

to the FAA for approval of these features on the airplane.

The FAA has determined that notice and opportunity for public comment in accordance with 14 CFR 11.38 are unnecessary, because the FAA has provided previous opportunities to comment on substantially identical special conditions and has fully considered and addressed all the substantive comments received. Based on a review of the comment history and the comment resolution, the FAA is satisfied that new comments are unlikely. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

#### List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and record keeping requirements.

■ The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

#### The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the supplemental type certification basis for the Raytheon Model HS.125 Series 700A and 700B airplanes modified by Raytheon Aircraft Services, Inc.

1. *Protection from Unwanted Effects of High-Intensity Radiated Fields (HIRF).* Each electrical and electronic system that performs critical functions must be designed and installed to ensure that the operation and operational capability of these systems to perform critical functions are not adversely affected when the airplane is exposed to high intensity radiated fields.

2. For the purpose of these special conditions, the following definition applies: *Critical Functions:* Functions whose failure would contribute to or cause a failure condition that would prevent the continued safe flight and landing of the airplane.

Issued in Renton, Washington, on May 22, 2003.

**Ali Bahrami,**

*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
[FR Doc. 03-14336 Filed 6-5-03; 8:45 am]

**BILLING CODE 4910-13-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM255; Special Conditions No. 25-03-04-SC]

#### Special Conditions: Bombardier Model BD-100-1A10 Airplane; Automatic Takeoff Thrust Control System

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions; request for comments.

**SUMMARY:** These special conditions are issued for the Bombardier Model BD-100-1A10 airplane. This airplane will have a novel or unusual design feature when compared to the state of technology envisioned in the airworthiness standards for transport category airplanes. This design feature is associated with an Automatic Takeoff Thrust Control System (ATTCS). The applicable airworthiness regulations do not contain adequate or appropriate safety standards for approach climb performance using an ATTCS. These special conditions contain the additional safety standards the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** The effective date of these special conditions is May 28, 2003.

Comments must be received on or before July 7, 2003.

**ADDRESSES:** Comments on this proposal may be mailed in duplicate to: Federal Aviation Administration, Transport Airplane Directorate, Attention: Rules Docket (ANM-113), Docket No. NM255, 1601 Lind Avenue SW., Renton, Washington 98055-4056; or delivered in duplicate to the Transport Airplane Directorate at that address. You must mark your comments: Docket No. NM255. Comments may be inspected in the Rules Docket at that address on weekdays, except Federal holidays, between 7:30 a.m. and 4 p.m.

#### FOR FURTHER INFORMATION CONTACT:

Larry Reising, FAA, Propulsion/Mechanical Systems Branch, Transport Airplane Directorate, Aircraft Certification Office, ANM-112, 1601 Lind Avenue SW., Renton, Washington, telephone (425) 227-2683; fax (425) 227-2683.

**SUPPLEMENTARY INFORMATION:** The FAA has determined that notice and opportunity for prior public comment hereon are impracticable, because those procedures would significantly delay

issuance of the approval design and thus delivery of the affected aircraft. In addition, the substance of these special conditions has been subject to the public comment process in several prior instances with no substantive comments received. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

#### Comments Invited

The FAA has determined that notice and opportunity for public comment in accordance with 14 CFR 11.38 are unnecessary, because the FAA has provided previous opportunities to comment on substantially identical special conditions and has fully considered and addressed all the substantive comments received. Based on a review of the comment history and the comment resolution, the FAA is satisfied that new comments are unlikely. The FAA, therefore, finds that good cause exists for making these special conditions effective upon issuance.

However, the FAA invites interested persons to participate in this rulemaking by submitting written comments, data, and views. The most helpful comments reference a specific portion of the special conditions, explain the reason for any recommended change, and include supporting data. We ask that you send us two copies of written comments.

We will file in the docket all comments we receive as well as a report summarizing each substantive public contact with the FAA personnel concerning these proposed special conditions. The docket is available for public inspection before and after the comment closing date. If you wish to review the docket in person, go to the address in the **ADDRESSES** section of this notice between 7:30 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

We will consider all comments we receive on or before the closing date for comments. We will consider comments filed late if it is possible to do so without incurring expense or delay. We may change the special conditions based on the comments we receive.

If you want the FAA to acknowledge receipt of your comments on these special conditions, include with your comments a pre-addressed, stamped postcard on which the docket number appears. We will stamp the date on the postcard and mail it back to you.

#### Background

On March 26, 1999, Bombardier Aerospace submitted an application to

Transport Canada for type certification of the Bombardier Model BD-100-1A10. On June 28, 1999, Transport Canada made application on behalf of Bombardier for type certification of the Model BD-100-1A10 by the FAA. The Bombardier Model BD-100-1A10 will be type certificated in Canada and in the United States. The Model BD-100-1A10 is a medium-sized transport category airplane, powered by two Allied Signal high bypass turbofan engines mounted on the aft fuselage. Each engine can deliver up to 6,500 pounds of thrust at takeoff. The airplane will be capable of operating with two flight crewmembers and up to 16 passengers.

The Bombardier Model BD-100-1A10 airplane will incorporate an unusual design feature to show compliance with the approach climb requirements of § 25.121(d) ("Climb: One-engine-inoperative"). This design feature is the Automatic Takeoff Thrust Control System (ATTCS). Appendix I to Title 14, Code of Federal Regulations (CFR), part 25, limits the application of performance credit for ATTCS to takeoff. Since the airworthiness regulations do not contain appropriate safety standards for approach climb performance using ATTCS, special conditions are required to ensure a level of safety equivalent to that established in the regulations.

#### Type Certification Basis

Under the provisions of § 21.17, Bombardier must show that Bombardier Model BD-100-1A10 meets the applicable provisions of 14 CFR part 25, effective February 1, 1965, including amendments 25-1 through 25-98.

If the Administrator finds that the applicable airworthiness regulations (*i.e.*, part 25, as amended) do not contain adequate or appropriate safety standards for the Bombardier Model BD-100-1A10 airplane because of novel or unusual design features, special conditions are prescribed under the provisions of § 21.16.

The certification basis also may include later amendments to part 25 that are not relevant to these special conditions. In addition, the certification basis for the Bombardier Model BD-100-1A10 airplane includes the following:

- 14 CFR part 34, effective September 10, 1990, including amendment 34, effective February 3, 1999, and
- 14 CFR part 36, effective December 1, 1969, including amendments 36-1 through 36-23 or through 36-24, as elected by the applicant.

These special conditions form an additional part of the type certification basis. The certification basis also may

include other special conditions that are not relevant to these specific special conditions.

If the Administrator finds that the applicable airworthiness regulations (in this case, part 25) do not contain adequate or appropriate safety standards for the Bombardier Model because of a novel or unusual design feature, the FAA may prescribe special conditions under the provisions of § 21.16 ("Special conditions"). The special conditions become part of the type certification basis in accordance with § 21.101(b)(2) ("Designation of applicable regulations").

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same novel or unusual design feature or should any other model already included on the same type certificate be modified to incorporate the same novel or unusual design feature, the special conditions would also apply to the other model under the provisions of § 21.101(a)(1).

#### Novel or Unusual Design Features

As stated previously, the Bombardier Model BD-100-1A10 airplane will incorporate an unusual design feature—ATTCS—to show compliance with the approach climb requirements of § 25.121(d). This airplane is powered by two Allied Signal turbofan engines mounted on the aft fuselage and equipped with Full Authority Digital Engine Controls (FADEC) that, in part, protect against exceeding engine limits.

The airplane also incorporates a non-moving throttle system that functions by placing the throttle levers in detents for the takeoff and climb phases of flight or for a go-around; this throttle system allows the FADEC to schedule the power setting, based on the phase of flight. With the ATTCS and associated systems functioning as designed, all applicable requirements of part 25 will be met without requiring any action by the flight crew to increase power.

Automatic takeoff power control on the Bombardier Model BD-100-1A10 airplane involves uptrimming the operating engine to maximum takeoff power. This action will be controlled by the FADEC. At takeoff, when the power levers are set to the Takeoff Go-Around (TOGA) detent, if there are no FADEC fault or failure messages displayed, the system is armed, and ATTCS uptrim will occur without any further action by the crew if an engine fails. During a go-around, the uptrim is automatically armed.

For a go-around, the thrust levers are placed in the TOGA detent. The value of TOGA for the current ambient conditions will be calculated and set by the FADEC. If an engine fails, the ATTCS will change the power reference on the operating engine to achieve the maximum go-around power for the ambient conditions. The propulsive thrust used to determine compliance with the approach climb requirements of § 25.121(d) is limited to the lesser of (i) the thrust provided by the ATTCS system, and (ii) 111 percent of the thrust resulting from the initial thrust setting with the ATTCS system failing to perform its uptrim function and without action by the crew to reset thrust. This requirement serves to limit the performance effects of an ATTCS system failure and ensures that all-engines-operating go-around performance is not significantly degraded.

The engine operating limits (turbine temperature and N1) for TOGA are set and displayed to the pilot when that rating is selected. These limits are set in such a way that the engine redline limits are not exceeded when an ATTCS is engaged. When the maximum takeoff power rating is selected or triggered, the engine limits are reset automatically to reflect the uptrimmed engine redline limits.

The system is armed during all phases of the flight. The power levers will continue to function normally if the ATTCS should fail. Maximum takeoff/go-around power is available if the pilot elects to push the power levers past the takeoff/go-around power detent into the overtravel range.

Operations of all systems and equipment will be designed to function within the engine power range. Thrust increase from the initial to the maximum approved takeoff/go-around power level will be free of hazardous engine response characteristics.

The ATTCS function, as described above, is part of the powerplant control system. The ATTCS is always armed whenever power levers are above the idle detent. The system is verified before each flight via the FADEC built-in test feature. When the ATTCS is triggered following an engine failure, an "APR" message will appear on the engine display.

The FADEC installed on the Bombardier Model BD-100-1A10 airplane will ensure that inherent flight characteristics of the airplane do provide adequate warning, if an engine failure occurs during takeoff. The natural yawing tendency of the airplane, coupled with flashing master warning and master caution lights, will provide

the pilot with a clear indication of any engine failure during takeoff.

The part 25 standards for ATTCS, contained in § 25.904 (Automatic takeoff thrust control system (ATTCS)) and Appendix I, specifically restrict performance credit for ATTCS to takeoff. Expanding the scope of the standards to include other phases of flight, such as go-around, was considered at the time the standards were issued, but flight crew workload issues precluded further consideration. As stated in the preamble to amendment 25-62:

In regard to ATTCS credit for approach climb and go-around maneuvers, current regulations preclude a higher thrust for the approach climb [§ 25.121(d)] than for the landing climb (§ 25.119). The workload required for the flightcrew to monitor and select from multiple in-flight thrust settings in the event of an engine failure during a critical point in the approach, landing, or go-around operations is excessive. Therefore, the FAA does not agree that the scope of the amendment should be changed to include the use of ATTCS for anything except the takeoff phase." (Refer to 52 FR 43153, November 9, 1987.)

The ATTCS incorporated on the Bombardier Model BD-100-1A10 airplane allows the pilot to use the same power setting procedure during a go-around, regardless of whether or not an engine fails. In either case, the pilot obtains go-around power by moving the throttles into the forward (takeoff/go-around) throttle detent. Since the ATTCS is permanently armed, it will function automatically following an engine failure, and advance the remaining engine to the ATTCS thrust level. Therefore, this design adequately addresses the pilot workload concerns identified in the preamble to amendment 25-62.

Accordingly, these special conditions will require a showing of compliance with those provisions of § 25.904 and Appendix I that are applicable to the approach climb and go-around maneuvers.

The definition of a critical time interval for the approach climb case, during which time it must be extremely improbable to violate a flight path based on the gradient requirement of § 25.121(d), is of primary importance. That gradient requirement implies a minimum one-engine-inoperative flight path capability with the airplane in the approach configuration. The engine may have been inoperative before initiating the go-around, or it may become inoperative during the go-around. The definition of the critical time interval must consider both possibilities.

### Applicability

As discussed above, these special conditions are applicable to the Bombardier Model BD-100-1A10 airplane. Should Bombardier apply later for a change to the type certificate to include another model incorporating the same novel or unusual design feature, these special conditions would apply to that model as well under the provisions of § 21.101(a)(1), Amendment 21-69, effective September 16, 1991.

### Conclusion

This action affects only certain novel or unusual design features on the Bombardier Model BD-100-1A10 airplane. It is not a rule of general applicability and affects only the applicant that applied to the FAA for approval of these features on the airplane.

The substance of these special conditions has been subjected to the notice and public comment process in several prior instances, and has been derived without substantive change from those special conditions previously issued. It is unlikely that prior public comment on this action would result in a significant change from the substance contained in this document. For this reason, and because a delay would significantly affect the certification of the airplane, which is imminent, the FAA has determined that prior public notice and comment are unnecessary and impracticable. The FAA is requesting comments to allow interested persons to submit views that may not have been submitted in response to the prior opportunities for comment described above.

### List of Subjects in 14 CFR Part 25

Aircraft, Aviation safety, Reporting and recordkeeping requirements.

■ The authority citation for these special conditions is as follows:

**Authority:** 49 U.S.C. 106(g), 40113, 44701, 44702, 44704.

### The Special Conditions

■ Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for the Bombardier Model BD-100-1A10 airplane.

1. *General.* An Automatic Takeoff Thrust Control System (ATTCS) is defined as the entire automatic system, including all devices, both mechanical and electrical that sense engine failure, transmit signals, actuate fuel controls or power levers, or increase engine power by other means on operating engines to achieve scheduled thrust or power

increases and furnish cockpit information on system operation.

2. *ATTCS.* The engine power control system that automatically resets the power or thrust on the operating engine (following engine failure during the approach for landing) must comply with the following requirements stated in paragraphs 2.a, 2.b, and 2.c:

a. *Performance and System Reliability Requirements.*

(1) The probability analysis must include consideration of ATTCS failure occurring after the time at which the flightcrew last verifies that the ATTCS is in a condition to operate until the beginning of the critical time interval.

(2) The propulsive thrust obtained from the operating engine after failure of the critical engine during a go-around used to show compliance with the one-engine-inoperative climb requirements of § 25.12(d) may not be greater than the lesser of:

(i) The actual propulsive thrust resulting from the initial setting of power or thrust controls with the ATTCS system functioning; or

(ii) 111 percent of the propulsive thrust resulting from the initial setting of power or thrust controls with the ATTCS system failing to reset thrust or power and without any action by the crew to reset thrust or power.

b. *Thrust or Power Setting.*

(1) The initial thrust or power setting on each engine at the beginning of the takeoff roll or go-around may not be less than any of the following:

(i) That required to permit normal operation of all safety-related systems and equipment dependent upon engine thrust or power lever position; and

(ii) That shown to be free of hazardous engine response characteristics and not to result in any unsafe aircraft operating or handling characteristics when thrust or power is increased from the initial takeoff or go-around thrust or power to the maximum approved takeoff thrust or power.

(2) For approval of an ATTCS system for go-around, the thrust or power setting procedure must be the same for go-arounds initiated with all engines operating as for go-arounds initiated with one engine inoperative.

c. *Powerplant Controls.* In addition to the requirements of § 25.1141, no single failure or malfunction, or probable combination thereof, of the ATTCS, including associated systems, may cause the failure of any powerplant function necessary for safety. The ATTCS must be designed to:

(1) Apply thrust or power on the operating engine(s), following any one engine failure during takeoff or go-around, to achieve the maximum

approved takeoff thrust or power without exceeding engine operating limits; and

(2) Provide a means to verify to the flightcrew before takeoff and before beginning an approach for landing that the ATTCS is in a condition to operate.

3. *Critical Time Interval.* The definition of the Critical Time Interval in appendix I, § 125.2(b) shall be expanded to include the following:

a. When conducting an approach for landing using ATTCS, the critical time interval is defined as follows:

(1) The critical time interval begins at a point on a 2.5 degree approach glide path from which, assuming a simultaneous engine and ATTCS failure, the resulting approach climb flight path intersects a flight path originating at a later point on the same approach path corresponding to the part

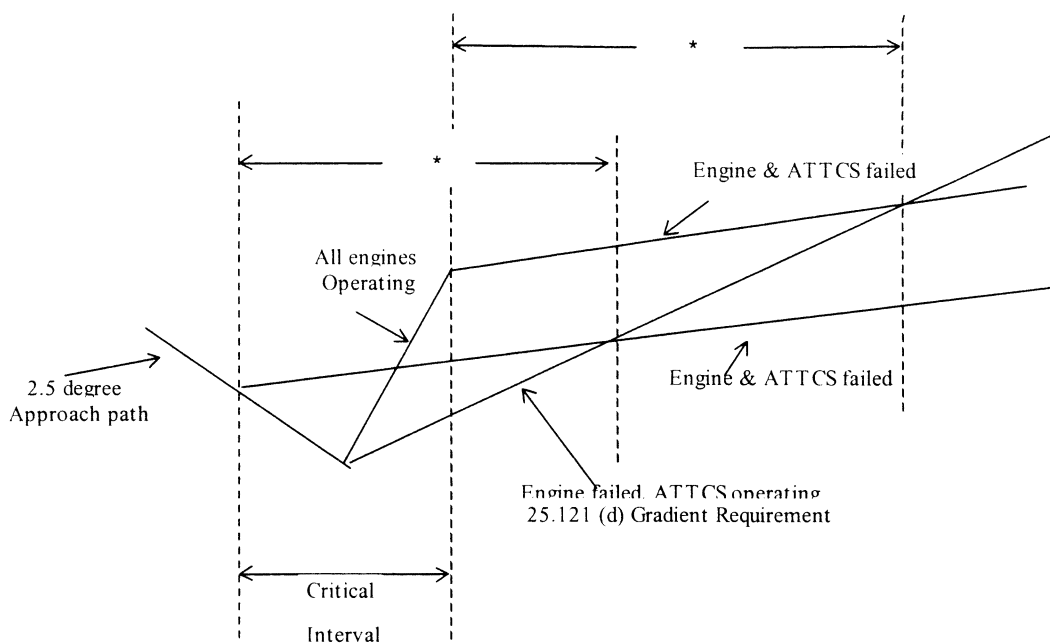
25 one-engine-inoperative approach climb gradient. The period of time from the point of simultaneous engine and ATTCS failure to the intersection of these flight paths must be no shorter than the time interval used in evaluating the critical time interval for takeoff beginning from the point of simultaneous engine and ATTCS failure and ending upon reaching a height of 400 feet.

(2) The critical time interval ends at the point on a minimum performance, all-engines-operating go-around flight path from which, assuming a simultaneous engine and ATTCS failure, the resulting minimum approach climb flight path intersects a flight path corresponding to the part 25 minimum one-engine-inoperative approach climb gradient. The all-engines-operating go-around flight path

and the part 25 one-engine-inoperative approach climb gradient flight path originate from a common point on a 2.5 degree approach path. The period of time from the point of simultaneous engine and ATTCS failure to the intersection of these flight paths must be no shorter than the time interval used in evaluating the critical time interval for the takeoff beginning from the point of simultaneous engine and ATTCS failure and ending upon reaching a height of 400 feet.

b. The critical time interval must be determined at the altitude resulting in the longest critical time interval for which one-engine-inoperative approach climb performance data are presented in the Airplane Flight Manual (AFM).

c. The critical time interval is illustrated in the following figure:



\* The engine and ATTCS failed time interval must be no shorter than the time interval from the point of simultaneous engine and ATTCS failure to a height of 400 feet used to comply with 125.2(b) for ATTCS use during takeoff.

Issued in Renton, Washington, on May 28, 2003.  
**Ali Bahrami,**  
*Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.*  
 [FR Doc. 03-14337 Filed 6-5-03; 8:45 am]  
**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

[Docket No. 2002-CE-53-AD; Amendment 39-13176; AD 2003-11-17]

RIN 2120-AA64

**Airworthiness Directives; Pilatus Aircraft Ltd. Models PC-12 and PC-12/45 Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that applies to certain Pilatus Aircraft Ltd. (Pilatus) Models PC-12 and PC-12/45 airplanes. This AD requires you to inspect the front and rear surfaces of the pressure dome for damage and cracks, and, if necessary, accomplish repairs. This AD is the result of mandatory continuing airworthiness information (MCAI) issued by the airworthiness authority for Switzerland. The actions specified by this AD are intended to detect and correct damage and cracks to the pressure dome, which could lead to rapid decompression.

**DATES:** This AD becomes effective on July 28, 2003.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the regulations as of July 28, 2003.

**ADDRESSES:** You may get the service information referenced in this AD from Pilatus Aircraft Ltd., Customer Liaison Manager, CH-6371 Stans, Switzerland; telephone: +41 41 619 63 19; facsimile: +41 41 619 6224; or from Pilatus Business Aircraft Ltd., Product Support Department, 11755 Airport Way, Broomfield, Colorado 80021; telephone: (303) 465-9099; facsimile: (303) 465-6040. You may view this information at the Federal Aviation Administration (FAA), Central Region, Office of the

Regional Counsel, Attention: Rules Docket No. 2002-CE-53-AD, 901 Locust, Room 506, Kansas City, Missouri 64106; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4059; facsimile: (816) 329-4090.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

*What Events Have Caused This AD?*

The Federal Office for Civil Aviation (FOCA), which is the airworthiness authority for Switzerland, recently notified FAA that an unsafe condition may exist on certain Pilatus Models PC-12 and PC-12/45 airplanes. The FOCA reports that drill and/or rivet tool damage could have occurred in areas around the edges of the rear pressure dome during assembly of the Models PC-12 and PC-12/45 airplanes.

Pilatus has received 19 reports of damaged pressure domes. The reported damage included nicks and scratches. This type of damage could also occur on the forward surface of the pressure dome.

*Has FAA Taken Any Action to This Point?*

We issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Pilatus Models PC-12 and PC-12/45 airplanes. This proposal was published in the **Federal Register** as a notice of proposed rulemaking (NPRM) on January 14, 2003 (68 FR 1802). The NPRM proposed to require you to inspect the front and rear surfaces of the pressure dome for damage and cracks, and, if necessary, accomplish repairs.

*What Is the Potential Impact if FAA Took No Action?*

The damage to the pressure dome could result in cracks in the pressure dome and lead to rapid decompression.

*Was the Public Invited To Comment?*

The FAA encouraged interested persons to participate in the making of this amendment. The following presents

the comment received on the proposal and FAA's response to the comment:

**Comment Issue: How To Obtain a Repair Scheme Is Unclear**

*What Is the Commenter's Concern?*

The commenter states that the current wording in the proposed AD is incorrect and implies that the repair scheme will come from FAA. Additionally, the commenter states that the repair scheme will come from the manufacturer; FAA will provide approval of the repair.

*What Is FAA's Response to the Concern?*

We do not concur that the current wording of the proposed AD is incorrect. Since the service information, which is referenced in the proposed AD, does not address repairs for this type of damage, FAA has to individually approve each repair as needed. This gives the manufacturer the option to develop other generic repair procedures, which were not developed at the time of the NPRM, for this type of damage and submit them to FAA for approval. Therefore, we have not changed the final rule AD based on this comment.

**FAA's Determination**

*What Is FAA's Final Determination on This Issue?*

We carefully reviewed all available information related to the subject presented above and determined that air safety and the public interest require the adoption of the rule as proposed except for the changes discussed above and minor editorial questions. We have determined that these changes and minor corrections:

- Provide the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

**Cost Impact**

*How Many Airplanes Does This AD Impact?*

We estimate that this AD affects 280 airplanes in the U.S. registry.

*What Is the Cost Impact of This AD on Owners/Operators of the Affected Airplanes?*

We estimate the following costs to accomplish the inspection:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
8 workhours × \$60 per hour = \$480 .....	No parts required .....	\$480	\$480 × 280 = \$134,400.