



# The Service Bulletin Conundrum

By Gregory J. Reigel



All aircraft owners have received a “service bulletin” from the manufacturer of the aircraft or of one of the components installed on the aircraft (e.g., the engine, avionics, or accessories).<sup>1</sup> A manufacturer may issue a service bulletin because of an improvement to the aircraft or to the component developed by the manufacturer. It also may address a potential defect in the manufacturer’s product or in published documentation associated with the product. Usually, these improvements or potential defects were identified after the aircraft or component was put into service, thus the necessity for the manufacturer to have a method to subsequently notify owners of the need for possible action on their part in the operation of the aircraft. In a service bulletin, a manufacturer may recommend a certain type of inspection, replacement of certain components, performance of maintenance in a specific manner, or a limit on operations under specified conditions. Sometimes, compliance with a service bulletin may be triggered by the occurrence of a particular event (e.g., the lapse of time or operation under certain types of conditions). When a manufacturer issues a service bulletin, it sends a copy to the record owners of all of the aircraft affected by the service bulletin.<sup>2</sup>

What is an aircraft owner or maintenance provider to do with a service bulletin? Is compliance required simply because the manufacturer recommends it?<sup>3</sup> Well, as with many legal issues, it depends upon the circumstances. More specifically, it depends upon the perspective from which you are viewing potential compliance: the regulatory perspective or the tort perspective.

## Compliance under regulations

Since the operation and maintenance of aircraft are governed by the Federal Aviation Regulations (FARs),<sup>4</sup> and aircraft owners endeavor to comply with the FARs to avoid enforcement action by the Federal Aviation Administration (FAA) that could result from noncompliance, the initial inquiry into service bulletin compliance must begin with a review of the applicable FARs.

### *The longstanding rule*

Although a service bulletin may be labeled or characterized by the manufacturer as “mandatory,” in the past, compliance with a service bulletin has not been specifically required under the FARs unless the service bulletin

was incorporated into or referenced in an airworthiness directive, or if the service bulletin was specifically incorporated into the manufacturer’s maintenance manual. Airworthiness directives are rules that have been issued to effect safety of flight and compliance and have always been mandatory.<sup>5</sup> However, a review of FAR part 43, Appendix D<sup>6</sup> would confirm—if only by the absence of a specific requirement in the FARs stating that compliance with service bulletins is mandatory—that an aircraft may be returned to service without complying with a manufacturer’s service bulletin, except where an airworthiness directive is applicable.

Yet, the FARs do generally require that an aircraft and its components be maintained in accordance with the manufacturer’s maintenance manual. And some aircraft and component manufacturers have included specific “incorporation by reference” provisions in their maintenance manuals that incorporate and mandate compliance with all service bulletins. Although this action by manufacturers did not, at least from the FAA’s perspective, create a new regulatory requirement regarding service bulletin compliance, it set the stage for the National Transportation Safety Board (NTSB) to weigh in on the issue of whether the manufacturer’s inclusion of service bulletins creates an obligation under the FARs to comply with those service bulletins.

### *The NTSB creates confusion*

In *Administrator v. Law*,<sup>7</sup> the NTSB answered this question in the affirmative and, in so doing, issued a ruling that was contrary to the FAA’s longstanding position that service bulletin compliance was only mandated when accompanied by or included in an airworthiness directive. In *Law*, an FAA aviation safety inspector inspected one of the mechanic’s customer’s aircraft after the customer notified the FAA that he believed the work the mechanic had completed on his aircraft’s engine rendered the aircraft not airworthy. The FAA subsequently issued an order suspending the mechanic’s airframe and powerplant (A&P) certificate for 180 days for violations of FAR 43.13(a) and 43.2(a)(1) and (2).

According to the FAA, the mechanic sent the crankshaft, connecting rods, and pistons from a Textron Lycoming engine to a noncertified facility for balancing and then approved the engine for subsequent service. The FAA’s complaint further alleged that Lycoming had no approved process for balancing crankshafts, connecting

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rods, or pistons in the field and that the mechanic ordered a noncertified employee to perform a magnetic particle inspection of the engine's crankshaft but that the mechanic's employee did not follow the inspection requirements of a Lycoming Service Instruction Bulletin. Finally, the FAA claimed that the mechanic performed a ground run-up of the engine that was not consistent with any approved standard or technical data acceptable to the FAA administrator.

The FARs do not specifically require an aircraft owner to comply with a service bulletin.

The mechanic appealed the FAA's order to the NTSB.<sup>8</sup> At the hearing, the FAA offered into evidence the service bulletin at issue, Textron Lycoming Service Instruction No. 1285B (May 23, 1997), which required that "[p]ersonnel performing Magnetic Particle Inspection shall be qualified and certified in accordance with ASNT Personnel Qualification SNT-TC-1A or MIL-STD-410."<sup>9</sup> Although the mechanic did not dispute that his employee did not hold any certificates when he completed a magnetic particle inspection on the Lycoming engine in question, the mechanic argued that manufacturers' service instructions do not apply to mechanics performing maintenance on FAR part 91 aircraft. At the close of the hearing, Administrative Law Judge Geraghty held that the mechanic had violated each of the FARs cited by the FAA. However, he reduced the suspension of the mechanic's airframe and powerplant certificate from 180 to 120 days based upon the mechanic's apparent misunderstanding of the FARs. The mechanic then appealed the decision to the full NTSB board.

One of the mechanic's arguments on appeal to the full board was again that a mechanic performing maintenance on FAR part 91 aircraft is not required to comply with manufacturers' service bulletins, instructions, or letters in the absence of an airworthiness directive mandating such compliance. The full board disagreed and held that "[w]hile compliance with service instructions or service bulletins may not be mandatory in the absence of an Airworthiness Directive, a manufacturer may legitimately incorporate such service publications into a manual by reference."<sup>10</sup> In this case, the Lycoming overhaul manual incorporated all *future* service instructions by reference:

In addition to this manual and subsequent revisions, additional overhaul and repair information is published in the form of service bulletins and service instructions. The information contained in these service bulletins and service instructions is an integral part of, and is to be used in conjunction with, the information contained in this overhaul manual.<sup>11</sup>

Based upon this language, the full board found that the mechanic's use of a noncertified person to perform the inspection and failure to use the manufacturer's pre-

scribed inspection technique violated the FARs as alleged by the FAA.

The NTSB's decision on the issue was perplexing, and thus disturbing, in that it did not cite to any precedent or evidence to support its position, nor was that position supported by the argument made by the FAA in the case. And a search of NTSB opinions did not disclose any such support in precedent. Yet, the NTSB definitely sent a signal to manufacturers that they could require compliance with service bulletins that may previously have been ignored by aircraft owners/operators (because they were not mandated by an airworthiness directive) simply by making reference in the maintenance manual that incorporates all past and future service bulletins. The NTSB's decision was undoubtedly contrary to the FAA's long-standing position that compliance with a manufacturer's service bulletin was not mandated unless it was incorporated into an airworthiness directive.

#### *The FAA clarifies the rule*

To address the situation and try to eliminate the apparent confusion in the industry caused by the NTSB's decision, the FAA chief counsel's office issued a legal interpretation<sup>12</sup> addressing this issue. The interpretation was issued in response to a specific request regarding whether a manufacturer's service bulletin "requiring" performance of a borescope inspection in connection with cylinder compression test revealing weak pressures during a 100-hour or annual inspection of an aircraft operated under FAR part 91 was in fact mandatory under the FARs. The FAA was asked to provide a legal interpretation to answer the question whether FAR 43.13(a), which requires that maintenance shall be done using methods, techniques, and practices prescribed by the manufacturer or other methods, techniques, and practices acceptable to the administrator, mandated compliance with the service bulletin simply because the manufacturer required it.

The FAA's simple answer was "no." However, it was not an unqualified "no." The FAA stated that "unless a service bulletin is incorporated either directly or by reference into a document that makes its requirements mandatory, the answer is no."<sup>13</sup> The FAA observed that the text of FAR 43.13(a) "provides a person performing maintenance, alteration, or preventive maintenance on a product with a number of permissible options when performing that work. A manufacturer may legitimately incorporate a service bulletin into one of its maintenance manuals by reference. If it does so, the data specified, and the method, technique, or practice contained therein, may be acceptable to the Administrator."<sup>14</sup> This means that compliance with the service bulletin in this situation would certainly be an acceptable method.

However, it went on to state, "unless the method, technique, or practice prescribed by a manufacturer is specifically mandated by a regulatory document, such as an Airworthiness Directive, its contents are not mandatory."<sup>15</sup> Since FAR part 43, Appendix D, does not specifically require a borescope inspection as the only means for determining the internal condition of the cylinders if the compression

test shows weak cylinder compression, other methods such as cylinder disassembly and inspection could be used. As a result, compliance with the service bulletin was not mandatory as long as some acceptable method was used to determine the condition of the cylinders.

According to the FAA, allowing a manufacturer to mandate compliance with a service bulletin would impermissibly authorize the manufacturer to issue substantive rules. Not only does the FAA not have the authority to delegate its ability to make rules, but allowing a manufacturer to issue rules in the form of service bulletins, without public notice and comment, would be contrary to the Administrative Procedure Act.

However, manufacturers are not without recourse. The legal interpretation also notes that manufacturers do have alternative methods for mandating compliance with the maintenance specified in a service bulletin. A manufacturer could petition the FAA to have the service bulletin incorporated into an airworthiness directive. Alternatively, a manufacturer could incorporate the maintenance addressed in the service bulletin into its current maintenance manual or Instructions for Continued Airworthiness and, in situations in which compliance with those documents is mandated by regulation, that maintenance work would then be required.<sup>16</sup>

This legal interpretation clarified that compliance with a service bulletin, absent an airworthiness directive or other regulatory requirement, is not mandatory simply because the NTSB says it is. From a regulatory perspective, compliance with a service bulletin on an aircraft operated under FAR part 91, absent an airworthiness directive or other regulatory requirement, is not mandatory.

### Compliance under tort law

The FARs do not specifically require an aircraft owner to comply with a service bulletin. But does this mean an aircraft owner can ignore service bulletins? We know that a FAR part 91 aircraft owner will not invoke the wrath of the FAA if he or she does not comply with a service bulletin (unless, of course, the service bulletin contains an airworthiness directive). However, before service bulletins are ignored or rejected, compliance also must be evaluated from a tort perspective in order to accurately assess the risks of noncompliance.

Under tort law, and specifically the law of negligence, we all have a duty to use reasonable care. The standard of care is established by determining what a reasonable person would do under a set of given circumstances. In recent years, plaintiffs in aircraft crash cases have been using service bulletins to establish the standard of care with respect to aircraft ownership, operation, and maintenance. Specifically, in a post-aircraft accident scenario, plaintiffs' experts will scour the aircraft's logbooks in an attempt to identify service bulletins with which the aircraft owner, operator, or maintenance provider has not complied. They then try to argue a causal connection between that lack of compliance and the aircraft accident.

At trial, the plaintiffs argue that the manufacturer issues a service bulletin because it believes compliance will make the aircraft or its components safer<sup>17</sup> and that compliance with the service bulletin's recommendations, issued by the manufacturer, who should know best, establishes the duty owed by the aircraft owner, operator, or maintenance provider. They will direct attention to the "mandatory" nature of service bulletins so designated by the manufacturer. Plaintiffs also will argue that deferred or rejected compliance with a service bulletin improperly places financial savings over safety.<sup>18</sup>

In response, the defense will argue that the aircraft is still safe without compliance with every service bulletin issued that may be applicable to the aircraft, pointing out that service bulletins only contain recommendations from the manufacturer and are not issued by the agency responsible for safety and certification of aircraft and aircraft components. After all, unless the FAA has promulgated the recommendation into an airworthiness directive, the FAA apparently does not deem the manufacturer's recommendations to be necessary or mandatory to protect the public's interest in aviation safety. So why should the aircraft owner, operator, or maintenance provider? And why should the owner spend additional money for parts or maintenance that may or may not actually make the aircraft safer?

All of these arguments are made to, and allowed by, the courts, in spite of the fact that service bulletin compliance is not mandated by the FARs. Additionally, juries have heard evidence regarding the absence of service bulletin compliance and returned verdicts in favor of plaintiffs based upon that evidence. The higher standard of care argued in the tort context has yet to be preempted by the regulatory standard of care established by the FARs.

A recent personal injury case arising out of the crash of a V35 Beechcraft Bonanza illustrates this situation. The defendant in the case, an A&P mechanic with inspection authorization, performed an annual inspection on the aircraft approximately three hours before the accident flight and returned the aircraft to service. Prior to the annual inspection, Beechcraft had issued a "mandatory service bulletin" requiring replacement of the aircraft's two-piece fuel gascolator screen with a one-piece unit. The service bulletin stated that the replacement was necessary to prevent an improper inverted installation of the fuel screen that would allow unstrained fuel to flow from the gascolator toward the engine. Because the service bulletin was not promulgated into an airworthiness directive, the mechanic was neither aware of nor did he comply with the service bulletin.

During the subsequent accident flight, one of the plain-

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tiffs, a certified flight instructor, was flying the aircraft in the left seat and another plaintiff, a pilot rated in the aircraft but who did not have a current medical certificate, was seated in the right seat. The Bonanza was on an extended final approach for landing when the aircraft's engine quit. The plaintiffs were unable to restart the engine and the aircraft subsequently crashed short of the runway.

In their suit against the mechanic, the plaintiffs alleged that the accident was caused by the mechanic's failure to comply with the service bulletin and his improper installation of the gascolator fuel screen in an inverted position. This resulted in contaminated fuel flowing past the gascolator; the contaminated fuel then caused the engine to quit. In response, the defendant argued that compliance with the service bulletin was not required by the regulations and that he had, in fact, installed the gascolator fuel screen properly. He also argued that the plaintiffs' joint mismanagement of the fuel and failure to restart the engine caused the accident.

Prior to trial, the defendant filed a motion in limine seeking exclusion of evidence relating to the service bulletin and the mechanic's failure to comply with the service bulletin. The defendant argued that the regulatory requirements of FAR part 43, Appendix D<sup>19</sup> established the standard of care for performing an annual inspection and that compliance with a "mandatory" service bulletin that was not promulgated into an airworthiness directive was not required.

The plaintiffs argued that the regulatory requirements for performance of an annual inspection were only the minimum required and that a mechanic must comply with a service bulletin issued by a manufacturer to exercise reasonable care. The judge agreed and allowed the plaintiffs to present evidence to the jury regarding the service bulletin and the mechanic's failure to comply with the service bulletin.

Ironically, the plaintiffs filed a similar motion in limine regarding the defendant's claim of joint liability on the part of the plaintiff pilots. They argued that only one of the pilots, the certified flight instructor, could be the pilot in command under FAR 91.3.<sup>20</sup> As a result, any claim of comparative fault on the part of the pilot in the right seat for actions or inactions prior to the actual flight (e.g., failure to properly pre-flight and failure to advise the pilot in command regarding the quantity of fuel onboard) should be precluded.

The defendant agreed that FAR 91.3 established the regulatory requirements for the pilot in command. However, he argued that FAR 91.3 did not preclude an analysis of the comparative fault of the right-seat pilot for his failure to use reasonable care prior to the flight even though he was not the pilot in command from a regulatory perspective. The judge agreed with the plaintiffs again and refused to allow admission of any evidence regarding the alleged fault of the right-seat pilot for his actions prior to the accident flight. However, contrary to his ruling on the defendant's motion in limine, in this instance the judge premised his decision upon the theory that the regulatory requirement of FAR 91.3 established the duty of care solely upon the certified flight

instructor as pilot in command.

The judge's inconsistent decisions on these motions illustrates an apparent confusion about the distinction between establishing a standard of care based upon regulatory requirements imposed upon an alleged tortfeasor by the FARs, as opposed to a standard of care premised upon a common law duty above and beyond the applicable regulatory requirements. For judges and attorneys unfamiliar with aviation and the regulatory requirements of the FARs, this confusion is not uncommon. Educating judges and opposing counsel regarding these regulatory requirements and distinguishing them from common law duties can be critical to the admission or exclusion of evidence in an aviation accident case.

## Weighing the risks

So, what is an aircraft owner, operator, or maintenance provider to do? Since we are all bound by the FARs applicable to our flight operations, regulatory compliance is mandatory. However, what about compliance as viewed from a tort perspective?

For aircraft owners, the first goal should be safety. In achieving this goal, they should recognize that the FARs are *minimum* standards. But how will an aircraft owner know whether the service bulletin really does address a safety issue that the aircraft owner may choose to address? Unless the aircraft owner is a maintenance provider, he or she will only be able to make that determination by thoroughly discussing the service bulletin and its requirements with a maintenance provider.

When an appropriate standard of safety of flight is not necessarily an issue, an aircraft owner may then want to perform a cost-benefit analysis to compare the cost of compliance (how much will the labor or parts required by the service bulletin cost?) with the benefit obtained by complying with the service bulletin (will compliance enhance the safety or value of the aircraft or limit the aircraft owner's liability exposure to third parties?). This analysis and the answers to these questions should assist an aircraft owner in deciding whether he or she will comply with a particular service bulletin.

Aircraft maintenance providers will need to be aware of applicable service bulletins and to discuss the information with the aircraft owner and/or operator. This may mean having the aircraft owner or operator acknowledge and represent on the work order that he or she has provided all applicable service bulletins received from the manufacturer to the maintenance provider. It also may be prudent for the maintenance provider to add service bulletin databases to the aircraft information he or she maintains, although it will result in increased subscription costs.

If the aircraft owner or operator does not authorize the maintenance provider to comply with the service bulletin, the maintenance provider should document that fact in the aircraft logbook or elsewhere and have the aircraft owner and/or operator acknowledge the lack of authorization.

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trading. It has done so because its analysis shows that emissions trading is the most cost-effective option for the industry. Indeed, ICAO has reached a similar conclusion.

The Commission shares the view expressed by the European Parliament and others that, while emissions trading has a contribution to make in limiting aviation's impact on climate, it is not in itself a complete answer. Rather, emissions trading should be seen as just one element of a comprehensive and consistent approach involving the enhancement of a number of other elements that are already in existence. These include:

- Giving higher priority for aeronautics research aimed at reducing the negative impact of aviation on climate change. Under the current (Seventh) Framework Program for RTD, the Commission expects to spend

over €150 million on aviation research in 2007 alone; projects aimed at "greening" aviation are a particular priority in this program.

- Modernizing the European air traffic management system in the Single European Sky initiative. Europe hopes to achieve a 10 percent reduction in emissions per flight. To this effect the EU has launched the SESAR<sup>6</sup> program to develop a master plan for the future European ATM system. This program, launched as a public-private partnership, is an open one. In July 2006, the European Commission and the FAA signed an agreement to ensure interoperability between SESAR and the U.S. NGATS ATM project.

- Working with our international partners to continuously improve existing technical design standards and, where appropriate, develop new ones,

and limit emissions at their source. This is a particularly important element as "prevention is better than a cure."

We need to work together on a *comprehensive* approach, and to make effective progress on all its elements if we are to achieve a level of environmental performance from air transport that is genuinely sustainable.

## Endnotes

1. COM (2005) 459.
2. EUROSTAT: Statistics in focus, 37/2005.
3. Kyoto Protocol, Article 2.2.
4. COM (2006) 818.
5. For a given cap, the GHG reductions depend on the assumptions in the business-as-usual (BaU) scenario. The baseline growth in carbon dioxide emissions was computed by the AERO model on the basis of assumptions produced by ICAO. To reflect improvements in air traffic management from Community initiatives, an extra improvement of 1 percent per year is assumed for 2013 to 2019.
6. Single European Sky ATM Research.

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This may help shift the potential civil liability exposure from the maintenance provider back onto the aircraft owner or operator. Alternatively, the maintenance provider may refuse to work on the aircraft or return the aircraft to service if he or she does not receive authorization to comply with an applicable service bulletin, although the maintenance provider would need to weigh the likely lost business against the potential risk averted by such action.

## Conclusion

At the end of the day, it is the aircraft owner's responsibility to decide whether he or she will comply with an applicable service bulletin. By talking with a knowledgeable maintenance provider, an aircraft owner can understand regulatory requirements of compliance and their associated cost. However, that shouldn't be the end of the analysis. Both the aircraft owner or operator and the maintenance provider also will need to weigh the costs and benefits of compliance from a tort perspective.

Only then can he or she make an informed decision as to what to do with a service bulletin.

## Endnotes

1. Depending upon the manufacturer, a service bulletin also may be called a "mandatory service bulletin," "technical service bulletin," "service letter," or "service instructions."
2. Interestingly, the manufacturers do not automatically send the service bulletins to maintenance providers. However, service bulletins are available to maintenance providers through various commercial subscription services.
3. This article will focus on compliance by aircraft owners or operators and maintenance providers regarding aircraft operation and maintenance in accordance with 14 C.F.R. pt. 91, as opposed to other operations under *id.* pt. 135 or *id.* pt. 121 where compliance with service bulletins is, for the most part, mandatory.
4. *Id.* § 1.1 *et seq.* (2006).
5. Airworthiness directives are issued pursuant to *id.* pt. 39 *et seq.* (2006).
6. *Id.* pt. 43, app. D, Scope and Detail of Items (as Applicable to the Particular Aircraft) to Be Included in Annual and 100 Hour Inspections, sets forth the maintenance required in connection with an aircraft's annual or 100-hour inspection.
7. Therol Wayne Law, NTSB Order No. EA-5221 (May 4, 2006).
8. Certificate holders may appeal orders of suspension to an administrative law judge of the National Transportation Safety Board pursuant to 49 U.S.C. § 44709(d).
9. *See Law, supra* note 7, at 6.

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10. *Id.*
11. *Id.* at 7.
12. FAA Office of Chief Counsel Legal Interpretation, August 11, 2006.
13. *Id.* at 1.
14. *Id.* at 1-2.
15. *Id.* at 2.
16. Keep in mind that not all manufacturers' manuals include this type of "incorporation by reference" language. However, many do. And it is likely that many more manufacturers will include this language in the future. Alternatively, they may update their manuals more frequently to specifically incorporate existing service bulletins into the manuals rather than simply relying upon the generic "incorporation by reference" language.
17. The manufacturer also may be attempting to limit its exposure to failure-to-warn products liability claims, but that is an issue beyond the scope of this article.
18. Compliance with a service bulletin typically translates into higher costs for the aircraft owner or operator. Whether it is requiring replacement of a component or performance of a more elaborate and detailed inspection, a service bulletin's recommendation usually means that the aircraft owner or operator is paying, or the maintenance provider is charging, more money in either parts or labor than would otherwise be required in the absence of the service bulletin.
19. 14 C.F.R. pt. 43, app. D (2006).
20. 14 C.F.R. § 91.3 (2006) ("The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.").