

[Federal Register Volume 80, Number 164 (Tuesday, August 25, 2015)]

[Rules and Regulations]

[Pages 51443-51447]

From the Federal Register Online via the Government Publishing Office [www.gpo.gov]

[FR Doc No: 2015-20692]

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## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2014-1044; Directorate Identifier 2014-NM-148-AD; Amendment 39-18245; AD 2015-17-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Cessna Aircraft Company Airplanes**

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

**ACTION:** Final rule.

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Cessna Aircraft Company Model 500, 501, 550, 551, S550, 560, and 650 airplanes. This AD was prompted by reports of smoke and/or fire in the tailcone caused by sparking due to excessive wear of the brushes in the air conditioning (A/C) motor. This AD requires inspections to determine if certain A/C compressor motors are installed and to determine the accumulated hours on certain A/C compressor motor assemblies; and repetitive replacement of the brushes in the A/C compressor motor assembly, or, as an option to the brush replacement, deactivation of the A/C system and placard installation; and return of replaced brushes to Cessna. We are issuing this AD to prevent the brushes in the A/C motor from wearing down beyond their limits, which could result in the rivet in the brush contacting the commutator, causing sparks and consequent fire and/or smoke in the tailcone with no means to detect or extinguish the fire and/or smoke.

**DATES:** This AD is effective September 29, 2015.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of September 29, 2015.

**ADDRESSES:** For service information identified in this AD, contact Cessna Aircraft Co., P.O. Box 7706, Wichita, KS 67277; phone: 316-517-6215; fax: 316-517-5802; email: citationpubs@cessna.textron.com; Internet <https://www.cessnasupport.com/newlogin.html>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-1044.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2014-1044; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Craig Henrichsen, Aerospace Engineer, Electrical Systems and Avionics Branch, ACE-119W, FAA, Wichita Aircraft Certification Office (ACO), 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, KS 67209; phone: 316-946-4110; fax: 316-946-4107; email: [Craig.Henrichsen@faa.gov](mailto:Craig.Henrichsen@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Cessna Aircraft Company Model 500, 501, 550, 551, S550, 560, and 650 airplanes. The NPRM published in the Federal Register on January 23, 2015 (80 FR 3516). The NPRM was prompted by reports of smoke and/or fire in the tailcone caused by sparking due to excessive wear of the brushes in the A/C motor. The NPRM proposed to require inspections to determine if certain A/C compressor motors are installed and to determine the accumulated hours on certain A/C compressor motor assemblies; and repetitive replacement of the brushes in the A/C compressor motor assembly, or, as an option to the brush replacement, deactivation of the A/C system and placard installation; and return of replaced brushes to Cessna. We are issuing this AD to prevent the brushes in the A/C motor from wearing down beyond their limits, which could result in the rivet in the brush contacting the commutator, causing sparks and consequent fire and/or smoke in the tailcone with no means to detect or extinguish the fire and/or smoke.

### **Comments**

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (80 FR 3516, January 23, 2015) or on the determination of the cost to the public.

### **Conclusion**

We reviewed the relevant data and determined that air safety and the public interest require adopting this AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (80 FR 3516, January 23, 2015) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (80 FR 3516, January 23, 2015).

### **Interim Action**

We consider this AD interim action. The reporting data required by this AD will enable us to obtain better insight into brush wear. The reporting data will also indicate if the replacement intervals

we established are adequate. After we analyze the reporting data received, we might consider further rulemaking.

**Related Service Information Under 1 CFR Part 51**

We reviewed the following service information, which describes procedures for replacement of life-limited components, including part number FWA1134104-1 or FWA1134104-5 A/C compressor motor brushes.

- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 6, dated June 23, 2014, of the Cessna Model 500/501 Maintenance Manual.
- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 10, dated June 23, 2014, of the Cessna Model 550/551 Maintenance Manual.
- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 12, dated June 23, 2014, of the Cessna Model 550 Bravo Maintenance Manual.
- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 9, dated June 23, 2014, of the Cessna Model S550 Maintenance Manual.
- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 22, dated June 23, 2014, of the Cessna Model 560 Maintenance Manual.
- Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 32, dated June 23, 2014, of the Cessna Model 650 Maintenance Manual.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of this AD.

**Costs of Compliance**

We estimate that this AD affects 333 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

**Estimated Costs—Brush Replacement**

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection and replacement	11 work-hours × \$85 per hour = \$935 per replacement cycle	\$252	\$1,187 per replacement cycle	\$395,271 per replacement cycle.
Reporting/return parts	1 work-hour × \$85 per hour = \$85 per return	0	85	\$28,305 per return (2 returns required).

**Estimated Costs—A/C Deactivation**

Action	Labor cost	Parts cost	Cost per product
Fabrication of placard for A/C deactivation	1 work-hour × \$85 per hour = \$85	\$0	\$85
Deactivation/reactivation of A/C	1 work-hour × \$85 per hour = \$85	0	85

## **Paperwork Reduction Act**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120-0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at 800 Independence Ave. SW., Washington, DC 20591. ATTN: Information Collection Clearance Officer, AES-200.

## **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

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

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



**2015-17-12 Cessna Aircraft Company:** Amendment 39-18245; Docket No. FAA-2014-1044; Directorate Identifier 2014-NM-148-AD.

**(a) Effective Date**

This AD is effective September 29, 2015.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to the Cessna Aircraft Company airplanes, certificated in any category, identified in table 1 to paragraph (c) of this AD, that have an air conditioning (A/C) system installed via a Cessna Aircraft Company supplemental type certificate (STC) identified in paragraph (c)(1), (c)(2), (c)(3), or (c)(4) of this AD.

(1) SA3849SW

([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/029C5719AD18E79C86257C1A0069742C?OpenDocument&Highlight=sa3849sw](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/029C5719AD18E79C86257C1A0069742C?OpenDocument&Highlight=sa3849sw)).

(2) SA7580SW

([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/7C9B0FB7D5923D4986257C1A0069E2C0?OpenDocument&Highlight=sa7580sw](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/7C9B0FB7D5923D4986257C1A0069E2C0?OpenDocument&Highlight=sa7580sw)).

(3) SA7753SW

([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/A78233CBB3314BAF86257C1A0069D128?OpenDocument&Highlight=sa7753sw](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/A78233CBB3314BAF86257C1A0069D128?OpenDocument&Highlight=sa7753sw)).

(4) SA8918SW

([http://rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgstc.nsf/0/5FAD7ABA3EAA464C86257C1A0069F239?OpenDocument&Highlight=sa8918sw](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgstc.nsf/0/5FAD7ABA3EAA464C86257C1A0069F239?OpenDocument&Highlight=sa8918sw)).

**Table 1 to Paragraph (c) of this AD–Affected Airplane Models and Serial Numbers (S/Ns)**

<b>Cessna aircraft company airplane models</b>	<b>S/Ns</b>
Model 500 and 501 airplanes	0001 through 0689 inclusive.
Model 550 and 551 airplanes	0002 through 0733 inclusive, and 0801 through 1136 inclusive.
Model S550 airplanes	0001 through 0160 inclusive.
Model 560 airplanes	0001 through 0707 inclusive, and 0751 through 0815 inclusive.
Model 650 airplanes	0200 through 0241 inclusive, and 7001 through 7119 inclusive.

**(d) Subject**

Air Transport Association (ATA) of America Code 21, Air Conditioning.

**(e) Unsafe Condition**

This AD was prompted by reports of smoke and/or fire in the tailcone caused by sparking due to excessive wear of the brushes in the A/C motor. We are issuing this AD to prevent the brushes in the A/C motor from wearing down beyond their limits, which could result in the rivet in the brush contacting the commutator, causing sparks and consequent fire and/or smoke in the tailcone with no means to detect or extinguish the fire and/or smoke.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspection for Part Number (P/N)**

Within 30 days or 10 flight hours after the effective date of this AD, whichever occurs first: Inspect the A/C compressor motor to determine whether P/N FWA1134104-1 or P/N FWA1134104-5 is installed. A review of airplane maintenance records is acceptable in lieu of this inspection if the part number of the A/C compressor motor can be conclusively determined from that review.

**(h) Inspection of Compressor Hour Meter and Maintenance Records**

If, during the inspection required by paragraph (g) of this AD, any A/C compressor motor having P/N FWA1134104-1 or P/N FWA1134104-5 is found: Within 30 days or 10 flight hours after the effective date of this AD, whichever occurs first, determine the hour reading on the A/C compressor hour meter as specified in paragraphs (h)(1) and (h)(2) of this AD.

(1) Inspect the number of hours accumulated on the A/C compressor hour meter.

(2) Check the airplane logbook for any entry for replacing the A/C compressor motor brushes with new brushes, or for replacing the compressor motor or compressor condenser module assembly (pallet) with a motor or assembly that has new brushes.

(i) If the logbook contains an entry for replacement of parts, as specified in paragraph (h)(2) of this AD, determine the number of hours accumulated on the A/C compressor motor brushes by comparing the number of hours on the compressor motor since replacement and use this number in lieu of the number determined in paragraph (h)(1) of this AD.

(ii) If, through the logbook check, a determination cannot be made regarding the number of hours accumulated on the A/C compressor motor brushes, as specified in paragraph (h)(2) of this AD, use the number of hours accumulated on the A/C compressor hour meter determined in paragraph (h)(1) of this AD, or presume the brushes have over 500 hours time-in-service.

**(i) Replacement**

Using the hour reading on the A/C compressor hour meter determined in paragraph (h) of this AD, replace the A/C compressor motor brushes with new brushes at the later of the times specified in paragraphs (i)(1) and (i)(2) of this AD. Thereafter, repeat the replacement of the A/C compressor motor brushes at intervals not to exceed 500 hours time-in-service on the A/C compressor motor. Do the replacement in accordance with the applicable Cessna maintenance manual subject specified in paragraphs (j)(1) through (j)(6) of this AD.

(1) Before the accumulation of 500 total hours time-in-service on the A/C compressor motor.

(2) Before further flight after doing the inspection required in paragraph (h) of this AD.

## **(j) Maintenance Manual Information for Replacement**

Use the instructions in the applicable Cessna maintenance manual subject specified in paragraphs (j)(1) through (j)(6) of this AD to do the replacement required by paragraph (i) of this AD.

(1) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 6, dated June 23, 2014, of the Cessna Model 500/501 Maintenance Manual.

(2) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 10, dated June 23, 2014, of the Cessna Model 550/551 Maintenance Manual.

(3) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 12, dated June 23, 2014, of the Cessna Model 550 Bravo Maintenance Manual.

(4) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 9, dated June 23, 2014, of the Cessna Model S550 Maintenance Manual.

(5) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 22, dated June 23, 2014, of the Cessna Model 560 Maintenance Manual.

(6) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 32, dated June 23, 2014, of the Cessna Model 650 Maintenance Manual.

## **(k) Deactivation of the A/C System**

In lieu of replacing the A/C compressor motor brushes as required by this AD, deactivate the A/C system as specified in paragraph (k)(1) or (k)(2) of this AD, as applicable.

(1) For all airplanes except Model 650 airplanes: Pull the vapor cycle A/C circuit breaker labeled "AIR COND," do the actions specified in paragraphs (k)(1)(i) and (k)(1)(ii) of this AD, and document deactivation of the system in the airplane logbook, referring to this AD as the reason for deactivation.

(i) Fabricate a placard that states: "A/C DISABLED" with 1/8-inch black lettering on a white background.

(ii) Install the placard on the airplane instrument panel within 6 inches of the A/C selection switch.

(2) For Model 650 airplanes: Pull the vapor cycle A/C circuit breaker labeled "FWD EVAP FAN," do the actions specified in paragraphs (k)(1)(i) and (k)(1)(ii) of this AD, and document deactivation of the system in the airplane logbook, referring to this AD as the reason for deactivation.

Note 1 to paragraph (k) of this AD: While the A/C system is deactivated, it is recommended that airplane operators remain aware of the operating temperature limitations specified in the applicable airplane flight manual.

## **(l) Reactivation of the A/C System**

If the A/C system is deactivated, as specified in paragraph (k) of this AD, prior to the A/C system being reactivated: Perform the inspection specified in paragraph (h) of this AD, and do the replacements specified in paragraph (i) of this AD, at the times specified in paragraph (i) of this AD. Return the A/C system to service by doing the actions specified in paragraph (l)(1) or (l)(2) of this AD, as applicable.

(1) For all airplanes except Model 650 airplanes: Push in the vapor cycle A/C circuit breaker labeled "AIR COND," remove the placard by the A/C selection switch that states "A/C DISABLED," and document reactivation of the system in the airplane logbook.

(2) For Model 650 airplanes: Push in the vapor cycle A/C circuit breaker labeled "FWD EVAP FAN," remove the placard by the A/C selection switch that states "A/C DISABLED," and document reactivation of the system in the airplane logbook.



### **(m) Parts Return and Reporting Requirements**

For the first two A/C compressor motor brush replacement cycles on each airplane, send the removed brushes to Cessna Aircraft Company, Cessna Service Parts and Programs, 7121 Southwest Boulevard, Wichita, KS 67215. Provide the brushes and the information specified in paragraphs (m)(1) through (m)(6) of this AD within 30 days after the replacement if the replacement was done on or after the effective date of this AD, or within 30 days after the effective date of this AD if the replacement was done before the effective date of this AD.

- (1) The model and serial number of the airplane.
- (2) The part number of the motor.
- (3) The part number of the brushes, if known.
- (4) The elapsed time, in motor hours, since the last brush/motor replacement, if known.
- (5) If motor hours are unknown, report the elapsed airplane flight hours since the last brush/motor replacement, and indicate that motor hours are unknown.
- (6) The number of motor hours currently displayed on the pallet hour meter, if installed.

### **(n) Parts Installation Limitation**

As of the effective date of this AD, no person may install an A/C compressor motor having P/N FWA1134104-1 or P/N FWA1134104-5, unless the inspection specified in paragraph (h) of this AD is done before installation, and the replacements specified in paragraph (i) of this AD are subsequently done in accordance with the applicable service information identified in paragraphs (j)(1) through (j)(6) of this AD at the times specified in paragraph (i) of this AD.

### **(o) Special Flight Permit Limitation**

Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) with the following limitation: Operation of the A/C system is prohibited.

### **(p) Paperwork Reduction Act Burden Statement**

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

### **(q) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Wichita Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (r) of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(r) Related Information**

For more information about this AD, contact Craig Henrichsen, Aerospace Engineer, Electrical Systems and Avionics Branch, ACE-119W, FAA, Wichita ACO, 1801 Airport Road, Room 100, Mid-Continent Airport, Wichita, KS 67209; phone: 316-946-4110; fax: 316-946-4107; email: Craig.Henrichsen@faa.gov.

**(s) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 6, dated June 23, 2014, of the Cessna Model 500/501 Maintenance Manual.

(ii) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 10, dated June 23, 2014, of the Cessna Model 550/551 Maintenance Manual.

(iii) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 12, dated June 23, 2014, of the Cessna Model 550 Bravo Maintenance Manual.

(iv) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 9, dated June 23, 2014, of the Cessna Model S550 Maintenance Manual.

(v) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 22, dated June 23, 2014, of the Cessna Model 560 Maintenance Manual.

(vi) Subject 4-11-00, Replacement Time Limits, of Chapter 4, Airworthiness Limitations, Revision 32, dated June 23, 2014, of the Cessna Model 650 Maintenance Manual.

(3) For service information identified in this AD, contact Cessna Aircraft Co., P.O. Box 7706, Wichita, KS 67277; phone: 316-517-6215; fax: 316-517-5802; email: citationpubs@cessna.textron.com; Internet <https://www.cessnasupport.com/newlogin.html>.

(4) You may view this service information at FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on August 10, 2015.

Michael Kaszycki,  
Acting Manager, Transport Airplane Directorate,  
Aircraft Certification Service.