessness of preventing the FAA Inspectors from repeating their NTSB expert testimony regarding the clear deficiencies they found in their reinspection of the engines allegedly overhauled at Alphin's shop). Thus, the remand was directed to explore the credibility and weight to be given Inspector Lengyel's testimony. At the June 10, 1982, formal Prehearing Conference, the Judge made it clear that he would give the Respondent the opportunity to actually produce the mechanics who performed the overhauls and the contemporaneous records documenting who those mechanics were (because the Respondent had not done this at the first NTSB hearing), as well as testimony specifically showing how often and at what times the Respondent inspected the overhauls in progress (not attempted by Respondent at the first hearing).

Regarding the apparent inconsistencies regarding the availability of the overhaul manual at the FAA teardown inspection, I find that they have been satisfactorily resolved. Inspector Lengyel explained, and Mr. Middlebrook confirmed, that the manual was available at the repair station. As to the items on which a "Go-No Go" gauge was used, the question of whether the Inspector referred to the manual is simply irrelevant because the gauge itself is premanufactured to the specified limits in the manual and they are identified by the mechanics through a color-code system. As to the items more precisely measured using a feeler gauge, the evidence shows that specific readings were recorded by the Inspector at the time of teardown, as indicated in his report (recorded therein), a new document which was not before the Board in the original proceeding (Ex. A-3). Whether those readings were checked on the day of the teardown, the next day or several days later, the result is the same—the recorded readings exceeded the allowable tolerance limits in the manual—and the Respondent has offered no evidence that some other figures should have been used.

Although there is the appearance of inconsistency in Inspector Lengyel's testimony at the New Jersey civil trial, again his testimony must be reviewed in context. As to one of the out-of-limits items, he was asked whether he had referred to the table of limits "at that particular time." He answered: "To be truthful with you, I don't remember right now." Later on the following questioning occurred:

> Q. "Now, there's a very interesting point about this manual, Mr. Lengyel. You did not read the manual during the day that you were supervising these teardowns, did you?"
> A. "Neither I nor Mr. Alphin did."
> Q. "Pardon me."
> A. "Neither I nor Mr. Alphin read it."
> Q. "Correct. The manual was not in evidence, was it?"
>
> [Emphasis added; and see that at the rehearing Respondent's own counsel interpreted "in evidence" to mean "at hand or visible" while doing the teardown. Nov. tr. 163.]

> A. "No, sir, it wasn't."
> Q. "What you did and what you reported in your testimony is that an employee of Penn Yan set gauges to what the employee believed was the appropriate measurement, correct?"
> A. "He set them to the standards prescribed by the manual."
> Q. "But he did not look in the manual when he opened—when he set the gauges, did he?"
> A. "I can't attest to that."
> Q. "In fact, you can attest, as you did a moment ago, that the manual was not in evidence, wasn't available. It was available, but it wasn't open. You did not use it. He didn't use it. Gauges were simply being set by an employee of Penn Yan, correct? That is correct. Say yes please."
> A. "The manual wasn't available. That's all I can say."

The significance of this exchange is the context in which Inspector Lengyel was using the term "available" and the type of gauges he was then referring to. It was clear from the entire text of this exchange that Alphin's counsel was then referring to the "Go-No Go" gauges. As has already been explained, the "Go-No Go" gauges are premanufactured to the applicable manual limits, thus reference to the manual was unnecessary. Furthermore, Inspector Lengyel's other testimony clearly establishes that although the manual was not "in evidence" (i.e., immediately at his elbow while engaged in the teardown), it was available for research (1981 NTSB hearing, Tr. 110). It should also be noted that for almost all of this detailed inspection, both the Respondent and one of his A&P/IA's were both standing there witnessing the measurements, call-outs and recordings, without any record of objections being made to improper tolerances or improper gauges being used, or any requests by Respondent for a double-check of the manual. It also should be noted that the final "question" in this exchange indicates that either counsel was confused in his interrogation or he was trying to confuse the Inspector, witness the fact that the "question" consists of a series of several different statements, each one adding to or slightly changing the meaning of the one before, and is, in effect, several questions compounded into one. No wonder that the Inspector might have been confused; nevertheless his answer is fairly clear—depending upon what he meant by the word "available", which in turn depends upon what he thought the questioning attorney meant by the word "available" and "available, but wasn't open." The "bottom line" is that upon rehearing both Inspector Lengyel and Mr. Middlebrook clarified beyond the shadow of a doubt what the full story was on the ready availability of the manual—the fact that it was freely available on the premises of the repair station, that it was not necessary to refer to it where a "Go-No Go" gauge was used, and that on those items where they recorded precise measurements with a feeler gauge, the Inspector made reference to the manual at a later time to complete his written report.

With regard to the overhaul work allegedly done by Alphin Aircraft, the Respondent throughout all three of these hearings/trials has consistently attempted to draw attention away from the actual overhaul work (and who did what), instead concentrating upon the minor things done after the engines were returned with the complaints of serious problems, and criticizing the methods and tools used in the FAA teardown inspection.

Initially Respondent showed that complaints of engine roughness (as to the two aircraft) were totally without foundation by presenting pilots that flew the aircraft at his request. However, the logical source of all these complaints was well established even at the first hearing—not as to the precise

part that caused it—but in the combination of very serious internal problems with these engines as revealed by the FAA teardown inspection. It is obvious that the complained of "roughness", "vibration" and actual engine failure (in one case) actually did occur, were not the figment of somebody's imagination, as evidenced by all the internal problems disclosed by the teardown inspection. In view of the long list of serious discrepancies found, and the disclosure that none but unqualified people were assigned to work on these engines, the original complaints of roughness and vibration are now beside the point, i.e., matters of only historical significance.

Respondent next produced various employees as witnesses. However, most of them were merely peripheral to, or not connected at all, with the actual hands-on work of the overhauls. He had several very qualified A&P's and IA's; however, none of them participated in doing the overhauls—they either just observed the FAA teardown inspection or removed and reinstalled the engines before and after "overhaul", or re-checked the engines when they came back with complaints. FAR #43.9 requires an entry in the aircraft (engine) logbook showing a description of the work done, the name of the (qualified) person performing the work, and the signature of the (qualified) person approving the equipment as airworthy and ready for return to service. This was clearly not complied with here, and clearly an inspector (IA) should see that this, in addition to work quality, is carefully complied with. The parties stipulated that while a non-certificated person may perform the work, the record must be signed off by a certificated A&P Mechanic, who thereby assumes responsibility for the quality of the work performed (as if he himself had done it). (See also FAR §§43.3, 43.5; *Admr. v. Sanders*, EA-694, 2 NTSB 1386, 1388.)

The only witnesses presented by Respondent who actually had any personal involvement with the overhauls were ex-car salesman Paul Duffy and the moonlighting (midnight shift) Mack Truck diesel machinist Robert Stoner. Neither one holds an FAA A&P Mechanic certificate nor any other FAA certificate, so far as the record shows. Aside from this, having personally observed both gentlemen testify from the witness stand, it is clear that neither one has any specially outstanding mental faculties that would indicate that they are capable of being technically qualified without attempting to pass an FAA examination for an Airframe and/or Powerplant rating. They both have very limited formal education, and although they attempt to do what they are told to do with the best of honest and sincere intentions, to say the least, they require very close supervision. When asked about his supervision of Mr. Stoner (the unpaid moonlighter) while he was overhauling the engines, Respondent pointed out that Stoner "was not overhauling, he put in the seats and the guide" (Nov. Tr. 308). Respondent also pointed out that he never had to correct him because he was "such a good machinist". (Ibid.) Stoner himself, however, said that he rebuilt the cylinders on both aircraft. Asked specifically about N7572U, in which four new chrome cylinders supposedly had been installed, Mr. Stoner's testimony became very general and his recollection hazy. Mr. Stoner clearly stated, however, that he worked with very little supervision and that the Respondent was "in and out half the time".

When pressed at virtually the last hearing session, after all his employees had already testified, exactly who was the A&P Mechanic who performed these two overhauls, Respondent replied that he and Wenrich "were in the shop" when N2984V was overhauled and that "the other one was Mr. Reddich and myself". As the record shows though, Mr. Wenrich did not work

on these overhauls, and he testified as to his participation in viewing the FAA teardown only. Mr. Reddich never was produced by Respondent as a witness. It is also somewhat amazing that Respondent should suggest, virtually at the close of the hearing, that he himself was the A&P Mechanic responsible for the overhaul work, in view of the fact that his defense to the FAA charges from the beginning has included the argument that he did not perform the overhauls, only inspected them. (See his attorney's earlier Motion To Dismiss, also his arguments of record that even though work has been done improperly, since Respondent's only function was to inspect he should not be held liable so long as he "inspected" the work.) When reminded of his earlier testimony, Respondent quickly modified his role to that of "supervising" and "witnessing" the overhauls. (In view of the extensive list of discrepancies on both engines, Ex. A-3, it is no wonder that no one is rushing to claim "responsibility" for doing this work.)

The fact is, in view of the complete record of all three hearings/trials, that no certificated, qualified A&P Mechanic performed these overhauls, and no records were offered showing the names of any qualified persons performing same. Most worksheet entries are left blank. It is clearly probable that some work was done by entirely unqualified personnel, while other work customarily done as a routine part of a legitimate aircraft engine overhaul, was simply not done[2] at all. And whether the Respondent signed off the work as an "IA" inspector or as an A&P Mechanic, he violated the Regulations in that said work was not in any sense properly done or properly supervised or properly inspected.

I find the Administrator's witnesses to have been entirely fair, honest, credible and trustworthy in conducting this investigation and in giving their testimony. They were vague in areas where they made no particular notes at the time and which areas or items were of relatively little consequence, not material to the issues in this case, and understandably so as the events occurred over three years ago, and were followed, as far as the FAA Inspectors are concerned, with many similar investigations and engine teardown inspections (including in each case a compression check). They were precise on those items which are always of central importance in such cases and which they customarily take note of, knowing that these items could be of some importance in the future. On the other hand, I find the Respondent's chief witnesses (including the Respondent himself) to have been consistently vague and evasive in the key areas of exactly what was done on each engine and by whom. Having observed the demeanor, conduct and appearance of the witnesses at the long multi-session series of hearings, I am convinced that the Respondent's main witnesses were less than credible and were unreliable. The main thrust of the Respondent's case seemed not to be to shed light on exactly how the engine overhauls were conducted, but to attempt to discredit and denigrate the Administrator's witnesses, their motives, the tools used, and the way the discrepancies were found and recorded (even though most of this was done in the presence of the Respondent and his chief mechanic).

The point in reviewing this extensive list of discrepancies is not how "minutely" some of the parts may have been out of tolerance, but the fact that since so many important parts, critical to proper engine operation, were out of tolerance (some even had bends and cracks in them), it's possi-

[2] See, e.g., the blank entry for magnafluxing the crankshaft on N2984V, the crankshaft that was found to have a crack (Ex. R-2t, *CP*, entry for N7572U (Ex. R-1). Also, the cam shaft, another major discrepancy on N2984V, has no initials next to it on the worksheet, possibly because it was never checked.

ble that either no overhaul was done on either engine or, at best, only a partial overhaul was done without inspecting (and rejecting) many parts that were clearly unacceptable for re-use. No one who has ever witnessed a proper overhaul of an aircraft engine, and seen the drastic immediate improvement in operation when it is thereafter test run on the test stand and ground run in the aircraft, would ever seriously believe that the difference between a proper overhaul and an improper overhaul is merely a matter of a few minute tolerances, of changing just a few "precise measurements, involving hundreds or even thousands of an inch". Simply put, in a proper overhaul all worn-out parts are replaced with new parts or in some cases parts are reground to proper acceptable fit, all outstanding "A.D.'s" and service bulletins are complied with, the carburetor and propeller are overhauled, and the engine is carefully run on a test stand and ground run in the aircraft to see that everything is running smoothly and vibration free, with re-checks where necessary. This was certainly not done in this case. The listing of precise measurements by the FAA Inspectors after an engine must be torn down for reinspection after complaints of poor engine performance is only one way of documenting and evidencing with some precision the indications that no overhaul or an improper overhaul was done. An experienced FAA Maintenance Inspector (himself a former experienced aircraft engine mechanic) can certainly tell whether a proper overhaul has been done or not. Magnafluxing was done here to detect cracks (crankshaft was cracked) and a compression check disclosed extremely low cylinder pressure.

In this case, these two engines were not even marginally close to being in proper operating condition, i.e., not even close to showing signs of proper overhaul. They were the worst jobs this FAA Maintenance Inspector had ever seen in his over 38 years in the aircraft maintenance business (Tr. 213-1st hearing; Tr. 167, 191-2nd hearing, Nov. session). The evidence discloses that these two engines came into Mr. Alphin's shop badly in need of overhaul, and they went out the same way—still badly in need of overhaul. Not just one of the parts but a whole series of critical internal parts were seriously "out-of-limits", with some parts bent, some cracked, some misaligned, and most showing long-standing severe wear (consistent with 2,000 hours on each engine). Anyone who believes that this extensive list of serious deficiencies (Ex. A-3) is simply a case of a few precise tolerances being "slightly" exceeded is not reading the discrepancy list very carefully, and is ignoring the forest because the trees are in the way. Both of these engines required being completely re-overhauled after allegedly receiving overhauls in Alphin's shop (one was simply rejected outright after reinspection showed it could not be brought up to standard, and was replaced with another rebuilt engine). Thus, the unfortunate flying school ended up having to pay twice for the job they had already paid Mr. Alphin many thousands of dollars to do.

It should be noted that these two engines did not perform in a trouble-free manner in the 83 and 150 hours, respectively, since the Alphin "overhauls". They were evidencing problems, vibration and roughness, virtually from the first flight after Alphin delivered them back to the flying school—problems so bad that one aircraft was flown back to Alphin's three times in a short space of time to try to get the problem located and corrected (N7572U, Tr. 28, 1st hearing) and that same engine finally experienced a partial engine failure in flight with a student on board, and the other one was returned to Alphin's twice shortly after the alleged "overhaul" (N2984V, Tr. 29, 1st hearing). Even after Alphin rechecked both engines, and replaced the carburetor on one, the flying school still experienced performance difficulties with the engines and was reluctant to use them for student flights, instead having two other independent mechanics check the compression on one (72U) and then, apparently because of the poor readings, they then called the FAA to complain. It was only after all these problems persisted that the final 83 hours and 150 hours, respectively, were accumulated on the engines. These were not "trouble-free" hours—they were "trouble-full" hours of operation. This included five return trips to Alphin's shop endeavoring to get some correction to the engine problems. Thus, the 83, and 150 hours were amassed up to the time the "final straw" was broken and the FAA was called in.

The peril and threat to air safety cannot be overemphasized, particularly when dealing with a flying school checking out their small training planes to novice student pilots. The potential fatal consequences cannot be ignored, even if the "rip-off" aspect is disregarded.

It is certainly no defense for an IA to say that such defective work was signed off not in his capacity as IA but "only" in his capacity as the actual A&P Mechanic directly responsible for the quality of the work.[3]

This last-minute argument of Respondent ("secretarial error") contradicts his repeated assertions from the very beginning that he himself did not do the work, that he only "inspected" it. That initial position is the very reason the FAA long ago amended the Complaint to delete the charge that Respondent performed an improper overhaul. (See Amended Complaint where the work "overhaul" was deleted and the words "signed off an overhaul" were substituted therefor.)

Insofar as the alleged inconsistencies or "contradictions" of FAA Inspector Lengyel, comparing what he said at the 1st NTSB hearing and at the subsequent state court trial (testifying without notes at the latter, without government counsel and with neither the FAA nor NTSB as parties), I have very carefully compared his testimony on both occasions with all the footnoted references in the Board's Remand Order, and I find I must agree with the Chairman (dissent) that there are no true contradictions or material inconsistencies in the testimony on the two occasions. I have also followed and analyzed the alleged "inconsistencies" argued by Respondent's counsel at the second NTSB hearing (and those recited in his closing brief), but I find nothing seriously impairing the reliability, credibility or trustworthiness of Inspector Lengyel's testimony. He had satisfactory explanations as to all the apparent inconsistencies, and virtually all of them deal with non-material matters in any case. If a clever lawyer asks the same witness almost the same question on several widely separated occasions, long after the event in question, depending upon how the question is varied in form and what context or foundation is laid, and how the witness appears to be interpreting exactly what is asked of him, his answers may appear to be different when they truly are not.

[3] Once a certificated A&P Mechanic signs off the work, he is thereafter held accountable for the work and the manner of its performance. *Administrator v. Sanders*, 2 NTSB 1388, 1388, Order EA-694 (1976).

(The single remaining post-hearing Motion is resolved in the footnote below.[4])

SANCTION

The Respondent appears to be receiving a very light sanction in this case. Revocation has been the usual sanction upheld by the Board in cases where an IA signs off uninspected, pretended or seriously deficient work.[5] But in this case the FAA sought only a 60-day suspension and the Judge reduced it still further to only 45-days (based upon failure of proof as to one of the original charges at the first hearing). Nevertheless, the originally adjudicated penalty will not be disturbed in this remand decision.

FINDINGS AND CONCLUSIONS

After due consideration of all the evidence of record, and not just that discussed above, including the Board's concerns on remand, I find that the Administrator has carried his burden of proof and proven by a clear preponderance of the reliable, probative and credible evidence that the Respondent has violated §43.13(b), as charged in the Administrator's Complaint and Amended Complaint, and that his Order of Suspension should be, and thereby is, AFFIRMED, but as modified to a reduced sanction of 45-days suspension of the Respondent's Inspection Authorization (IA) certificate. I find that safety in air commerce or air transportation and the public interest require affirmation of the Administrator's Order, as modified above.

Accordingly, the Respondent's FAA Inspection Authorization (IA) certificate is hereby ORDERED SUSPENDED for a period of forty-five (45) days, effective twelve (12) days from the date of this Initial Decision, unless this Decision is further appealed. The Respondent is ordered to surrender said certificate to the FAA Eastern Regional Counsel or other duly authorized appropriate representative of the Administrator. If the Respondent fails to surrender his said certificate in accordance with the terms of this Order and Decision, then his certificate shall stand suspended starting twelve (12) days from today and continue suspended until forty-five (45) days from the date of actual surrender of said certificate to the Administrator or his duly authorized representative. IT IS SO ORDERED.

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[4] The Administrator filed a Motion To Strike certain materials and references from Respondent's post-hearing (closing) brief, as not having been introduced into evidence at the hearing or as facts having no basis in the hearing record. The Motion To Strike is GRANTED as to those documents (attachments) never offered in evidence (although I necessarily reviewed them and find nothing in them that would alter my Decision in any way), but the Motion To Strike is DENIED as to those alleged facts for which Respondent in his reply offered citations allegedly the source for the alleged facts. Again, my review of such "facts" does not persuade me to alter my findings on the merits, either as to conclusions to be drawn or my assessments of credibility.

[5] A mechanic's indifference to or noncompliance with Regulations will often be the basis for *revocation* of the IA's certificate, while at the same time the mechanic receives only a suspension. *Admr. v. Stroupe*, 2 NTSB 2219, 2221, Order EA-875 (1976). For cases in which revocation was affirmed due to shoddy work, see *Admr. v. Air East/Reddecliff*, 2 NTSB 870, 879, 886, Board Order EA-581 (1974); *Admr. v. Smolligan*, (Smolligan) 2 NTSB 9, 13, 15, Board Order EA-423 (1973); *Admr. v. Sayler*, 2 NTSB 366, Board Order EA-478 (1973); *Admr. v. Stroupe*, 2 NTSB 1675-1677, Board Order EA-748 (1975); *Admr. v. Lagein*, 1 NTSB 20, Board Order EA-10 (1967); *Admr. v. Roche*, 1 NTSB 1140, Board Order EA-229 (1971).

See also cases wherein the Mechanic's certificate was *revoked* due to improper engine overhaul: *Admr. v. Stroupe*, Dkt. SE-5552, Board Order EA-1859, served Dec. 13, 1982; *Admr. v. Karp*, 1 NTSB 112, Board Order EA-31 (1967); and *Admr. v. Cusic*, Dkt. SE-5570, Board Order EA-1898, served April 28, 1983.

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To

Part 13 Formal Complaint

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

In the Matter of: WARBELOW'S AIR VENTURES, INC.
FAA Order No. 2000-3
Docket No. CP97AL0012
Served: February 3, 2000

DECISION AND ORDER[1[1]]

This case involves allegations that Warbelow's Air Ventures, Inc. (Warbelow's), an Alaskan air carrier,[2[2]] operated three of its Piper aircraft in an unairworthy condition – two with an improperly modified fuel pump, and a third with a missing antenna for the emergency locator transmitter (ELT). The law judge found that Warbelow's violated regulations that prohibit operating: (1) unairworthy aircraft;[3[3]] and (2) aircraft with inoperable instruments or equipment, unless certain conditions are met.[4[4]] Although Complainant sought a $20,000 civil penalty, the law judge assessed $5,500.

Both parties have appealed the law judge's initial decision, a copy of which is

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[1[1]] The Administrator's civil penalty decisions are available on LEXIS, WestLaw, and other computer databases. They are also available on CD-ROM through Aeroflight Publications. Finally, they can be found in Hawkins's Civil Penalty Cases Digest Service and Clark Boardman Callaghan's Federal Aviation Decisions. For additional information, *see* 65 Fed. Reg. 1654, 1671 (January 11, 2000).

[2[2]] Warbelow's is the holder of a certificate to operate as an air carrier under 14 C.F.R. Part 135.

[3[3]] 14 C.F.R. §§ 91.7(a) provides: "No person may operate a civil aircraft unless it is in an airworthy condition."

14 C.F.R. § 135.25(a)(2) provides: "(a) [N]o certificate holder may operate an aircraft under this part unless that aircraft -- ...(2) Is in an airworthy condition and meets the applicable airworthiness requirements of this chapter, including those relating to identification and equipment."

[4[4]] 14 C.F.R. § 135.179(a)(1) provides: "No person may take off an aircraft with inoperable instruments or equipment installed unless the following conditions are met: (1) an approved Minimum Equipment List exists for that aircraft."

attached. Warbelow's has appealed the finding of violations, while Complainant has appealed the sanction amount.[5[5]] After considering the record and the briefs, Warbelow's appeal is denied, and a $6,500 civil penalty is assessed.

I. Fuel Pump Flights

In 1997, after an incident in which a fuel pump on one of Warbelow's Piper aircraft leaked during flight, FAA inspectors reviewed Warbelow's records to see if there was a general problem with fuel pump maintenance. The FAA inspectors discovered that Warbelow's Director of Maintenance at the time, Scott Rimer, had installed improperly modified fuel pumps on some of Warbelow's Piper Model PA-31 aircraft.[6[6]]

Romec was the manufacturer of the fuel pumps. Romec's fuel pumps for the right and left engines are identical except that they rotate in different directions. The right fuel pump, which rotates clockwise, is Romec Model RG8090-J*4*A. The left fuel pump, which rotates counterclockwise, is Romec Model RG8090-J7A. Romec designed the fuel pumps so that their rotation could be reversed.

According to the complaint, in September 1995, Rimer reversed the rotation of a right fuel pump and installed it on a left engine. A further allegation was that in May 1996, Rimer reversed the rotation of a left fuel pump and installed it on a right engine on another aircraft. Rimer testified that although he could not remember modifying the

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[5[5]] Any arguments raised in the parties' briefs not specifically addressed in this decision have been considered, found unworthy of discussion, and rejected.

[6[6]] It is important to note that the fuel pump that leaked, giving rise to the records review (and the discovery of the alleged improper modification of the fuel pumps) is not at issue in this case because it had not been modified. *See* p. 7 of the law judge's initial decision, where he writes that the FAA's review of Warbelow's records that uncovered the alleged fuel pump violations was in the course of an investigation of an unrelated matter. (Finding of Fact No. 49.) The fuel pumps at issue in the instant case never leaked in service.

particular fuel pumps identified in the complaint, he did modify a number of fuel pumps before installing them on Warbelow's aircraft.

The Romec manual for the fuel pumps provides: "***Avoid application of excessive torque when tightening valve cover mounting screws. Tighten screws progressively to 29-31 lb.-in. torque.***" (Emphasis added.) Rimer did not have a copy of the Romec manual when he modified the two pumps. He did not know the proper torque values and did not use a torque wrench.[7[7]] It is undisputed that if the screws are not tightened properly, the fuel pumps may leak, resulting in a fire hazard.

Warbelow's operated one of the aircraft identified in the complaint for approximately 706.7 hours[8[8]] and the other for approximately 663.4 hours[9[9]] with the improperly modified fuel pumps. There is no evidence in the record that the pumps leaked after they were modified. When the FAA inspectors found the problem, the fuel pumps were no longer available for inspection. They had already been removed from the aircraft for reasons unrelated to Rimer's reversal of the pumps' rotation. The FAA inspectors only discovered that Rimer was improperly modifying fuel pumps when they investigated a problem that turned out to be unrelated -- *i.e.*, a leak that occurred on a fuel pump that had *not* been modified.[10[10]]

The law judge held, as a factual matter, that Rimer modified the fuel pumps, and

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[7[7]] Complainant also argues, relying on the testimony of one of its inspectors (1 Tr. 97-98) that Rimer should have tightened the screws in a criss-cross fashion, rather than going around in a circle, but the law judge made no finding to this effect in his initial decision.

[8[8]] From September 19, 1995, through March 25, 1996.

[9[9]] From May 9, 1996, through September 27, 1996.

[10[10]] *See* note 6 above.

that he did so improperly, because he did not comply with the fuel pump maintenance manual and did not use a torque wrench to ensure that the screws were torqued to the proper pressure. The law judge also held, as a matter of law, that Warbelow's was responsible for Rimer's actions.

The law judge found that because nothing in the various documents comprising the engine or aircraft type certificates required the specific fuel pumps at issue (Romec Fuel Pumps Models RG8090-J4A and RG8090-J7A), he could not find that the modified pumps failed to conform to the type certificates, as Complainant had alleged. Nevertheless, the law judge held that the aircraft were unairworthy because the pumps, as improperly modified by Rimer, were not in a condition for safe operation.

A.

On appeal, Warbelow's argues that it should not be held responsible for any errors committed by its former Director of Maintenance. Warbelow's further argues that it had replacement fuel pumps in stock and available to Rimer at all relevant times, and that it maintained on its premises technical materials from which Rimer could have obtained the torque values for the screws.[11[1]] Its argument seems to be that it did all it could, as a reasonable air carrier, to comply with the regulations.

Even if Warbelow's did indeed supply all the necessary replacement fuel pumps and technical materials to Rimer, Warbelow's is still responsible for Rimer's failure to modify the pumps properly. It is well established that air carriers are responsible for regulatory violations committed by their employees while acting within the scope of their

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[11[1]] Indeed, Warbelow's claims the law judge erred in failing to find specifically that it had on its premises at all relevant times spare fuel pumps and technical guidance containing the correct torque values.

employment. In the Matter of Alika Aviation, FAA Order No. 1999-14 at 13 (December 22, 1999); In the Matter of TWA, FAA Order No. 1999-12 at 8 (October 7, 1999); In the Matter of TWA, FAA Order No. 1998-11 at 26 (June 16, 1998); In the Matter of Horizon Air, FAA Order No. 1996-24 at 5-6, 12 (August 13, 1996); In the Matter of WestAir Commuter Airlines, FAA Order No. 1993-18 at 9 (June 10, 1993); In the Matter of USAir, FAA Order No. 92-48 at 3 (December 21, 1992). Air carriers have a statutory mandate to perform their services with the highest possible standard of care, and their responsibilities are too critical to permit them to transfer their obligations to another. In the Matter of TWA, FAA Order No. 1999-12 at 9 (October 7, 1999) (citing In the Matter of WestAir Commuter Airlines, FAA Order No. 1996-16 at 6-7 (May 3, 1996)). An air carrier's duty of care is non-delegable. In the Matter of TWA, FAA Order No. 1999-12 at 9 (October 7, 1999) (citing In the Matter of USAir, FAA Order No. 1992-70 at 3-4 (December 12, 1992)).[12[12]]

Warbelow's claims that Rimer acted beyond the scope of his employment, because Warbelow's parts policy did not include modifying fuel pumps and Warbelow's never told Rimer to modify fuel pumps. This claim, however, lacks persuasiveness. It has been explained that:

> The fact that the servant's act is expressly forbidden by the master, or is done in a manner which he has prohibited, is to be considered in determining what the servant has been hired to do, but it is usually not conclusive, and does not in itself prevent the act from being within the scope of employment. A master cannot escape liability merely by ordering his servant to act carefully. If he could, no doubt few employers would ever be held liable ....

[12[12]] Even apart from Warbelow's air carrier status, the owner or operator of an aircraft is primarily responsible for its airworthiness. In the Matter of Pacific Aviation International, FAA Order No. 1997-8 at 5 n.14 (February 20, 1997) (noting that 14 C.F.R. § 91.403(a) provides that "The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in airworthy condition ....").

W. PAGE PROSSER ET AL., PROSSER AND KEETON ON THE LAW OF TORTS, § 70, at 502-503 (5th ed. 1984), *quoted in* In the Matter of TWA, FAA Order No. 1998-11 at 27 (June 16, 1998).

The record shows that in modifying the pumps, Rimer believed himself to be acting appropriately to further Warbelow's business of operating aircraft. Rimer, as Warbelow's Director of Maintenance, was authorized to perform repairs on Warbelow's aircraft. In any event, the violation found by the law judge was not that Rimer modified the pumps, but that he modified the pumps improperly. The law judge found that, at least in Alaska, "it is considered 'standard practice' to reverse [Romec fuel pumps]." (Initial Decision at 6, Finding of Fact No. 29.) The law judge stated, "the aircraft and pump manufacturers, in a sense, set up a mechanic to do ... precisely what he did do (albeit ineptly). The crux of the [fuel pump] violations comes down to proper execution, not the act itself." (Initial Decision at 21.)

Barring extraordinary circumstances, it is necessary to hold air carriers responsible for violations committed by their employees. As explained previously:

> By holding air carriers responsible for violations committed by their employees, the public is assured that air carriers will do everything in their power to ensure that their employees comply with the security and safety regulations. No one is in a better position to bring pressure to bear on air carrier employees to comply with the regulations than the air carriers themselves.

In the Matter of TWA, FAA Order No. 1999-12 at 10 (October 7, 1999).

Air carriers need to have a strong incentive to remain involved with their operation, to guide and direct their employees. As Complainant points out, narrowly construing "scope of employment" would provide an incentive to air carriers simply to

give their employees broad instructions to "do everything right," and then avoid contact with and supervision of the employees. It would not be in the interest of safety to permit an air carrier to avoid liability in a case like this.

B.

Warbelow's argues that the law judge erred in finding airworthiness violations when the evidence only showed that the fuel pumps were *potentially* unsafe. Warbelow's points out that the law judge stated as follows:

> At the time the work was performed, Mr. Rimer did not inform himself of what the torque range should be or use a torque wrench to check the screws' torque values after they were tightened. And it is undisputed that fuel leaks could be a consequence of improperly tightened screws.

(Initial Decision at 14.)

Warbelow's argues that to prove a violation, Complainant needed to prove that the fuel pumps were unsafe *in fact*, which it failed to do. Warbelow's argues that "the fact that the pumps did not leak or fail during hundreds of hours of use is virtually conclusive evidence that the screws were torqued properly ...." (Appeal Brief at 43.) As further support for its contention that the fuel pumps were safe, Warbelow's points out that during a deposition, one FAA inspector stated that the fuel pumps were safe. (Indeed, one of Warbelow's claims of error involves the law judge's failure to include as a finding of fact that the inspector originally testified that the fuel pumps were safe.)

Warbelow's is correct that it was Complainant's burden to show that the fuel pumps were not "in condition for safe operation." But the law judge did not err in finding that Complainant had carried its burden.

Warbelow's argues, in essence, that a fuel pump must be considered "safe," as long as it did not actually leak, despite improper maintenance creating the risk of fuel leakage and fire. "Safe" means "free from risk," "secure from threat," and "affording safety from danger." Merriam-Webster's New Collegiate Dictionary. Thus, if the law judge found that fuel leaks *could* have occurred, that was sufficient to show the improperly modified fuel pumps were unsafe. Similarly, when Warbelow's refers to the improperly modified fuel pumps as only "*potentially* unsafe," it is using a redundant phrase. The term "unsafe" contains within it the idea of potentiality – *i.e.*, potential harm. Warbelow's use of redundancy has the effect of minimizing the violations. Granted, if the fuel pumps had leaked and the engine had caught on fire, this would be a more serious case. But the absence of leaks does *not* mean that the pumps were safe or that no violations occurred.

Although Warbelow's contends that the case law supports its position, it is wrong. Violations have been found in many FAA civil penalty cases where there has been proof only of potential harm. *See, e.g.*, In the Matter of Polynesian Airways, FAA Order No. 1994-40 (December 9, 1994) (where the air carrier, in preparing load manifests, had failed to use the most recent figure for the weight of the aircraft, stating that "the potential safety implications from the violations in this case were quite serious, and a stiff penalty is appropriate even though there was no evidence that the weight or center of gravity limits actually were exceeded"); In the Matter of Mayer, FAA Order No. 1997-12 (stating that the law judge gave "too little consideration to the potential safety and security consequences ... when an unruly and obstinate passenger's actions call a flight attendant away from [his or] her normal duties"); In the Matter of Continental Airlines,

FAA Order No. 1990-19 (in a case imposing civil penalties for the air carrier's failure to detect test objects [objects that look like guns, bombs, and the like that are designed to test the air carrier's security system], stating that "each such failure is evidence of a breakdown in the air carrier's security screening procedures and represents a potential threat to the safety of the traveling public").

Warbelow's also argues that "[t]he law judge erred in failing to make a finding of fact that FAA investigator John Gamble originally testified (in his deposition) that the fuel pumps, as installed, were safe ...." (Appeal Brief at 24.) Warbelow's misstates the inspector's deposition testimony and takes it out of context. The inspector did not affirmatively testify that the fuel pumps were safe. Rather, when asked if he had any reason to believe that the pumps were unsafe, he responded no.[13[13]] When read in the context of his entire deposition testimony, it is clear that the inspector meant that while the fuel pumps had not leaked, still the FAA had no way of knowing whether the screws were correctly torqued, and therefore, the pumps could not be considered safe.[14[14]] Thus, the law judge did not err in failing to make the finding of fact that Warbelow's proposes.

[13[13]] Warbelow's relies on the following exchange at the deposition (Respondent's Exhibit 1 at 66-67):

> Q: ... do you have any reason to believe that the other pumps that Scott modified [the pumps identified in the complaint] were unsafe?
> A: No.

[14[14]] The following exchange in the inspector's deposition testimony (Respondent's Exhibit 1 at 67-68) illustrates this point:

> Q: So what evidence we have suggests that they were correctly torqued?
> A: Maybe. I don't know. I have no way of knowing.
> ...
> Q: Okay. Now, was there any safety risk to any Warbelow's Air Venture passenger, any member of the public, or any employee of Warbelow's Air Ventures by the operation of the two pumps in the complaint here?
> A: That's an unknown. Obviously, they didn't fail. But there was not a proper procedure performed on them, so that's creating a risk there.

C.

Warbelow's final argument regarding the fuel pump flights is that Complainant failed to prove, as a factual matter, that Rimer modified the two fuel pumps identified in the complaint. Warbelow's points out that because Rimer could only remember modifying and installing fuel pumps on Warbelow's aircraft generally but could not remember modifying the specific pumps identified in the complaint, the maintenance logs are Complainant's only proof regarding the particular pumps cited in the complaint. Warbelow's faults the FAA inspectors for basing its complaint on fuel pumps that were no longer available for inspection, and argues that it should be given the benefit of the doubt.

Somewhat ironically, given Warbelow's duty to keep accurate and complete maintenance records, Warbelow's argues that its own maintenance logs are not reliable enough to support a violation.[15[15]] For example, Warbelow's argues that Rimer may have inadvertently noted the wrong part numbers in his entries involving installation of the two fuel pumps cited in the complaint. Warbelow's points out that apparently Rimer

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[15[15]] Warbelow's, as an air carrier, is statutorily required to meet the "highest standard of care in the interest of safety" (49 U.S.C. § 44701(d)(1)(A)). An important part of the care required of an air carrier is keeping accurate and complete maintenance records. The importance of accurate and complete maintenance records cannot be overstated. As a result, it is questionable whether it would be in the interest of either safety or justice to permit Warbelow's to evade responsibility for violations reasonably inferred from its records by claiming the unreliability of the records.

To the extent that Complainant had to draw inferences from the records – to infer from the records that because Rimer indicated he installed a left fuel pump on a right engine he must have modified it – arguably it is because Warbelow's records were not complete enough. When Rimer modified pumps, he failed to state explicitly in the records that he was doing so.

made an error in listing the part number of one of the pumps he *removed.*[16][16] However, the pumps Rimer *removed* are not the subject of the complaint. Rather, it is the pumps he *installed* that are at issue.

Warbelow's contends that if Rimer made an error in an entry regarding the part number of a fuel pump he removed, then all his other entries, including the part numbers of the fuel pumps he *installed*, are suspect as well. Therefore, Warbelow's argues, the fuel pumps cited in the complaint may not even have been among the fuel pumps Rimer modified. Warbelow's also argues that it is possible that someone already modified the pumps before Warbelow's obtained them.

This is not a criminal case in which the government must prove its case beyond a reasonable doubt. Instead, Complainant is required to prove its case by a "preponderance of the reliable, probative, and substantial evidence." 14 C.F.R. § 13.223. The law judge was persuaded that Complainant met its burden of proving, as a matter of fact, that Rimer modified the two fuel pumps identified in the complaint. A careful review of the record supports the law judge's decision. While the record in this case does not provide absolute

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[16][16] For the aircraft bearing registration #N4082T, the maintenance log entry for the right engine (Lycoming Model LTIO-540-JBD) states as follows:

> 5-9-96 Removed fuel pump model RG9080J7A S/N C-9438. TSO 146.9 Hr. Bypass valve sticking. *Installed fuel pump RG9080J7A S/N C-7650-D19* 0.0 TSO. Signature Scott Rimer A&P#277469656.

(Complainant's Exhibit 2.)

Concerning the fuel pump Rimer *removed* in the above entry, a J7A fuel pump has the correct rotation for the left engine, whereas the engine at issue was a right engine that required a J4A fuel pump. The evidence also shows that the manufacturer shipped the fuel pump with this serial number [S/N C-9438] as a J4A. Thus, it appears that Rimer may have inadvertently written down that he removed a J7A when he meant to write down that he removed a J4A.

As for the fuel pump Rimer *installed* in the above entry, Romec indicated that it shipped the fuel pump with S/N C-7650-D19 as a J7A. A J7A fuel pump has the correct rotation for the left engine, whereas it is undisputed that the engine at issue was a right engine that required a J4A fuel pump. This is the basis for Complainant's allegation that Rimer must have modified the pump.

certainty regarding the two fuel pumps identified in the complaint, Complainant has met its burden.

Additionally, Warbelow's argues that Rimer's testimony that he improperly modified fuel pumps for Warbelow's and installed them on its aircraft should not be believed because he was a disgruntled employee. This argument is rejected.

A law judge's credibility determinations are entitled to deference on appeal because the law judge was able to observe the witnesses' demeanor at the hearing. *See, e.g.*, In the Matter of Squire, FAA Order No. 1999-6 at 7 (August 31, 1999) (citing In the Matter of General Aviation, FAA Order No. 1998-18 at 15 (October 9, 1998) and In the Matter of TWA, FAA Order No. 1998-11 (June 16, 1998)). Thus, a law judge's credibility determinations will not be overturned lightly.

In the instant case, Warbelow's claims that Rimer lied to retaliate against Warbelow's for demoting Rimer and then firing him. But Warbelow's demoted and fired Rimer *after* Rimer admitted to the FAA inspectors that he had been using an improper method to modify the fuel pumps.

Rimer's admission to the FAA inspectors that he failed to consult the component maintenance manual, which contained the correct torque values,[17[17]] was against his own interest – indeed, it resulted in the FAA's suspension of his mechanic certificate, Warbelow's removal of him from his position as its Director of Maintenance, and later, Warbelow's termination of his employment. Statements against interest are considered

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[17[17]] Respondent's Exhibit 9.

more reliable than self-serving statements because people do not tend to fabricate stories that would harm themselves.[18[18]]

The record in this case supports the law judge's credibility determinations rather than calling them into question. As a result, there is no reason to disturb them.

II. Emergency Locator Transmitter Flights

On January 9, 1997, Warbelow's found that the external antenna for the Emergency Locator Transmitter (ELT) was missing on one of its Piper Model PA-31 aircraft. Warbelow's deferred replacement of the antenna under a provision in its Minimum Equipment List (MEL) authorizing it to continue *scheduled* operations with the ELT inoperable for a limited period of time. Warbelow's replaced the antenna on January 14, 1997. A day earlier, however, Warbelow's operated the aircraft on an *unscheduled* roundtrip "medevac" – *i.e.*, medical evacuation – flight between Fairbanks, Alaska and Fort Yukon, Alaska.

On appeal, Warbelow's renews only one of the arguments it made unsuccessfully before the judge. Specifically, it argues that the law judge erred in concluding that the aircraft was unairworthy, given the undisputed evidence that the ELT was able to transmit a signal even without the external antenna.

Deferral of repair under an MEL "strikes a balance between having all equipment in good working order and the air carrier's operational needs." In the Matter of Horizon Air Industries, FAA Order No. 1995-11 (May 10, 1995). By specifying which equipment

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[18[18]] *See* Rule 804 of the Federal Rules of Evidence, providing an exception to the hearsay rule for statements against interest. A statement against interest is defined in Rule 804(b)(3) as "a statement which was at the time of its making so far contrary to the declarant's pecuniary or proprietary interest, or so far tended to subject the declarant to civil ... liability ... that a reasonable person in the declarant's position would not have made the statement unless believing it to be true."

may be inoperable for a specified period of time while the aircraft continues to be allowed to operate, the MEL sets out acceptable parameters of safety. In the Matter of Emery Worldwide Airlines, FAA Order No. 1997-30 at 15 (October 8, 1997). Without an applicable provision in the MEL, if an instrument or piece of equipment is inoperable, then the airworthiness certificate for the aircraft is ineffective. In the Matter of Delta Air Lines, FAA Order No. 1997-21 at 3 (May 28, 1997).

As the law judge pointed out, even though the ELT at issue has a built-in antenna, and the built-in antenna does send out a signal even when the external antenna is missing, still the ELT's signal is not as strong without the external antenna. Thus, the external antenna is not superfluous. The law judge did not err in finding an airworthiness violation.

III. Sanction

Complainant's cross-appeal involves only the amount of the civil penalty.[19[19]] In its written closing argument, Complainant asked the law judge to impose a $20,000 civil penalty, though it did not explain how it divided its proposed penalty between the fuel pump and ELT violations.

The law judge decided $20,000 was too high. Instead, he assessed a civil penalty of $5,500, which he said was $2,500 for each fuel pump violation, and $500 for the ELT violation. The law judge reasoned that the record had not established the fuel pump violations to be exactly what Complainant contended they were. He said that while an

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[19[19]] Although the law judge rejected Complainant's argument that the fuel pumps were out of conformity with the engine and aircraft type certificates, Complainant states it is not appealing this finding because the law judge found the aircraft unairworthy anyway based on the more serious finding that the fuel pumps were not in condition for safe operation.

"out-and-out type certificate violation might have been one thing," this was a "somewhat strange situation" in which the aircraft and pump manufacturers "set up" the mechanic to modify the fuel pumps, though he did so ineptly. (Initial Decision at 21.) The crux of the fuel pump violations, according to the law judge, was proper execution rather than the act itself. Also, the law judge stated, Warbelow's was unaware, not unlike the FAA, of what *could* be done and *was* being done in its maintenance department. He noted that Warbelow's provided replacement parts for its maintenance department.

The law judge concluded that the ELT violation was relatively insignificant. Indeed, he wrote, the medevac[20[20]] and scheduled route[21[21]] aspects of the flight were compelling reasons for assessing virtually no penalty, and he even thought it possible that the $20,000 sought by Complainant represented solely a fuel pump penalty. Nevertheless, the law judge stated, Warbelow's procedures at the time did not alert its personnel to the impermissibility of deferring repair of the ELT on an unscheduled flight, though Warbelow's had since corrected the problem. The law judge also stressed the need for fully functioning ELTs on unscheduled flights, particularly in Alaska. After weighing all of these considerations, the law judge determined that a $500 civil penalty

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[20[20]] The law judge noted, "The flight was in response to an emergency, late in the evening, with some 45 minutes required to get the aircraft off the ground." (Initial Decision at 19.)

[21[21]] Earlier the same day, the aircraft had flown exactly the same route on two scheduled flights. (Initial Decision at 10, Finding of Fact No. 95.) The law judge acknowledged that the need for a fully operating ELT was not the same on the medevac flight at issue as on an ordinary unscheduled flight, since the medevac flight was on a scheduled route, and in case of a crash, it likely could have been found without need for a fully functional ELT. Thus, this was a technical violation. The law judge acknowledged, however, that the regulations cannot be written to anticipate each possible situation, and that Warbelow's had still committed a violation.

was appropriate for the ELT violation. The law judge did not address the issue of financial hardship, although Warbelow's had raised it.

* * *

On appeal, Complainant argues that the law judge erred by not assessing a civil penalty for the fuel pump flights according to the Sanction Guidance Table found in FAA Order No. 2150.3A. Complainant argues that the law judge was bound to use the Sanction Guidance Table in determining the sanction, and complains that he did not even mention the Sanction Guidance Table in his decision. Complainant also complains that the law judge's decision fails to address the factors stated in 14 C.F.R. § 13.16(a)(4).[22[22]]

Complainant's sanction analysis on appeal can be summarized as follows:

- Because Warbelow's is an air carrier, it comes under Section I of the Sanction Guidance Table, which applies to "Air Carriers, Part 125 Operators, and Airport Operators."

- The fuel pump violations represent a "Non-conformity which has an adverse effect (actual or potential) on safe operation" for which the Sanction Guidance Table indicates a maximum civil penalty for each violation. FAA Order No. 2150.3A, Appendix 4, Section I.L.3.

[22[22]] Strictly speaking, Section 13.16(a)(4) is inapplicable to the instant case because it applies only to hazardous materials violations. It provides in relevant part:

> An order assessing civil penalty *for a violation under the Hazardous Materials Transportation Act, or a rule, regulation, or order issued thereunder*, will be issued only after consideration of –
> (i) The nature and circumstances of the violation;
> (ii) The extent and gravity of the violation;
> (iii) The person's degree of culpability;
> (iv) The person's history of prior violations;
> (v) The person's ability to pay the civil penalty;
> (vi) The effect on the person's ability to continue in business;
> (vii) Such other matters as justice may require.

(Emphasis added.)

Nonetheless, as a matter of policy, the FAA has determined that similar criteria should be considered in assessing civil penalties in non-hazardous materials types of cases. In the Matter of Luxemburg, FAA Order No. 1994-18 at 6 (June 22, 1994) (citing In the Matter of Northwest Airlines, FAA Order No. 1990-37 at 12 n.9 (November 7, 1990) and 55 Fed. Reg. 27,548, at 27,569 (1990)).

- With more than six aircraft, Warbelow's is a Group III air carrier, and all of the violations occurred prior to January 21, 1997.[23][23] As a result, Complainant argues, the range of a maximum civil penalty per violation is $5,500 to $10,000.

- The law judge mistakenly treated all of the flights on each aircraft as one violation, though each flight constitutes a separate violation.

- The record does not establish the precise number of flights, but it does establish that Warbelow's operated the aircraft for a total of 1370.1 hours with the unsafe fuel pumps, and the average Warbelow's flight is less than one hour. Using a conservative estimate of 1000 unsafe flights, multiplied by a maximum civil penalty per flight of $5,500 to $10,000, leads to a civil penalty of $5.5 to $10 million.

- The multi-flight cap must be applied. For a Group III air carrier like Warbelow's, the maximum civil penalty ordinarily imposed would be $50,000. FAA Order No. 2150.3A, Appendix 1, p. 103-8.

- Warbelow's had a violation history.[24][24]

- Warbelow's presented only unsupported, conclusory assertions regarding its ability to pay, and offered nothing to establish that a $20,000 civil penalty would prevent it from continuing in business.

- Even if one treats the fuel pump flights as only two violations (one per aircraft), the Sanction Guidance Table still calls for a civil penalty in the range of $11,000 to $20,000 (2 violations x $5,500 to $10,000 per violation).

- The absolute minimum for the fuel pump violations is $11,000, while $20,000 is fully warranted.

- There is no reason to choose the low end of the range – rather, the high number of flights and hours militates towards the high end of the range.

Warbelow's counters that:

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[23][23] Thus, Warbelow's is exempt from the adjustment for inflation that took effect on January 21, 1997. *See* 14 C.F.R. Part 13, Subpart H (entitled "Civil Monetary Penalty Inflation Adjustment").

[24][24] As the law judge noted, Complainant conceded that Warbelow's violation history "is not a significant factor ..." (Initial Decision at 21 n.15). The law judge agreed. (*Id.*)

- Complainant should not be permitted to invoke the Sanction Guidance Table on appeal after having failed to offer it into evidence before the law judge.[25[25]]

- Even if the Sanction Guidance Table were part of the record, the law judge had the authority to assess a civil penalty outside the recommended ranges, based on his judgment and the factors set out in 49 U.S.C. § 46301(e) and 14 C.F.R. § 13.16(a)(4). (Again, Section 13.16(a)(4) is inapplicable because it applies only to hazardous materials violations. For the text of Section 13.16(a)(4), *see* note **Error! Bookmark not defined.**.)

- The law judge considered the appropriate factors and applied them to the evidence.

- The amount assessed by the law judge is reasonable given all the evidence.

- The Administrator should defer to the law judge's judgment and his intimate familiarity with the record.

- The Administrator cannot go outside the record and therefore cannot apply the Sanction Guidance Table on appeal.

Complainant must justify to the law judge the amount of the civil penalty it seeks. (*See* In the Matter of Luxemburg, FAA Order No. 1994-18 (June 22, 1994), stating that Complainant bore the burden of justifying the amount of the civil penalty it sought and citing 14 C.F.R. § 13.224(a), which provides that, except in the case of an affirmative defense, the burden of proof is on the agency.) Here, Complainant failed to explain to the

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[25[25]] Warbelow's elaborates as follows: "At no time during the hearing, or in any written presentation to the law judge, did the FAA suggest to the law judge that he was bound by the Order and Table. At no time did the FAA introduce into evidence any part of the Order and/or Table, nor did the FAA introduce any testimony from any FAA witness explaining how the Order and Table should be applied. The FAA briefly referred to the Table in its written closing argument (see Complainant's Written Closing Argument at 11), but did not provide a copy of the relevant portions, did not explain how the Table might apply to the alleged violations, and did not even break down the $20,000 lump sum into amounts to which different provisions of the Order and Table might apply. It is not at all surprising that the law judge did not mention either the Order or Table, or discuss whether he felt obliged to apply them." (Reply Brief at 7.)

law judge, either through witnesses or in its written closing argument, exactly how it used its sanction guidance to arrive at a figure of $20,000.

Specifically, Complainant failed to explain to the law judge why, according to the Sanction Guidance Table, the fuel pump violations deserved a maximum civil penalty, or what the minimum, moderate, and maximum ranges of a maximum civil penalty were for an air carrier the size of Warbelow's.[26][26] Even on appeal, Complainant has not explained why the fuel pump violations represent a "Non-conformity which has an adverse effect (actual or potential) on safe operation," (FAA Order No. 2150.3A, Appendix 4, I.L.3) which ordinarily calls for a maximum civil penalty, rather than a "Non-conformity which may have an adverse effect on safety of operation," (FAA Order No. 2150.3A, Appendix 4, I.L.2), which ordinarily calls for a moderate civil penalty.

Additionally, Complainant did not explain to the law judge that its sanction guidance provides for penalties proportional to the size of an air carrier, or that Warbelow's is a "Group III" carrier, why, and what that means.[27][27] Nor did Complainant explain to the law judge that its sanction guidance provides for a cap on civil penalties for violations involving multiple flights, or tell the law judge what the cap was in this case.

By failing to explain its proposed sanction adequately, Complainant in effect was asking the law judge simply to *trust* Complainant that its proposed sanction was

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[26][26] The ranges for a Group III carrier are as follows:
Maximum $5,500 – $10,000
Moderate $3,000 - $5,500
Minimum $750 - $3,000.
(FAA Order No. 2150.3A, Appendix 1, p. 106.)

[27][27] Complainant brought up the fact that Warbelow's is a Group III air carrier in its appeal brief for the first time.

appropriate. On appeal, Complainant may not properly fault the law judge for failing to follow the agency's sanction guidance, when Complainant failed to offer the sanction guidance into the record or to ask the law judge to take judicial notice of it.[28][28]

At the same time, contrary to Warbelow's argument, the Administrator has both the authority and duty to impose the agency's policy on appeal.[29][29] The sanction guidance indicates that the computation should not be done simply by multiplying the sanction for a single violation by the number of flights. FAA Order No. 2150.3A, p. 1. Instead, "judgment should be exercised in determining the seriousness of the violations and applying a sanction that will serve to deter future violations by the violator or others similarly situated: *i.e.*, the totality of the circumstances surrounding the case should be considered ...." (*Id.*)

Under the totality of the circumstances, a $3,000 sanction per fuel pump, which is at the low end of the possible penalty ranges, will suffice to deter future violations by Warbelow's and others similarly situated.[30][30] Thus, a $6,000 civil penalty is assessed for the two fuel pump violations.

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[28][28] Note that ordinarily in the law, parties may not raise new arguments and material for the first time on appeal without showing a good reason for failing to raise them below.

[29][29] *See, e.g.*, In the Matter of [Air Carrier], FAA Order No. 1996-19 (June 4, 1996), stating that "if the law judge does not follow agency policy, the agency may impose that policy by reversing the law judge's decision on appeal (citing Association of Administrative Law Judges v. Heckler, 594 F. Supp. 1132, 1141 (D.D.C. 1984)).

[30][30] Warbelow's argues, in defense of the civil penalty assessed by the law judge, that even though the law judge did not expressly mention Warbelow's ability to pay as one of the factors he considered, still the evidence of inability to pay was in the record and it must be assumed that the law judge was aware of it. (Reply Brief at 27.) To support its claim that a $20,000 civil penalty would adversely affect Warbelow's ability to continue in business, Warbelow's offered into evidence a copy of its 1996 corporate income tax return (Respondent's Exhibit 25), as well as the testimony of Mr. Arthur Warbelow's, owner of the company, that the company's net after-tax income in 1997 was likely to be close to zero, and that a $20,000 civil penalty was simply too high. (2 Tr. 349-50.)

Complainant's appeal regarding the sanction involves only the fuel pump violations, so the law judge's assessment of a $500 civil penalty for the ELT violation will not be disturbed.

IV. Conclusion

Warbelow's appeal is denied. Complainant's appeal is granted in part, and a civil penalty of $6,500 is assessed.[31][31]

JANE F. GARVEY, ADMINISTRATOR
Federal Aviation Administration

Issued this 2nd day of February, 2000.

In its reply brief, Warbelow's argues that in the absence of contrary evidence, the law judge must assume Mr. Warbelow's testimony to be true. (Reply Brief at 28.) This argument is incorrect. The law judge had the authority to evaluate Mr. Warbelow's demeanor and testimony and find his testimony either credible or not. The law judge's failure to mention inability to pay may indicate that he did not find Warbelow's evidence particularly compelling. It was Warbelow's burden to prove its affirmative defense of financial hardship, and a civil penalty cannot be reduced on the basis of financial hardship without adequate proof. In the Matter of TWA, FAA Order No. 1999-12 at 10 (October 7, 1999) (citing In the Matter of Hampton Air Transport, FAA Order No. 1997-11 at 12). Mr. Warbelow's testimony, as owner of the company, can be considered self-serving. It would have been far more compelling for Warbelow's to introduce the testimony of an independent, unbiased expert witness who could interpret its tax records and explain how the proposed penalty would affect Warbelow's ability to continue in business. *Compare* In the Matter of Blue Ridge Airlines, FAA Order No. 1999-15 at 11 (December 22, 1999), where the testimony of financial hardship came from someone who was in a position to know and who was not only independent, but was, "if anything, hostile to Blue Ridge Airlines."

In any event, this decision assesses a penalty far less than the $20,000 sought by Complainant.

[31][31] Unless Respondent files a petition for review with a Court of Appeals of the United States within 60 days of service of this decision (under 49 U.S.C. § 46110), this decision shall be considered an order assessing civil penalty. *See* 14 C.F.R. §§ 13.16(b)(4) and 13.233(j)(2) (1999).

IOP

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To

Part 13 Formal Complaint

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, DC

Served: July 22, 1992
FAA Order No. 92-48

In the Matter of:	)	
	)	Docket No. CP91NM0183
USAIR, INC.	)	

DECISION AND ORDER

Complainant has appealed from the oral initial decision issued by Administrative Law Judge Burton S. Kolko at the conclusion of the hearing held in this matter on October 31, 1991, in Seattle, Washington.[1/] The law judge held that Complainant did not establish that Respondent USAIR, Inc., operated an unairworthy aircraft in a careless or reckless manner, in violation of Sections 121.153(a)(2)[2/]

[1/] A copy of the law judge's oral initial decision is attached.

[2/] 14 C.F.R. § 121.153(a)(2) provides:

Aircraft requirements: General

(a) Except as provided in paragraph (c) of this section, no certificate holder may operate an aircraft unless that aircraft --

(2) Is in airworthy condition and meets the applicable airworthiness requirements of this chapter, including

those relating to identification and equipment. and 91.9[3/] of the Federal Aviation Regulations (FAR), 14 C.F.R. §§ 121.153(a)(2) and 91.9(a). Complainant has appealed from the law judge's dismissal of the

complaint. For the reasons set forth below, the law judge's decision is reversed, and the civil penalty is reduced from $15,000 to $5,000.

On June 9, 1989, Respondent operated civil aircraft N804US, a McDonnell-Douglas 80 (MD-80), as regularly scheduled Flight 2831 from Seattle-Tacoma International Airport (SEATAC) in Washington to Bellingham, Washington. The location of the aircraft prior to departure required that it be pushed back from the gate by a tug vehicle. The pushback operation was under the direction of Kat Diamond, a recently hired employee of Elsinore, the company contracted by Respondent to conduct pushback operations at SEATAC International Airport.[4/] Ms. Diamond was in contact with the tug and the aircraft by use of a headset.[5/] Immediately after the tug driver initiated pushback,

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[3/] Section 91.9 of the FAR, 14 C.F.R. § 91.9 (codified as Section 91.13 of the FAR, 14 C.F.R. § 91.13, effective August 18, 1990) provided: "No person may operate an aircraft in a careless or reckless manner so as to endanger the life or property of another."

[4/] Mary Greer, Respondent's Seattle Station Manager, testified that Respondent maintained direction and control of Elsinore. Richard Yeatter, Respondent's Director of Maintenance Training, testified that Respondent provided training for Elsinore. Respondent has not denied responsibility for the actions of its pushback operations contract personnel.

[5/] According to Respondent's Memorandum of June 16, 1989, Ms. Diamond was still in training at the time of the incident. On the date of the incident, her supervisor decided that Ms. Diamond could work without supervision.

the aircraft's nose gear water deflector[6/] rode up onto a chock that had been improperly placed behind the nose wheel.[7/] Ms. Diamond instructed the tug driver to stop[8/] and then to pull the aircraft back. The water deflector popped up and and then down as it was pulled off the chock. Ms. Diamond removed the improperly placed chocks, but she did not tell the captain what had happened.

[6/] The nose gear water deflector or "splash guard" is installed on the sides and rear of the MD-80 nose gear wheels. The nose gear water deflector prevents water spray from entering the engine air inlets as the aircraft rolls through standing water.

[7/] Chocks should only be placed fore and aft of the left main wheels of the MD-80, according to Respondent's General Maintenance Manual. Chocks should not be placed against the nose wheels of the MD-80 aircraft. Respondent's Quality Assurance Director, Joseph Kania, testified that Elsinore employees followed the same chocking procedures as provided in Respondent's maintenance manual.

[8/] Ms. Diamond did not testify at the hearing. The law judge did not admit into evidence her handwritten statement concerning the incident. The law judge excluded the statement because he found it, and a later clarifying statement by Ms. Diamond given to FAA Safety Inspector John Hubbard, inconsistent and not reliable, probative or credible.

Although Ms. Diamond's initial statement contained misspellings and incorrect terminology for aircraft parts, it was error for the law judge to exclude it. The law judge should have admitted the statements as admissible hearsay under Section 13.222(c), 14 C.F.R. § 13.222(c), and then accorded them whatever weight he found apropriate. The record contains independent evidence of what Ms. Diamond witnessed during the pushback that tends to corroborate the documents excluded by the law judge. Inspector Hubbard and John Matthews, the captain of Flight 2831, testified at the hearing as to what Ms. Diamond told them after the incident. Further evidence of Ms. Diamond's actions is found in the following documents: Respondent's internal accident report of June 9, 1989; Respondent's inter-office memorandum of June 16, 1989; Captain Matthews' report of June 26, 1989, and Respondent's September 6, 1989 correspondence. These documents were admitted into evidence at the hearing.

When the tug stopped initially, Flight 2831's Captain, John Matthews, heard a loud noise coming from the nose wheel area underneath his seat in the cockpit. Captain Matthews asked Ms. Diamond whether the tow bar had broken. He turned the aircraft wheel well lights on so that she could see underneath the aircraft because it was night. Ms. Diamond reported to him that the tow bar had not broken and that everything was "okay." Pushback resumed, and the aircraft proceeded to taxi and take off.

Captain Matthews testified that after takeoff the landing gear was retracted, and the nose gear red warning light came on. He verified

that the landing gear was up, but the red light would not go off. The captain stated that there was no wind noise coming in to indicate that the landing gear doors were open. He testified that he decided not to recycle the gear to see if the red warning light would go out because of the "incident" that had occurred during pushback. Captain Matthews decided to return to the airport and land. He testified that he did this as a safety precaution although everything else was normal and the aircraft flew fine. The aircraft returned and landed at SEATAC International Airport without further incident.

After landing, Captain Matthews testified, he went outside the aircraft to investigate. According to his report dated June 26, 1989, he asked Ms. Diamond what had occurred, and she responded that the nose wheel had hit a "block." Captain Matthews felt around the nose wheel deflector and kicked it. One side of the nose gear water deflector swung free. He testified that the crack on the water deflector had not been visible until he moved the deflector. He claimed that if Ms. Diamond had told him prior to takeoff that the nose gear water deflector had been on the chock and had popped into the air, he would have made a detailed inspection at that time.

According to the mechanic, who replaced the nose gear water deflector after the aircraft returned to the airport, the water deflector had broken on the right side. As a result, the right side of the deflector swivelled freely and separately from the rest of the water deflector. According to the mechanic, the broken portion of the water deflector could have rotated downward when the plane left the ground, blocking the nose wheel door from closing. The break, the mechanic explained, was difficult to detect visually without lifting the water deflector. Joseph Kania, Respondent's Quality Assurance Director,

testified that the broken water deflector could have prevented the landing gear doors from closing completely.

The law judge held that Complainant did not establish that Respondent knew or should have known that it had an aircraft with a defect that departed from its type design, and rendered it potentially unsafe. According to the law judge, nothing known to Respondent through its agents prior to takeoff indicated that the red light would go on after takeoff.

The Administrator has held that an aircraft is airworthy when: 1) it conforms to its type design or supplemental type design and to any applicable airworthiness directives, and 2) is in a condition for safe operation. In the Matter of Watts Agricultural Aviation, FAA Order No. 91-8, at 17 (April 11, 1988), (citing Section 603(c) of the Federal Aviation Act of 1958, as amended, 49 U.S.C. App. § 1423(c)), appeal docketed, No. 91-70365 (9th Cir. 1991).

John Hubbard, an FAA Aviation Safety Inspector, testified that the nose gear water deflector on the MD-80 is part of the type design for that aircraft, and that a broken deflector does not conform to the aircraft's type certificate. That alone rendered the aircraft unairworthy. Airworthiness is not synonomous with flyability. An aircraft that does not conform to its type certificate is unairworthy, even if it may be in a condition for safe operation. Morton v. Dow, 525 F.2d. 1302, 1307 (10th Cir. 1975).

Respondent's aircraft also was not in a condition for safe operation. Mr. Hubbard, the FAA Aviation Safety Inspector, and Mr. Kania, Respondent's Quality Assurance Director, agreed that the broken deflector could have prevented the landing gear doors from closing during the flight. Both also agreed that water or other debris

ingested by the engine during takeoff or landing could have caused safety problems. Mr. Hubbard gave as examples of safety problems an engine flameout and a possible crash. These facts alone made the aircraft unsafe for operation with the broken water deflector. Mr. Kania ignored the safety problems associated with water or debris ingestion when he concluded that the aircraft could operate safely without the deflector.

The law judge correctly noted that it was necessary for Complainant to prove that Respondent knew or should have known before takeoff that the aircraft was unairworthy, i.e., that the nose gear water deflector was broken. See Daily v. Bond, 623 F.2d 624, 626 (9th Cir. 1980).

Respondent was responsible for the acts and omissions of its captain and ground crew that were within their scope of employment. Cf. Administrator v. Reeves Aviation, Inc., NTSB Order EA-2675 (February 2, 1988) (air carrier is charged with the duty to maintain its aircraft and is responsible for the acts of its employees in the scope of their employment). Upon initial arrival of the MD-80 at SEATAC International Airport, Respondent's ground crew improperly chocked the nose gear wheels, contrary to Respondent's general maintenance manual. The pushback operator was inadequately trained and supervised. Ms. Diamond saw the nose gear water deflector ride up on the chock, and saw it pop in and out. She should have informed the captain about what she saw happen to the water deflector. Captain Matthews testified that if she had told him at the time what had happened to the deflector, he would not have taken off without a detailed inspection of the nose gear wheel area.

When the plane and tug stopped abruptly at Ms. Diamond's direction,

Captain Matthews heard what he described as a loud noise, coming from the nose gear wheel area. His prior experience indicated to him that the noise may have resulted from a broken tow bar. Once Ms. Diamond told the captain that the tow bar had not broken, Captain Matthews should have investigated further what caused the loud noise. He should not have relied on the opinion of a pushback operator that everything was "okay," because he should have suspected that her opinion was beyond the expertise associated with her position. The captain or co-pilot should have investigated, or a mechanic should have been called. Although the crack on the broken deflector was difficult to detect visually, once the deflector was moved, it became clear that it was broken.

The failure of Respondent's pushback operator to communicate to Respondent's captain what happened to the nose gear water deflector, together with the captain's failure to further investigate the incident, are omissions attributable to Respondent. Air carriers have a duty to perform their services with the highest possible degree of safety. See Section 601(b) of the Act, 49 U.S.C App. § 1421(b). Respondent knew or should have known that the MD-80 was not airworthy prior to takeoff. Consequently, Respondent operated an unairworthy aircraft in violation of Section 121.153(a)(2) of the FAR, 14 C.F.R. § 121.153(a)(2).

Respondent's operation of an unairworthy aircraft also constituted a violation of Section 91.9 of the FAR, 14 C.F.R. § 91.9. That section prohibits any careless or reckless practice in which danger is inherent. See In the Matter of Terry and Menne, FAA Order No. 91-12, at 9 (April 12, 1991). Absent extraordinary circumstances, careless or reckless operation of an aircraft follows as a residual violation when operation

of an unairworthy aircraft is established. See Administrator v. Valley, NTSB Order No. EA-3283, at 6 (May 3, 1991); Administrator v. Gasper, NTSB Order No. EA-3242, at 3, n. 4 (January 14, 1991).

Respondent also argues that if the law judge's decision is reversed, the Administrator on appeal may not impose a civil penalty in this case. Respondent argues that no civil penalty can be imposed because Complainant did not specifically argue in its appeal brief that a civil penalty would be appropriate.

This argument must be rejected. Complainant, in its appeal brief, argues for the complete reversal of the law judge's decision. Complainant's request for reinstatement of the $15,000 civil penalty sought in the complaint is implicit in the appeal. The issue of civil penalty is properly before the Administrator on appeal.

Under Sections 901 and 905 of the Federal Aviation Act, as amended, 49 U.S.C. App. §§ 1471, 1475, Respondent is subject to a maximum civil penalty of $10,000 for each violation. Neither party has presented arguments addressing the amount of the civil penalty. A $15,000 civil penalty, however, is not required under the facts of this case. A $5,000 civil penalty adequately reflects the seriousness of the violations committed by Respondent, and will deter future similar violations. A civil penalty in the amount of $5,000 is assessed.[9/]

THOMAS C. RICHARDS, ADMINISTRATOR
Federal Aviation Administration

Issued this 20th day of July, 1992.

[9/] Unless Respondent files a petition for review with a Court of Appeals of the United States within 60 days of service of this decision (under 49 U.S.C. App. § 1486), this decision shall be considered an order assessing civil penalty. See 14 C.F.R. §§ 13.16(b)(4) and 13.233(j)(2) (1992).