

**U.S. DEPARTMENT OF TRANSPORTATION**

**FEDERAL AVIATION ADMINISTRATION**

**WASHINGTON, DC 20591-0004**

AERONAUTICAL REPAIR STATION )  
ASSOCIATION )

Complainant )

vs. )

AIRBUS )

Respondent )

Docket No. \_\_\_\_\_

**PART 13 FORMAL COMPLAINT**

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**PART 13 FORMAL COMPLAINT**

**I. INTRODUCTION**

Pursuant to 14 CFR section 13.5 of the Federal Aviation Regulations<sup>1</sup> (FAR), Complainant, the Aeronautical Repair Station Association (Complainant, ARSA or the Association), respectfully submits this Formal Complaint to the Administrator.

Complainant alleges that Airbus, a type certificate holder under section 21.29 is in violation of section 21.50(b) because one of its component suppliers, Liebherr Aerospace Lindenberg GmbH (Liebherr), has refused to make Instructions for Continued Airworthiness (ICAs) available to persons required to follow those instructions.

Complainant requests that the FAA institute an investigation and issue an order finding that Airbus is in violation of section 21.50(b). The information submitted herein will enable the FAA to expeditiously conclude an informal investigation as contemplated by section 13.5(i). However, if there is any doubt about the merits of Complainant's position, ARSA urges the Administrator to issue an order of investigation in accordance with Part 13, Subpart F.

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

ARSA represents the interests of independent aircraft maintenance and alteration facilities before the Federal Aviation Administration (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 the requirements of the FAR.

Respondent Airbus is the holder of Type Certificate (TC) No. A28NM. (IOP 1) The TC covers various models of Airbus A318, A319, A320 and A321 aircraft. The particular focus of this Complaint is the Airbus A320 although the facts and circumstances that pertain to that aircraft may also apply to other models listed on TC A28NM. Respondent's address, as noted on the TC, is:

1, Rond-Point Maurice Bellonte  
31707 Blagnac, France

## **II. LIST OF ITEMS OF PROOF (IOP)**

- **IOP 1** – Airbus Type Certificate No. A28NM
- **IOP 2** – Aerotron AirPower, Inc.'s (Aerotron) request, and Liebherr's refusal
- **IOP 3** – Aerotron's request to Airbus
- **IOP 4** – Aerotron's air agency certificate and ratings
- **IOP 5** – Texas Pneumatic Systems, Inc.'s (TPS) initial request to Liebherr
- **IOP 6** – TPS' initial request to Airbus
- **IOP 7** – TPS' air agency certificate and operations specifications
- **IOP 8** – TPS' second request to Liebherr
- **IOP 9** – TPS' second request to Airbus
- **IOP 10** – Watts Agricultural Aviation, Inc. civil penalty case
- **IOP 11** – FAA legal interpretation (Whitlow letter)

- **IOP 12** – FAA legal interpretation (AGC-210 letter)
- **IOP 13** – NTSB safety recommendation (Emery accident)
- **IOP 14** – Excerpt from NTSB accident report (Alaska Airlines)
- **IOP 15** – Aero Lectrics, Inc. certificate action case
- **IOP 16** – Empire Airlines, Inc. civil penalty case
- **IOP 17** – Missouri Aerotech Industries, Inc. certificate action case
- **IOP 18** – Alphin certificate action case
- **IOP 19** – Warbelow’s Air Ventures, Inc. civil penalty case
- **IOP 20** – USAir, Inc. civil penalty case

### **III. FACTS**

On May 14, 2003, Aerotron AirPower, Inc. (Aerotron), a Part 145 repair station, sent an e-mail to Erika Matern, Liebherr Customer Service-Technical Services requesting a price quote for Liebherr Component Maintenance Manual (CMM) 21-52-16 for Part No. 1263A0000 (air cycle machine). On May 19, 2003, Ms. Matern replied that Liebherr “does not sell such documentation to repair stations. We only deliver to the aircraft operators. Therefore we are not in position to supply the requested technical publication.” (IOP 2)

On August 15, 2003, Aerotron sent a letter to Donna Miller of Airbus’ Herndon, Virginia office requesting a copy of the above ICA (IOP 3). The letter informed Airbus that Liebherr had refused to provide the required information and a copy of that refusal was enclosed. Aerotron identified itself as an FAA-certificated repair station that was rated to perform maintenance on the air cycle machine (IOP 4). As of the date of this Formal Complaint, Airbus has not responded to Aerotron’s request. Complainant submits that this is a refusal to provide ICAs contrary to section 21.50(b).

On August 7, 2003, Texas Pneumatic Systems (TPS), Inc. sent identical letters to Liebherr (IOP 5) and Airbus (IOP 6) requesting quotations for the purchase of technical manuals for Liebherr Part Nos. 1303A0000 (flow control valve) and 2290A050000 (check valve). TPS identified itself as an FAA-certificated repair station that held Class 1 and Class 2 accessory ratings (IOP 7). As of the date of this Formal Complaint, TPS has not received a reply from either Liebherr or Airbus. Complainant submits that these are refusals contrary to section 21.50(b).

On September 17, 2003, TPS sent identical letters to Liebherr (IOP 8) and Airbus (IOP 9) reiterating its request for the flow control valve and check valve referenced above. In addition, it requested the CMM for Liebherr Part No. 751A0000 (a different flow control valve). As of the date of this Formal Complaint, neither Liebherr nor Airbus has responded to TPS. Complainant submits that these are refusals to provide required information contrary to section 21.50(b).

#### **IV. ANALYSIS**

##### **A. The Meaning of Airworthiness**

The FAA is required by statute to oversee the design, production, operations and maintenance of civil aviation products and other articles.<sup>2</sup> This is accomplished through a comprehensive regulatory system that covers each person engaging in these activities.<sup>3</sup> Although the rules vary depending on the specific FAA certificate or approval obtained, the concept of airworthiness applies equally to all regulated persons. Indeed, it allows each entity to function as part of an integrated civil aviation system where safety is maintained at each stage of an article's "regulatory life."

When an article is designed, it must meet the applicable airworthiness standards (including the ICA requirements) contained in Parts 23, 25, 27, 29, 31, 33 and 35 of the FAR. Each article must be produced in conformity with its approved design and be in condition for safe operation when it leaves the control of the design or production approval holder (PAH).

Similarly, aircraft must be operated in an airworthy manner. The regulations, guidance material and enforcement cases make it abundantly clear that this can only be achieved when the maintenance, preventive maintenance and alterations are performed in an airworthy manner.

The "airworthiness" requirement is derived from 49 U.S.C. section 44704(d) of the Federal Aviation Act, 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.

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<sup>2</sup> 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 component part.

<sup>3</sup> 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."

Airworthiness has been further explained by case law. 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 Federal Aviation Act of 1958, as amended, 49 USC App. 1423 (c)) (IOP 10). Moreover, as the 10<sup>th</sup> Circuit Court of Appeals made clear in Morton v. Dow, 525 F.2d 1302, 1307 (10<sup>th</sup> Cir. 1975) “[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.” (emphasis added.)

The FAA has established the ICAs 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. ICAs are required to be prepared during certification, revised as necessary to reflect operating experience and, most importantly, made available to owner/operators and maintenance providers. The ICAs provide basic safety information that allows maintenance and alteration to be performed in accordance with instructions developed by those in the best position to provide them—the manufacturers of civil aviation articles.

Advisory Circular 33.4-1<sup>4</sup> confirms the importance of ICAs and recognizes that airworthiness is the link that keeps the safety chain together: “A new aircraft engine with an airworthiness approval tag...is viewed as airworthy, and...adherence to the ICA’s will play a key role in keeping that engine airworthy through its operational life, or in a state of ‘continued airworthiness’.” This principle applies equally to all civil aircraft, propellers, appliances and components.

Notwithstanding the clear language of section 21.50(b), the FAA has been slow in enforcing the design approval holder’s obligation to make ICAs available to maintenance providers. On the other hand, the agency has vigilantly enforced the requirement that maintenance be performed in accordance with the ICAs. 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. Indeed, systems 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.

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<sup>4</sup> Advisory Circular 33.4-1 contains guidance for preparing ICA for aircraft engines.

B. Airbus Must Furnish Aerotron and TPS with ICAs

Since 1941, the federal government has required that manufacturers of civil aviation products prepare instructions relating to their installation, operation, servicing and maintenance. In the case of aircraft engines, the rules specifically required that the manuals be made available to persons performing maintenance under the applicable regulations.<sup>5</sup> Additionally, Technical Standard Orders (TSOs) have consistently required development and dissemination of maintenance information. Between 1941 and 1980 (when the current version of section 21.50(b) were adopted), the FAA and its predecessor agency have consistently required that the holders of design approvals for aircraft, aircraft engines, propellers and appliances prepare instructions for performing maintenance.

Section 21.50(b) contains the current legal requirement for establishing and distributing the ICAs:

[t]he 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, or as specified in the applicable airworthiness criteria for special classes of aircraft defined in § 21.17(b), as applicable, 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. 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.

Section 21.50 applies to the holder of a design approval, including either a type certificate or supplemental type certificate for an aircraft, aircraft engine or propeller for which application was made after January 28, 1981.

Complainant, through the experience of its members Aerotron and TPS, respectfully submits that Airbus, by not providing these certificated and appropriately rated repair stations with the ICAs for the Liebherr air cycle machine (Part No. 1263A0000), flow control valves (Part Nos. 1303A0000 and 751A0000) and check valve (Part No. 2290A050000), has violated section 21.50(b).

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<sup>5</sup> See Parts 6, 7, 13 and 14 of the Civil Air Regulations (CARs) and corresponding Parts of the recodified FAR.

1. Airbus is the Holder of the Airbus A320 Design Approval

Complainant submits that a design approval holder includes the holder of a type certificate, supplemental type certificate, Parts Manufacturer Approval (PMA) or Technical Standard Order Authorization (TSOA). Airbus holds TC No. A28NM and is clearly covered by section 21.50(b) (see IOP 1 at page 1). This TC includes the A320-100/200 series of aircraft (see IOP 1 at page 13).

2. Application for A320 TC was made after January 28, 1981

FAA personnel in the FAA's Northwest Mountain Region have advised Complainant that the reference date of application for the Airbus A320 TC is February 7, 1984. The reference date of application for all other Airbus models listed on TC A28NM was also subsequent to January 28, 1981.<sup>6</sup>

The FAA first issued the TC for the A320-100/200 series aircraft on December 15, 1988 with the approval of the A320-111 and 211. Further approvals for other A320 models were issued between July 6, 1989 and December 12, 1996.

3. The ICAs for the Airbus A320 include the CMMs for the Liebherr components

a) The Liebherr components are appliances

Part 25, Appendix H, paragraph H25.1(b) mandates that the ICAs for each airplane must include the ICA for each engine and propeller (hereinafter designated as "products"), for each appliance required by this chapter, and any required information relating to the interface of those appliances and products with the airplane.

"Appliance" is defined in section 1.1 to mean "any instrument, mechanism, equipment, part, apparatus, appurtenance, or **accessory**, including communications equipment, that is used or intended to be used in operating or controlling an aircraft in flight, is installed in or attached to the aircraft, and is not part of an airframe, engine, or propeller." (emphasis added.)

The components referenced in this complaint, flow control valves (Part Nos. 751A0000 and 1303A0000), check valve (Part No. 2290A050000) and air cycle machine (Part No. 1263A0000-02) are appliances within the meaning of 14 CFR section 1.1. The ratings appropriate for maintenance, preventive maintenance and alteration of these articles are the accessory ratings held by Aerotron, TPS and other similarly situated repair stations. They are described in section 145.35(f), which provides in pertinent part:

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<sup>6</sup> Complainant was advised that the reference date of application for the Airbus Model (1) A321 was November 30, 1989, (2) A319 was June 17, 1992, and (3) A318 was November 15, 2001.

*Accessory ratings.*

- 1) Class 1: Mechanical accessories that depend on friction, hydraulics, mechanical linkage, or pneumatic pressure for operation, including aircraft wheel brakes, mechanically driven pumps, carburetors, aircraft wheel assemblies, shock absorber struts and hydraulic servo units.
- 2) Class 2: Electrical accessories that depend on electrical energy for their operation, and generators, including starters, voltage regulators, electric motors, electrically driven fuel pumps magnetos, or similar electrical accessories.
- 3) Class 3: Electronic accessories that depend on the use of an electron tube transistor, or similar device, including supercharger, temperature, air conditioning controls, or similar electronic controls.

The ICAs must be supplied either by the manufacturer of an appliance or product installed in the airplane, or by the manufacturer of the airplane. Indeed, section H25.1 (b) provides:

[I]f Instructions for Continued Airworthiness are not supplied by the manufacturer of an appliance or product installed in the airplane, the Instructions for Continued Airworthiness for the airplane must include the information **essential to the continued airworthiness of the airplane**. (emphasis added.)

b) Required ICA content

The ICAs for Part 25 airplanes consist of three sections: an airplane maintenance manual, maintenance instructions and an airworthiness limitations section. With respect to maintenance instructions for appliances and other installed accessories, Part 25, Appendix H, paragraph H25.3 (b) provides, in part, as follows:

(b) *Maintenance instructions*<sup>7</sup>. (1) **Scheduling information for each part of the airplane and its engines, auxiliary power units, propellers, accessories, instruments and equipment** that provides the recommended periods at which they should be cleaned, inspected, adjusted, tested and lubricated, **and the degree of inspection, the**

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<sup>7</sup> In accordance with Part 1, "maintenance" means inspection, overhaul, repair and the replacement of parts, but excludes preventive maintenance. In accordance with section 43.2, "overhaul" includes disassembly, cleaning, repairing as necessary, reassembly, and testing **in accordance with approved standards and technical data which have been developed and documented by the holder of a type certificate, supplemental type certificate, or a material, part, part, process or appliance approval under section 21.305(d)**(emphasis added). All of the required elements of an overhaul must be performed in accordance with methods, techniques and practices acceptable to the Administrator.

**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. (emphasis added)

c) FAA legal interpretations: CMMs are part of the ICAs

On December 13, 1999, the FAA's deputy chief counsel issued a legal interpretation on the issues raised in this Complaint (the "Whitlow letter," IOP 11). GE Accessory Services-Grand Prairie, Inc. (GE-Grand Prairie) protested British Aerospace PLC's (BAe) refusal to provide ICAs for various airframe components installed on the BAe-146 airplane.

The Whitlow letter described the essential elements of a section 21.50(b) violation: First, the subject components 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. There is no doubt that the Liebherr air cycle machine, flow control valves and check valve are part of the Airbus A320 type design. Second, the repair station requesting the ICAs must be certificated and appropriately rated to perform maintenance on the components. Aerotron and TPS meet these requirements. Therefore under section 21.50(b), Airbus is required to provide Aerotron and TPS with the ICA for the requested Liebherr components.

An AGC-210 legal opinion dated April 14, 2003 validated the fact that CMMs are required information under section 21.50(b) (IOP 12). It set forth four requirements that a repair station must establish before CMMs would be required to be made available from the design approval holder. 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.*

**The A-320 type certificate was applied for on February 7, 1984.**

2. *The latest related certification basis includes [section] 21.50 as amended 09/11/80 or later (and 2X.1529 or 3x.4, as applicable, i.e., the certificate holder was required to develop (furnish) ICAs as part of the certification process.*

**The certification basis for the A320 encompasses Part 25, Amendments 25-1 through 25-56. Part 25, Appendix H was added to section 25.1529 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.*

**The repair stations (Aerotron and TPS) and others similarly situated are rated to perform maintenance on the specified Liebherr components.**

4. *If the ICA data requested is a CMM or specific repair information, the CMM or repair information is referenced in higher-level ICA (airplane or engine ICA) as the appropriate source of information for continued airworthiness actions*

**It is Complainant's understanding that the Introduction section of the Airbus' A320 Aircraft Maintenance Manual (AMM) states that the AMM provides information for performing maintenance on the aircraft including references to the CMMs of its suppliers. The supplier CMMs contain maintenance instructions specifically required by Part 25, Appendix H, paragraph H25.3(b).**

**With respect to the Liebherr flow control valve P/N 751A0000 requested by TPS, it is Complainant's understanding that the AMM specifically refers to the Liebherr CMM and service bulletins for this component. AMM task 21-51-51 describes the servicing of the pack flow control valve. Airbus identifies the component manufacturer by referring both to the Liebherr CMM (21-51-51) and Liebherr service bulletins (SB).<sup>8</sup> Complainant urges the FAA to examine the A320 AMM.**

**However, type certificate holders should not be able to circumvent their obligations under section 21.50(b) merely by providing remove and replace instructions for components. Indeed, this would be contrary to Part 25, Appendix H, paragraph H25.3(b), which also requires information on "the degree of inspection, the applicable wear tolerances and work recommended at these periods."<sup>9</sup>**

**When a component malfunctions, one that conforms to the approved type design must replace it. Although the replacement part can be**

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<sup>8</sup> ATA chapter 21 relates to the airplane's air-conditioning system, sub-chapter 51 relates to the air conditioning flow and section 51 relates to airflow control.

<sup>9</sup> Although not directly at issue in this Complaint, FAA requirements in the engine ICA rules are even more explicit. For example, in the engine overhaul manual section, the FAA requires disassembly information, cleaning and inspection techniques, methods of overhaul, details of all fits and clearances, details of repair methods for worn or otherwise substandard parts and components along with the information necessary to determine when replacement is necessary, the order and method of assembly, etc. Similar to Part 25, Appendix H, the engine ICA rules apply to each engine and **all engine parts** (Part 33, Appendix A, paragraph A33.1(b)).

**new or used, Complainant requests the FAA to take administrative notice of the fact that rotatable components are routinely repaired and replaced several times during their useful life. Indeed, there are approximately 4,500 repair stations in the United States and most of them perform maintenance on components off the aircraft.**

**We also request administrative notice of the fact that type certificate holders require CMMs to be prepared as a condition of product support agreements with their suppliers. Aircraft manufacturers certainly recognize that operators would not purchase their aircraft if all components that malfunctioned had to be replaced with new ones. Additionally, aircraft owners and operators require information necessary for the economical operation of their aircraft in their purchase agreements, including detailed maintenance information regarding the aircraft and its installed equipment.**

**The agency's deputy chief counsel has previously determined that making the CMM's available to authorized repair stations is an obligation of the design approval holder under section 21.50(b). The Whitlow letter, issued by the highest-ranking career lawyer in the FAA, did not believe the type certificate holder needed to specifically reference the supplier's CMM in the product's ICAs. Indeed, it explicitly stated that the airframe component ICAs were required to be made available if the application for the type certificate was made after January 28, 1981.**

The FAR, the Whitlow letter and Flight Standards-initiated enforcement cases clearly apply to maintenance performed on **and** off the aircraft. When component maintenance is performed off the aircraft, the CMMs allow maintenance providers to fulfill their regulatory obligations under Parts 43 and 145; in other words, to perform airworthy repairs. This includes (1) determining the degree of inspection required, (2) the criteria for determining whether a specific part may be continued in service (applicable wear tolerances) and, (3) the specific work that must be performed before the component may be approved for return to service. (Part 25, Appendix H, paragraph H25.3).

4. Airbus has an obligation under section 21.50(b) to provide the ICAs for the Liebherr components

Liebherr manufactures specific components installed on the Airbus A320. It does not provide CMMs to duly authorized maintenance providers. Unlike Airbus, Liebherr does not hold an FAA design approval and therefore is not bound by section 21.50(b).

However, as the design approval holder for the A320 series aircraft, Airbus must comply with section 21.50(b). As the Whitlow letter explicitly stated:

**The fact that [the TC holder] has historically used vendors to supply components would not obviate its obligation to comply with section 21.50(b); that section clearly states that the obligation to provide [ICAs] rests with the holder of the design approval. [The TC holder] may not avoid its obligations under FAA regulations by entering into contracts that conflict with the regulations. Furthermore, the fact that [the TC holder] and some of its vendors have supplied the original owners or operators with [ICAs] would not obviate the design approval holder's obligation to also provide [ICAs] "thereafter ... to any other person required to comply with any of the terms of the [ICAs]." (emphasis added)**

If this information is not contained in the AMM, the design approval holder must ensure that the CMM is made available as required by section 21.50(b).

5. Repair stations are required to comply with the ICAs

Aerotron and TPS are certificated repair stations rated to perform maintenance, preventive maintenance and alterations on the Liebherr air cycle machine, flow control and check valves. Under both the current and new Part 145, Aerotron and TPS are required to obtain and keep current the ICAs for these articles. The repair stations' customers include Parts 121 and 135 air carriers. Section 145.2 (and new section 145.205) directs the repair stations to follow the maintenance manual of the air carrier when they perform work on the carrier's behalf. With respect to component maintenance, air carriers direct their maintenance providers to perform the work in accordance with the manufacturer's CMM.

The Whitlow letter concluded that 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." The letter correctly observed that even if the aircraft manufacturer was not "technically" required by section 21.50(b) to provide component ICAs (because application for the type certificate for the BAe-146 was filed 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). The date specified in section 21.50(b) presents no such restriction in this case since the type certificate for the Airbus A320 was applied for after January 28, 1981.

C. The Liebherr CMMs are Essential to Continued Airworthiness

1. Component maintenance instructions

Part 25, Appendix H, paragraph H25.1 (b) provides:

[I]f Instructions for Continued Airworthiness are not supplied by the manufacturer of an appliance or product installed in the airplane, the Instructions for Continued Airworthiness for the airplane must include the information **essential to the continued airworthiness of the airplane**. (emphasis added.)

Because Liebherr has elected not to supply CMMs to repair stations, Airbus is required to do so if the information contained therein is essential to the continued airworthiness of the airplane. For the reasons described below, Complainant submits that all CMMs are essential to continued airworthiness within the meaning of the rule.

Some have suggested that CMMs are not essential to continued airworthiness because, if a rotatable component malfunctions, a replacement part can be installed. This ignores the fact that rotatable components are not normally discarded when they malfunction but are maintained or altered, approved for return to service and reinstalled on an aircraft.

Others believe that an on-aircraft functional check will prevent improperly repaired components from being installed. Although on-aircraft checks are an accepted practice, certain components cannot be adequately tested at installation. Indeed, component repair stations are required to perform many tests and inspections using expensive and highly specialized equipment in accordance with the ICAs prior to the component being eligible for installation on the aircraft. They perform a far more comprehensive evaluation than a functional check performed on the aircraft. Therefore, a component may pass a functional check even if it has been improperly repaired. Certainly, the likelihood of improper component repairs being performed increases if CMMs are not made available by the design approval holder as required by section 21.50(b).

Part 145 repair stations must possess the CMMs at the time of certification and again when the work is performed. The regulations and case law established that maintenance providers must perform maintenance in accordance with the pertinent CMM. Case law also establishes that an improperly repaired component aircraft renders an aircraft unairworthy.

## 2. NTSB investigations

Aircraft must be maintained in an airworthy manner and ICAs are the means to ensure that this occurs. As the NTSB noted in its recent safety recommendation to the FAA on an accident involving an Emery Airlines aircraft in 2000:

“[T]he use of outdated, incomplete, or otherwise unsuitable reference materials by maintenance personnel during the installation and/or assembly of airplane components can occur and is a potentially unsafe practice<sup>10</sup>.”

Similarly, in its report on the January 2000 Alaska Airlines accident, the Safety Board noted deficiencies in the aircraft ICAs for performing end play checks and overhauls of horizontal stabilizer jackscrew assemblies. The Board concluded that maintenance providers that performed overhauls of components similar to those involved in the accident did so in a non-standardized manner, a fact that “increases the potential for errors to occur.”<sup>11</sup>

## 3. The maintenance rules

### a) Part 43

All maintenance providers, including mechanics, repair stations and air carriers must follow section 43.13 of the FAR when performing maintenance, preventive maintenance and alteration on civil aviation articles. That rule states:

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 section 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,

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<sup>10</sup> NTSB Safety Recommendation A-03-32, August 18, 2003 regarding the February 16, 2000 accident involving Emery Worldwide Airlines, Inc., N8079U, DC-8-71F, Rancho Cordova, CA (IOP 13, at page 8 ).

<sup>11</sup> NTSB Accident Report, Alaska Airlines, Inc., Flight 261, January 31, 2000, N963AS, MD-83 near Anacapa Island, CA at page 160 (IOP 14).

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).

*c) Special provisions for holders of air carrier operating certificates and operating certificates issued under the provisions of Part 121 or 135 and Part 129 operators holding operations specifications.*

Unless otherwise notified by the Administrator, the methods, techniques, and practices contained in the maintenance manual or the maintenance part of the manual of the holder of an air carrier operating certificate or an operating certificate under Part 121 or 135 and Part 129 operators holding operations specifications (that is required by its operating specifications to provide a continuous airworthiness maintenance and inspection program) constitute acceptable means of compliance with this section.

b) Current Part 145

Repair stations are required to refer to the manufacturer's standards in their inspection systems under section 145.45(f), which states:

At the time he applies for a repair station certificate, the applicant must provide a manual containing inspection procedures, thereafter maintaining it in current conditions at all times. The manual must explain the internal inspection system of the repair station in a manner easily understood by any employee of the station. It must state in detail the inspection requirements in paragraph (a) to (e) of this section, and the repair station's inspection system including the continuity of inspection responsibility, samples of inspection forms and the method of executing them. **The manual must refer whenever necessary to the manufacturer's inspection standards for the maintenance of the particular article.** The repair station must give a copy of the manual to each of its supervisory and inspection personnel. The repair station is responsible for seeing that all supervisory and inspection personnel thoroughly understand the manual. (emphasis added.)

In addition to the general performance rules of section 43.13, repair stations must follow the additional standards in section 145.57:

a) Except as provided in section 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**

**manufacturer's service manuals, instructions, and service bulletins that relate to the articles that it maintains or alters."**  
(emphasis added.)

c) The new Part 145

The new Part 145 continues to require ICAs. New section 145.51(b) provides, in part, as follows:

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.)

New section 145.109(d) mandates that:

The following documents and data must be current and accessible when the relevant work is being done:

- (1) Airworthiness Directives,
- (2) Instructions for Continued Airworthiness,**
- (3) Maintenance manuals,**
- (4) Overhaul manuals,**
- (5) Standard practice manuals,
- (6) Service Bulletins, and
- (7) Other applicable data acceptable to or approved by the FAA.  
(emphasis added.)

Finally, new section 145.211(c) states, in part, as follows:

A certificated repair station must **prepare and keep current** a quality control manual in a format acceptable to the FAA that includes the following: (2): **References**, where applicable, to the **manufacturer's inspection standards** for a particular article, **including** reference to **any data specified by the manufacturer....** (emphasis added.)

The FAA has made the possession of current ICAs a condition of certification under Part 145. In addition, it requires repair stations to integrate the ICAs into their procedures and follow them when they perform work.

4. The operating rules

Parts 91, 121, 125 and 135 prohibit the operations of unairworthy aircraft. The specific regulatory requirements can be found in sections 91.7(a), 121.153(a)(2), 125.91(a)(2) and 135.25(a)(2). Numerous enforcement cases alleging violations

of these regulations further confirm the principle that aircraft must conform to their approved design and be in condition for safe operation. Otherwise, they are unairworthy and cannot be operated except in very limited cases.

5. Enforcement cases

a) Failure to follow the applicable maintenance manual

FAA and NTSB enforcement decisions establish that air carriers and maintenance providers violate section 43.13(a) when they failed to perform maintenance in accordance with the ICAs, including CMMs. The FAA has initiated hundreds, if not thousands of cases based upon this principle that are not officially reported. As the agency is aware, most enforcement cases are settled 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 are subjected to enforcement action.

In Administrator v. Aero Lectrics, Inc., 6 NTSB 1085, 1088 (1989) (IOP 15), the NTSB concluded that a repair station that failed to perform an overhaul for an air carrier in accordance with the component manufacturer's overhaul manual violated section 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 (or overhaul) manual.

In the matter of Empire Airlines, Inc., FAA Order No. 2000-13, Docket No. CP98NM0011 (June 8, 2002) (IOP 16), it was held that Empire violated section 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 if there was any damage in excess of the allowable limits for patching and insertion, replacement of the engine mount was required. 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’ decision. Id.

In Administrator v. Missouri Aerotech Industries, Inc., FAA Order No. EA-3999, Docket No. SE-13249 (October 15, 1993) (IOP 17), 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 Safety Board stated:

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 procedures which are **set forth in published technical data.** (emphasis added.) Id. at page 12

In Administrator v. Alphin, 4 NTSB 23 at 26 (1984)(IOP18), the NTSB held that:

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...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 law is clear—maintenance is to be performed in accordance with the methods, techniques and practices set forth in the manufacturer’s maintenance or overhaul manual of the article being maintained. This duty applies whether the article is an aircraft, aircraft engine, propeller, appliance, accessory, instrument or a component part thereof.

b) Operations with improperly repaired components

Operating with an improperly repaired or damaged component renders the entire aircraft unairworthy. Each of the operating rules prohibits such operation. Therefore, performing component maintenance in accordance with the applicable CMM 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 19), the FAA imposed a civil penalty on an air carrier for operating an unairworthy aircraft contrary to sections 91.7(a) and 135.25(a)(2). Specifically, the two aircraft had been flown for almost 1,400 hours with improperly modified and repaired fuel pumps. In affirming the law judge's finding that the aircraft were operated in an unairworthy manner because the fuel pumps were not in condition for safe operation, 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 20), the FAA found that USAir operated an unairworthy aircraft contrary to section 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.

## V. CONCLUSION

Complainant requests that the FAA initiate an informal investigation and thereafter issue an order finding that Airbus is in violation of section 21.50(b). The Complainant has provided the Administrator with the necessary IOPs establishing violations of section 21.50(b).

If there is any doubt about the merits of Complainant's position, ARSA 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.

ARSA 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 Aerotron and TPS 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.



**CERTIFICATE OF SERVICE**

I, \_\_\_\_\_, certify that on October \_\_\_\_\_, 2003, I caused the executed original and one copy of the foregoing Aeronautical Repair Station Association Part 13 Complaint on section 21.50(b) of the Federal Aviation Regulations to be delivered via \_\_\_\_\_ to:

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

\_\_\_\_\_  
Signature