



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2011-0562; Directorate Identifier 2011-CE-015-AD; Amendment 39-17740; AD 2014-03-03]**

**RIN 2120-AA64**

**Airworthiness Directives; Cessna Aircraft Company Airplanes**

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

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Cessna Aircraft Company (Cessna) Models 310, 320, 340, 401, 402, 411, 414, and 421 airplanes. This AD was prompted by an investigation of recent and historical icing-related accidents and incidents for the products listed above. This AD requires either having the supplemental airplane flight manual/airplane flight manual supplement (SAFM/AFMS) inside the airplane and accessible to the pilot during the airplane's operation or installing a placard that prohibits flight into known icing conditions and installing a placard that increases published airspeed on approach at least 17 mph (15 knots) in case of an inadvertent encounter with icing. We are issuing this AD to correct the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this AD, contact Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, KS 67277; telephone: (316)

517-5800; fax: (316) 517-7271; email: [customercare@cessna.textron.com](mailto:customercare@cessna.textron.com); Internet: <http://www.cessna.com/>. You may review copies of the referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

### **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-2011-0562; 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 Document 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:** Dan Withers, Program Manager, FAA, Wichita Aircraft Certification Office, 1801 S. Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4137; fax: (316) 946-4107; email: [dan.withers@faa.gov](mailto:dan.withers@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to certain Cessna Aircraft Company (Cessna) Models 310, 320, 340, 401, 402, 411, 414, and 421 airplanes. The NPRM published in the Federal Register on June 3, 2011 (76 FR 32103). The NPRM proposed to require you to install a placard that prohibits flight into known icing conditions and install a placard that increases published airspeed on approach at least 17 mph (15 knots) in case of an inadvertent encounter with icing. We are issuing this AD to prohibit flight into known

icing conditions as well as increase the approach speed in case of an inadvertent encounter with icing. This condition, if not corrected, could result in unusual flight characteristics that could lead to loss of control after flight into known icing conditions or an inadvertent encounter with icing conditions. Based on the data, an example of the unusual flight characteristics seen in many of the accidents is high sink speeds that resulted in a hard landing.

After publication of the NPRM (76 FR 32103, June 3, 2011), we re-evaluated our certification under the Regulatory Flexibility Act (RFA) that the proposed rule would not, if promulgated, have a significant impact on a substantial number of small entities. Based on our re-evaluation, we determined that the proposed rule would, if promulgated, have a significant impact on a substantial number of small entities. We completed an initial regulatory flexibility analysis (IRFA) and issued an availability of the IRFA that invited comments from the public. The availability of the IRFA published in the Federal Register on October 1, 2012 (77 FR 59873). We received no comments on the IRFA that pertained to cost and required a change to the IRFA. We completed the final regulatory flexibility analysis that is partially included in this AD. You may examine the complete analysis in the AD docket on the Internet at <http://www.regulations.gov/#!docketDetail;D=FAA-2011-0562>

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM (76 FR 32103, June 3, 2011) and the availability of the IRFA (77 FR 59873, October 1, 2012) and the FAA's response to each comment.

### **Support for the Proposed AD (76 FR 32103, June 3, 2011)**

Deborah A.P. Hersman, Chairman of the National Transportation Safety Board (NTSB) wrote supportive comments for the NPRM (76 FR 32103, June 3, 2011).

Deborah A.P. Hersman agreed that pilots of airplanes that have not been certificated for flight into known icing conditions may not realize that, even with deice boots or other similar equipment installed, the airplanes are not certificated for flight into known icing conditions. Further, Deborah A.P. Hersman noted the NTSB has investigated accidents involving the Cessna airplane models identified in the NPRM (76 FR 32103, June 3, 2011) that have accreted ice while operating in atmospheric icing conditions, which led to an increase of the stall speed.

Deborah A.P. Hersman commented that small amounts of ice on the protected and unprotected surfaces accreted in inadvertent icing encounters could result in potentially large increases in the stall speed and changes to the handling characteristics, to the point of experiencing aerodynamic stall or loss of control with no stall warning.

Kim Hackett of Cessna supported FAA's issuance of an AD mandating accomplishment of Cessna Service Bulletin MEB97-4. The service bulletin fulfills the requirements of the AD as outlined in the NPRM (76 FR 32103, June 3, 2011) regarding installation of a placard to prohibit flight into known icing on airplanes not specifically approved for such operations.

We have made no changes to this AD action based on these comments.

**Request FAA Use Pilot Training to Address this Safety Concern**

Kenneth Sutton, Linda Marlene Honegger of Corporate Aviation Services, LLC, Ed, Michael Burwell, Gary Thomas O'Toole, Gary Norton, James Creamer, Clayton Conrad of Squadron 2, Rich Clover, Fred von Zabern, Walter Embke, Harold Gaier, Alan Nicol of AeroFlight Academy of Aviation, Inc., Jeffrey Gaier, Kristine Hartzell of the Aircraft Owners and Pilots Association (AOPA), John Halbur, Kent William Potter, and Joseph M. Lambert of Northern Skies Aviation requested pilot training be used to address this safety concern.

Gary Thomas O'Toole, Gary Norton, Fred von Zabern, and Alan Nicol of AeroFlight Academy of Aviation, Inc. expressed that the solution to this issue would be recurrent training for pilots, with Fred von Zabern stating that this training should be required.

Alan Nicol of AeroFlight Academy of Aviation, Inc. felt that the training and procedures they developed have resulted in safely operating in icing conditions; therefore, he believes there is no unsafe condition. Walter Embke noted that the proposal of increased approach airspeed in icing is good judgment in any airplane.

William West and Kristin Winter also commented that this safety concern should be addressed through training and education of pilots. They further elaborated that airplanes without de-icing equipment can operate in icing conditions. Kristin Winter reasoned that design of the airplane and available excess horsepower are greater factors than installed de-icing equipment. William West also felt the training and education would benefit pilots on other airplanes in addition to the Cessna's twin piston-engine airplanes.

We do not agree with these comments. The FAA recognizes that training and education could benefit all pilots, not just pilots of Cessna's twin piston-engine airplanes. The FAA sponsored development of numerous icing training products for general aviation pilots, revised Advisory Circular (AC) 91-74A, Pilot Guide: Flight in Icing Conditions

([rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgAdvisoryCircular.nsf/0/4c8192bb0b733862862573d2005e7151/\\$FILE/AC%2091-74A.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/4c8192bb0b733862862573d2005e7151/$FILE/AC%2091-74A.pdf)), with safety information, as well as issued Special Airworthiness Information Bulletin (SAIB) CE-11-18, Ice/Rain Protection System – Stall Warning Stall Warning System Characteristics in Icing Conditions ([rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgSAIB.nsf/0/eb2e63f033aa98ad8625782200586295/\\$FILE/CE-11-18.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/0/eb2e63f033aa98ad8625782200586295/$FILE/CE-11-18.pdf)). The FAA wrote SAIB CE-11-18 to inform pilots of

normal, utility, acrobatic, and commuter category (part 23) airplanes certificated before the year 2000 of the potential hazards associated with stall warning characteristics in icing conditions. However, there are no mandatory FAA requirements for a pilot to receive training on icing. Furthermore, training cannot be relied upon to correct this unsafe condition.

Service history has shown training alone cannot keep a pilot from inadvertently flying closer to stall. It may be possible, for an airplane with adequate power, to fly in the middle of the flight envelope in light icing conditions; however, icing conditions can vary greatly. Even a light accretion will reduce safety margins, such as stall warning, and contribute to the unsafe condition.

Training cannot compensate for an airplane not equipped to handle the icing environment specified in the regulations. The airplane manufacturer has placed a limitation on the airplane based on the installed equipment that has not been shown acceptable for flight into known icing conditions. Therefore, we have determined that an unsafe condition exists when these airplanes operate in icing conditions.

We have made no changes to this AD action based on these comments.

#### **Request Change AD Requirements**

Kenneth Sutton, Ed, Michael Burwell, Rolf G. Fuchs, John W. Savage, Brian Boyter, Clayton Conrad of Squadron 2, Rich Clover, The Honorable Todd Rokita, Member of Congress, and Kristine Hartzell of AOPA requested that both placards not be required because the operating manual already states a limitation or there is no room in the cockpit for the additional placards.

The Honorable Todd Rokita, Member of Congress, and Kristine Hartzell of AOPA wrote that a placard prohibiting flight into known icing conditions is redundant. One commenter felt that a placard would not be sufficient to keep a pilot from flying into icing conditions. Clayton Conrad recommended creating an additional page in the flight

manual.

We partially agree that there may not be enough room for the placards on the cockpit because of other installed equipment or other placards. However, we disagree that there is already a limitation on the airplanes because the certification basis for these airplanes either requires an FAA-approved flight manual or appropriate placards that state the required information.

Based on feedback on the lack of space to put placards in the airplane, we created an SAFM/AFMS to use in lieu of installing both of the placards and changed the AD's requirements to require either the SAFM/AFMS or the placards. We included the SAFM/AFMS as Appendix 1 to this AD.

**Request FAA Withdraw the NPRM (76 FR 32103, June 3, 2011) Since Pilots Know When an Airplane is Certificated for Flight into Known Icing**

Michael Burwell, Rolf G. Fuchs, Brian Boyter, and John Halbur commented that the AD is not necessary since pilots know when an airplane is certificated for flight into known icing conditions. Michael Burwell wrote that from a practical perspective, a pilot who has the experience and training to fly multi-engine airplanes is going to know whether it is certificated for flight into known icing conditions.

Rolf G. Fuchs noted that, unless otherwise stated, small airplanes are not certificated for flight into known icing conditions.

Brian Boyter commented that it is already illegal to fly into known icing conditions unless the airplane is certificated for operation into known icing conditions. John Halbur stated that the airplanes listed in Cessna Service Bulletin MEB97-4, dated March 24, 1997, are not certificated for flight into known icing conditions, but they are allowed to be flown into known icing conditions when properly equipped as stated in part 135.227.

We disagree with these comments because the limitations section of an FAA-approved AFM or placards are the only legal method in 14 CFR part 91 operations to prohibit an airplane from flight into known icing conditions, without permanently grounding the airplanes. The certification basis for these airplanes either requires an FAA-approved flight manual or appropriate placards that state the required information.

In response to Brian Boyter's comments, the answer is complex: In some cases, the answer is that it is not necessarily illegal to fly into known icing conditions if the airplane has not been certificated for known icing. The term certificated for known icing came into being about the mid-1970s when some of the airplane certification rules and criteria to install ice equipment on airplanes were changed. So, in some earlier applications, the manufacturer may have installed what is commonly referred to today as a “no-hazard system” and would not have been required to specify if the airplanes were intended to fly into icing conditions.

For airplanes not subject to 14 CFR 91.527 (Subpart F) or 14 CFR 135.227, and not operating under 14 CFR part 121 or 14 CFR part 125, 14 CFR 91.9 is applicable. An AFM limitation or placard is required to prohibit an airplane from flight into known icing conditions. 14 CFR 91.9 would take priority over 14 CFR 91.527 or 14 CFR 135.227, for example, for an airplane that was equipped but certificated as specified in those regulations.

Since there is no FAA-approved flight manual for most of the airplanes identified in this AD, the FAA is mandating either installing placards or an SAFM/AFMS we created to use in lieu of installing both of the placards. We included the SAFM/AFMS as Appendix 1 to this AD.

We have made no changes to this AD action based on these comments.

## **Request FAA Clarify Definition of “Icing Conditions”**

John Halbur, Jeff Veers of Aviation on Demand LLC, Gary Norton, Brad Hoeltzner, William West, and Tracy A. Schoenrock of Pro Aire Cargo & Consulting commented that the AD, as written, would ground all airplanes that are not certificated for flight into known icing conditions anytime icing conditions are forecast and needlessly limit the ability to dispatch affected airplanes in the winter months.

William West commented that the FAA has not defined what known icing conditions are and further noted that this AD will result in fewer submissions of pilot reports (PIREPS) because of the fear that pilots will have enforcement action taken against them. Brad Hoeltzner stated that the definition for flight into known icing conditions is if there are clouds (visible moisture) and that the temperature is below 32 degrees Fahrenheit. We conclude that commenters want the FAA to further define “icing conditions.”

We do not agree with the comments since the AD will prohibit airplanes from flying into only known icing conditions.

The definition of known icing conditions were defined in a legal interpretation to AOPA on January 16, 2009, and it is defined in the FAA-issued Aeronautical Information Manual (AIM) ([faa.gov/air\\_traffic/publications/atpubs/aim/](http://faa.gov/air_traffic/publications/atpubs/aim/)).

Flight in potential icing conditions (visible moisture such as clouds at freezing temperatures), as well as forecast icing, are not prohibited, as long as there are no relevant PIREPs. If an applicable airplane encounters icing in an area with no prior reported icing and the pilot takes precautions to minimize an encounter and follows an exit strategy that had been planned on pre-flight, the pilot should not be concerned about legal action. The FAA does not want to discourage submission of PIREPs.

We have made no changes to this AD action based on these comments.

## **Request FAA Remove AD's Requirement to Increase the Speed on Approach**

Rolf G. Fuchs, John W. Savage, William West, Kim Hackett of Cessna, and Kristine Hartzell of AOPA requested the FAA remove the requirement to increase the speed on approach. Rolf G. Fuchs commented that having a mandated speed cannot take into account the real life operating conditions on a particular flight and there is no factual support for the speed increase to be stated on the placard.

Rolf G. Fuchs, John W. Savage, William West, and Kim Hackett of Cessna commented that the placard was not necessary since it was standard procedure and Cessna has an inadvertent icing encounter procedure that states to increase airspeed on approach. Kristine Hartzell stated concerns about the unintended consequence of pilots having runway overrun accidents due to increased approach speeds.

We agree that having a mandated speed cannot take into account the real life operating conditions on a particular flight and that landing distance will increase as the approach speed increases because variations in the icing conditions could require additional speed.

The FAA recognizes that Cessna has a procedure for inadvertent icing encounters in their owner's manual and pilot safety and warning supplements (PSWS), which provides guidance to pilots for dealing with inadvertent icing. This procedure for inadvertent icing encounters provides information for the pilot to increase airplane speed on approach and increase airplane landing distance; however, the owner's manual or PSWS are not required to be carried in the airplane.

Landing distance data is not required by the certification basis for many of the airplanes identified in this AD. In FAA-H-8083-25A, Pilot's Handbook of Aeronautical Knowledge ([faa.gov/library/manuals/aviation/pilot\\_handbook/media/](http://faa.gov/library/manuals/aviation/pilot_handbook/media/)), there is guidance for what happens to landing distance when a pilot increases airspeed on approach. It is assumed that this is general pilot knowledge.

Based on the number of hard landings attributed to these airplane models, guidance in FAA-H-8083-25A, and feedback received on the NPRM (76 FR 32103, June 3, 2011), the FAA deemed it appropriate to quantify how much to increase the approach speed and add clarification to the procedure specified in the owner's manual and PSWS to avoid high sink speeds upon landing. We changed the required placard's text to read "at least 17 mph (15 knots)." We also inserted in the note section of Appendix 1 of this AD (the SAFM/AFMS) language that tells the pilot to increase their landing distance by a factor of at least 1.5. This factor was calculated based on the change in energy due to the increase in approach speed  $(V_{app}+17\text{mph})^2 / V_{app}^2$ . Based on accident history, a runway overrun on this class of airplane has less chance of being fatal than a stall on approach.

**Request FAA Change Placard to State: "Not Certified for Flight into Known Icing Conditions"**

Brad Hoeltzner requested the FAA change the placard to state: "Not Certified for Flight into Known Icing Conditions." Brad Hoeltzner wrote this would meet the requirements of informing the pilot that his airplane has not been certificated or tested to meet a standard for flight into known icing conditions but, when properly equipped, has been approved or accepted as satisfactory. The airplanes listed in Cessna Service Bulletin MEB97-4, dated March 24, 1997, are not certificated for flight into known icing conditions, but they are allowed to be used when properly equipped as stated in 14 CFR 135.227.

We disagree with the request. The intent of the placard is to prohibit flight into known icing conditions for the airplanes identified since the airplanes are not properly equipped and have not been shown to be safe to operate in the conditions specified by the regulations. Based on the guidance in AC 135-9, FAR Part 135 Icing Limitations

([rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgAdvisoryCircular.nsf/0/3f83f89f0ef9ca17862569eb006cf35c/\\$FILE/AC135-9.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/3f83f89f0ef9ca17862569eb006cf35c/$FILE/AC135-9.pdf)), the airplane will not meet the requirements of 14 CFR 135.227.

We have made no changes to this AD action based on these comments.

#### **Request Applicability Include All Cessna Twin Piston-engine Airplanes**

Brad Hoeltzner commented that this AD should apply to all Cessna twin-engine airplanes. He reasoned that the performance differences between airplanes certificated for flight into known icing conditions and airplanes non-certificated for flight into known icing conditions is very minor when icing is encountered.

We do not agree with the comments. The airplanes and their system performance do vary between the certificated and non-certificated variants identified. As an example, due to performance limitations of the airplane, Cessna added a de-ice boot on the vertical tail of the Model 310 airplane to remove the additional ice. For the same reason, they also had to add de-ice boots on the wing between the engine nacelle and fuselage of the Model 310 airplane.

We have made no changes to this AD action based on these comments.

#### **Request AD Allow Pilot to Install the Placard**

John W. Savage commented that the AD should allow the pilot to install the placard.

We have determined that the pilot should be able to install the placards provided the airplane is not used in 14 CFR part 119 operations. No special training or tools are required to do this action and, thus can adequately be done by a pilot or a mechanic. The pilot must record compliance in the aircraft's maintenance records in accordance with applicable regulations.

We have changed the final rule to make this allowance.

### **Request AD's Applicability Not Include the Model 421C Airplane**

Gary Norton requested the AD's applicability not include the Model 421C airplane.

We agree with the comments. The NPRM (76 FR 32103, June 3, 2011) did not include the Model 421C airplane in paragraph (c), the Applicability section, and this AD does not include the Model 421C in paragraph (c), the Applicability section.

We have made no changes to this AD action based on these comments.

### **Request FAA Address this Safety Concern in ACs**

Clayton Conrad of Squadron 2 requested the FAA use ACs to address safety concerns for airplanes that may have anti/de-icing systems but are not approved for flight into known icing.

We do not agree with these comments. This is a special circumstance where most of the inadvertent icing systems already have a placard prohibiting flight into known icing conditions; an advisory circular in this instance would not fully address the unsafe condition since advisory circulars are advisory in nature and not required actions.

We have made no changes to this AD action based on these comments.

### **Request FAA Withdraw the NPRM (76 FR 32103, June 3, 2011) Because of Confusing Data**

Jeff Veers of Aviation on Demand LLC, and Alan Nicol of AeroFlight Academy of Aviation, Inc. requested the FAA withdraw the NPRM (76 FR 32103, June 3, 2011). Jeff Veers reasoned that 51 incidents and accidents during the past 30 years do not appear to be a statistically significant number to warrant AD action.

Kim Hackett and Joshua Southard of Cessna and Alan Nicol found it unclear from the NPRM (76 FR 32103, June 3, 2011) how many of the 51 reported icing-related accidents and incidents were directly attributed to continued flight in icing conditions by airplanes not properly equipped or certificated for flight into these conditions. They noted

it is also unclear how many of these icing-related accidents and incidents might have been prevented if the placard defined in Cessna Service Bulletin MEB97-4, dated March 24, 1997, had been installed. Joshua Southard of Cessna stated that the AD does not specify the accident rate per 100,000 operating hours.

Jeff Veers asked the FAA the questions: How does this rate of occurrence compare to other airplane models when considering hours flown and do airplanes of the same model that are certificated for flight into known icing conditions have a similar record?

We do not agree with the comments. There were actually more icing-related accidents for the airplane models identified, but as part of the analysis in support of this rule, airplanes and their equipment involved with the incidents were carefully evaluated. The NTSB factual and probable causes on NTSB's website, as well as the NTSB dockets, were evaluated to determine that if this AD had been in place, could the accidents have been prevented.

As part of determining what level of action to take, the FAA used a risk-based determination assessment. This analysis takes into account the total number of events, their severity (accident opposed to incident, fatality opposed to no injuries), the total number of airplanes, and an estimate of the average number of flight hours per airplane per year. Based on this analysis and FAA guidelines for risk acceptance, this AD action is warranted.

In response to Jeff Veers' question of "how does this rate of occurrence compare to other airplane models when considering hours flown?", we believe that the rate of occurrence cannot be logically compared to other models that are not affected by this AD since they do not have the same aerodynamic design nor do they have the same de-icing equipment.

As to Jeff Veers' question of "do airplanes of the same model that are certificated for flight into known icing conditions have a similar record?", that analysis was not done since Cessna did not issue a service bulletin to limit those airplanes from flight into known icing. In response to Kim Hackett and Alan Nicol, the airplanes in the 51 icing-related accidents and incidents were all believed to have been equipped with some or all of the de-ice equipment available for these airplane models.

The FAA filtered the data to not consider icing related accidents and incidents on airplanes that were not equipped with de-ice equipment or where the de-ice equipment was not functional. The FAA believes that all of these accidents could have been avoidable if the placard specified by Cessna Service Bulletin MEB97-4 had been installed, the limitations were followed, and/or the pilots had increased their speed on approach.

We have made no changes to this AD action based on these comments.

### **Request FAA Provide a Means to Equip Airplanes to Allow Flight into Known Icing**

Jeff Veers of Aviation on Demand LLC and Walter Embke requested FAA provide a means to equip airplanes to allow flight into known icing conditions.

Jeff Veers reasoned that since later models of the airplanes identified in this AD have been certificated for flight into known icing, it seemed reasonable that earlier models could be equally equipped and certificated.

Walter Embke noted the need for the FAA to clarify what equipment is needed to be added or retrofitted to this class of airplane to meet equipment requirements to operate in limited icing conditions.

We disagree with the request. It is not the FAA's responsibility to provide design data; only to review and, if acceptable, approve such data. If an owner/operator submits substantiating data to support modifications as an alternative method of compliance (AMOC) to this requirement, the FAA will review and consider all AMOC requests we receive provided they follow the procedures in 14 CFR 39.19 and this AD.

We have made no changes to this AD action based on these comments.

### **Request FAA Consider All Costs Associated With Compliance**

Jeff Veers of Aviation on Demand LLC, Harold Gaier, Jeffery Gaier, and Alan Nicol of AeroFlight Academy of Aviation, Inc. requested the FAA consider all costs associated with compliance with this AD. They commented the identified costs in the NPRM (76 FR 32103, June 3, 2011) did not reflect the operational ramifications and the loss of revenue to companies and/or individuals.

Jeff Veers stated that based on this AD, limiting these airplanes from flight into known icing conditions, Aviation on Demand LLC would be affected by tens of thousands of dollars due to the inability to fly the identified airplanes into known icing conditions.

Alan Nicol stated that the costs directly associated with the NPRM (76 FR 32103, June 3, 2011) as written are minimal; however, the indirect costs to AeroFlight Academy of Aviation, Inc. and other operators or individuals could easily exceed their ability to continue operations. Mr. Nicol believes that the inability to operate airplanes in known icing conditions would be a crippling blow in his region of the country. Alan Nicol commented that the overall annual losses for just AeroFlight Academy of Aviation, Inc. could exceed \$1,000,000 if the NPRM (76 FR 32103, June 3, 2011) was adopted as proposed. The commenter feels the company would be unable to continue to meet their

daily contractual obligations due to a lack of operational airplanes, and further losses would likely follow due to the loss in value of AeroFlight's assets, primarily the value of the airplanes. Alan Nicol also noted that this rule violates Executive Order 12866.

We agree with the request. The requirement for the cost section of an AD is to state the time and cost associated with completing the AD. This would be installing a placard or incorporating an AFM; not a huge workload or cost.

The FAA recognizes there is an impact to operations (and loss of revenue) due to the limitations on the airplanes imposed by this AD. The FAA completed the IRFA, and its availability was published in the Federal Register (77 FR 59873, October 1, 2012). We completed the final regulatory flexibility analysis, partially included in this AD action. You may examine the complete analysis in the AD docket on the Internet at <http://www.regulations.gov>. The FAA determined that the safety benefit provided by mandating the changes to the airplane operational limitations outweighs the overall cost of compliance. This determination is consistent and in compliance with Executive Order 12866.

Based on these comments, we have added some language explaining the regulatory flexibility analysis to this AD action and have expanded the cost section to include the operational costs associated with this AD action.

**Request FAA Address Flight into Known Icing Conditions by Airplanes Not Approved for Icing as a Global Industry-wide Issue**

Kim Hackett of Cessna wrote that flight into icing conditions by airplanes not approved for icing is an industry-wide issue, and the FAA needs to consider it in a much more "global" context than is presented in the NPRM (76 FR 32103, June 3, 2011). To this end, Kim Hackett recommended the FAA address this issue through publication of a document such as a safety alert for operators (SAFO), information for operators (InFO), AC, SAIB, or supplement to the AIM ([faa.gov/air\\_traffic/publications/atpubs/aim/](http://faa.gov/air_traffic/publications/atpubs/aim/)).

We agree that flight into known icing conditions by airplanes not approved for icing is an industry-wide issue, and we should consider it in a much more "global" context than is presented in the NPRM (76 FR 32103, June 3, 2011). The FAA has issued numerous reference publications (SAFO, InFO, AC, and SAIBs) to the public, and we will continue to issue publications and take action as necessary.

This AD is necessary to address and clarify the limitation of the identified airplane models in this AD as well as to address the large number of icing-related accidents and incidents that have occurred due to hard landings related to operations in icing conditions.

The FAA published SAIB CE-11-18 (You may find the SAIB at [rgl.faa.gov/Regulatory\\_and\\_Guidance\\_Library/rgSAIB.nsf/0/eb2e63f033aa98ad8625782200586295/\\$FILE/CE-11-18.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/0/eb2e63f033aa98ad8625782200586295/$FILE/CE-11-18.pdf)) to inform pilots of normal, utility, acrobatic, and commuter category (part 23) airplanes certificated before year the 2000 of the potential hazards associated with stall warning characteristics in icing conditions. We plan to re-issue this SAIB every two years before the U.S. winter icing season.

We have made no changes to this AD action based on these comments.

**Request the FAA Withdraw the NPRM (76 FR 32103, June 3, 2011) Because it Will Not Affect Safety**

The Honorable Todd Rokita, Member of Congress, requested the FAA withdraw the NPRM (76 FR 32103, June 3, 2011). Todd Rokita commented that the adoption of this AD will not result in safer air travel.

We do not agree. Based on the accident and incident history, the FAA estimates that we could prevent 1.5 accidents and/or incidents and 1.2 deaths of the American flying public from occurring every year. The results of our risk-based analysis show this AD is needed and warranted.

We have made no changes to this AD action based on these comments.

### **Request the FAA Justify Taking AD Action on Certain Airplanes Made by Cessna**

The Honorable Todd Rokita, Member of Congress, and Kristine Hartzell of AOPA requested the FAA explain the reasoning behind taking AD action on the identified airplanes as it appeared we were singling out the Cessna airplanes identified in this AD.

We disagree that the FAA is singling out the Cessna airplanes. Cessna issued Service Bulletin MEB97-4, which required the installation of a placard to prohibit flight into known icing. Based on the accident history, the FAA believes there is an unsafe condition on the identified airplanes and requires the completion of the Cessna service bulletin.

During FAA's review of the accidents and incidents, it was determined that there was a large number of hard landings due to high sink speeds. Based on these accidents and incidents, the FAA is mandating a minimum approach speed increase to avoid these high sink speeds.

If the FAA identifies similar problems and determines that an unsafe condition exists on other non-Cessna airplanes, we would take appropriate action to address the issue.

We have made no changes to this AD action based on these comments.

### **Request the FAA Withdraw the NPRM (76 FR 32103, June 3, 2011) Because it is an Operational Issue**

The Honorable Todd Rokita, Member of Congress, and Kristine Hartzell of AOPA requested the FAA withdraw the NPRM (76 FR 32103, June 3, 2011). They commented that ADs are to be used for airworthiness issues, not operational issues.

We do not agree with the comments. The airplane limitations and their flight manuals are part of the airworthiness of the airplane. Cessna specified the change to add the prohibition of flight into known icing, and, in order to make those changes legally required, the FAA is issuing this AD.

We have made no changes to this AD action based on these comments.

**Request FAA Withdraw the NPRM (76 FR 32103, June 3, 2011) Since Service Bulletin Addressed Safety Issue**

Kristine Hartzell of AOPA requested the FAA withdraw the NPRM (76 FR 32103, June 3, 2011) since Cessna addressed this issue in the issuance of a mandatory service bulletin in 1997. Kristine Hartzell wrote that Service Bulletin MEB97-4 was issued to resolve any confusion regarding the icing certification status of these Cessna twin piston-engine airplanes. Since the mandatory service bulletin already addressed this issue, Kristine Hartzell questioned whether or not a real safety concern exists for these airframes in particular and if the proposed two placards would have any effect on safety.

We do not agree with the comments. This issue was clarified in FAA's letter to AOPA, dated February 24, 2004 ([aopa.org/-/media/Files/AOPA/Home/News/All%20News/News%20Archives/2006/AOPA%20stands%20against%20mandatory%20service%20bulletins%20for%20Part%2091%20aircraft/060614sb-letter.pdf](http://aopa.org/-/media/Files/AOPA/Home/News/All%20News/News%20Archives/2006/AOPA%20stands%20against%20mandatory%20service%20bulletins%20for%20Part%2091%20aircraft/060614sb-letter.pdf)). A company's mandatory service bulletin only specifies what is to be done; the AD legally requires the actions.

We have made no changes to this AD action based on these comments.

**Request FAA Clarify Accident History Spanned 30 Years**

Walter Embke commented that the NPRM (76 FR 32103, June 3, 2011) was trying to imply that all of icing accidents that were evaluated were recent, when in fact the accident history spanned 30 years.

We do not agree with the comments. We believe the AD is clear that recent icing-related accidents and incidents led us to investigate accidents over the past 30 years to get a historical perspective and to determine that there is an unsafe condition.

We have made no changes to this AD action based on these comments.

**Request FAA’s Principal Maintenance and Operations Inspectors (PMI and POI, respectively) of Affected Operators Make Decision to Operate Affected Airplanes in Icing Conditions**

Tracy A. Schoenrock of Pro Aire Cargo Consulting requested FAA leave the decision of operating fully-deiced airplanes to the POIs and PMIs of the operators affected if there are any legitimate safety concerns involving them.

We do not agree with the request. This is an unsafe condition and is likely to exist on other airplanes. The FAA is regulatory bound to mitigate the unsafe condition and a means of doing that is through the issuance of an AD.

We have made no changes to this AD action based on these comments.

**Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (76 FR 32103, June 3, 2011) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (76 FR 32103, June 3, 2011).

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

## **Costs of Compliance**

We estimate that this AD affects 4,206 airplanes of U.S. registry.

For these airplanes, operators will incur the minimal cost of placard fabrication and installation.

We estimate that 1,608 of the airplanes affected by this AD were produced with deicing equipment.

We estimate the operator costs of no longer being able to fly these airplanes into known icing conditions by the net capital cost of substituting for the affected airplanes, airplanes in the same or similar series certificated for flight into known icing conditions.

We limit our cost estimate to a 10-year period to simplify the analysis. The substituting operator will incur a net increase in capital costs. We measure the 10-year capital cost of an airplane by estimating the decline in its value over the 10-year period. Substitute airplanes are more expensive, have a higher capital cost, and will decline more in value than less expensive affected airplanes.

The net cost of this AD per affected airplane will be the net decline in airplane value incurred by operators substituting newer, more expensive, airplanes for older, less expensive affected airplanes. We approximate the decline in airplane value over time. For both the affected and substitute airplanes, we amortize the 10-year decline in airplane value to generate a 10-year annual series of declines in airplane value.

For the affected airplanes, we estimate the 10-year series starting from average affected airplane value at average age 45 to estimated value at age 55. For the substitute airplanes, we estimate the 10-year series from their average value at average age 34 to estimated value at age 44. We calculate net changes in value by subtracting the affected airplane series from the substitute airplane series.

We estimate the following direct costs (the sum of labor and parts costs) and capital costs on U.S. operators for this AD.

<b>Estimated costs</b>						
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Labor &amp; parts cost per airplane</b>	<b>Capital cost per airplane</b>	<b>Number of affected airplanes</b>	<b>Cost on U.S. operators</b>
Install placards	1 work-hour x \$85 per hour = \$85	\$1	\$86		4,206	\$361,716
Prohibit flight into known icing				\$60,277	1,608	\$96,515,024

You may view a detailed copy of our cost of compliance in the Federal Docket Management System at the address listed in Examining the AD Docket.

**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.

## **Final Regulatory Flexibility Analysis**

This section presents the final regulatory flexibility analysis (FRFA) that was done for this action. We have reworded and reformatted for Federal Register publication purposes. The FRFA in its original form can be found in the docket at <http://www.regulations.gov>.

### Introduction and Purpose of This Analysis

The Regulatory Flexibility Act of 1980 (Public Law 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration.” The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

Section 604 of the Act requires agencies to prepare an FRFA describing the impact of final rules on small entities. Section 604(a) of the Act specifies the content of a FRFA. The results of this FRFA show that this rule will have a significant economic impact on a substantial numbers of small entities.

Each FRFA must contain:

- A statement of the need for, and objectives of, the rule;
- A statement of the significant issues raised by the public comments in response to the initial regulatory flexibility analysis, a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments;
- The response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments;
- A description of and an estimate of the number of small entities to which the rule will apply or an explanation of why no such estimate is available;
- A description of the projected reporting, recordkeeping and other compliance requirements of the rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for preparation of the report or record; and
- A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected.

**1. The need for, and objectives of, the final rule**

This AD requires the installation of a placard prohibiting flight into known icing conditions and installation of a second placard that increases published speed on approach by 17 mph (15 knots) in case of an inadvertent encounter with icing or the use of the SAFM/AFMS that incorporates the same limitations as the placards. With the

limited deicing equipment of the affected airplanes, flight into known icing conditions could result in unusual flight characteristics leading to loss of control with consequent accidents. Many of the Cessna accidents were the result of high sink speeds, which may have been related to icing, resulting in hard landings. Failure to mandate an increased published speed may result in continuing occurrences of this unusual flight characteristic with consequent accidents.

**2. The significant issues raised by the public comments in response to the initial regulatory flexibility analysis, a statement of the assessment of the agency of such issues, and a statement of any changes made in the proposed rule as a result of such comments**

The FAA is unaware of any issues raised by public comments specifically pertaining to cost in response to the availability of the IRFA (77 FR 59873, October 1, 2012). The FAA has made no changes in this regard to this AD.

**3. The response of the agency to any comments filed by the Chief Counsel for Advocacy of the Small Business Administration in response to the proposed rule, and a detailed statement of any change made to the proposed rule in the final rule as a result of the comments**

The FAA is unaware of any comments filed by the Chief Counsel for Advocacy of the Small Business Administration (SBA) in response to the proposed AD. The FAA has made no changes in this regard to this AD action.

**4. A description of and an estimate of the number of small entities to which the final rule will apply or an explanation of why no such estimate is available**

For all of the U.S. industries, the SBA maximum small business size is 1,500 employees. Since this AD applies to all certificate holders operating some of Cessna airplane models, we obtained information on small entities based on a questionnaire sent directly to seven firms and an online survey conducted by AOPA. All of the entities in

both samples are well below 1,500 employees. We estimated the number of small entities to be about 104, excluding individuals who used their airplanes for personal use only.

**5. A description of the projected reporting, recordkeeping and other compliance requirements of the final rule**

Small entities will incur no new reporting and record-keeping requirements as a result of this AD. Persons who own and operate the affected airplanes must meet requirements to install placards on their airplanes or incorporate an SAFM/AFMS that requires the same operating limitations as the placards.

**6. A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the final rule considered by the agency which affect the impact on small entities was rejected**

The FAA has taken steps to minimize the significant adverse economic impact on small entities. The requirement of installing placards is a significant alternative to other burdensome regulatory choices, such as mandatory installation of de-icing equipment certificated for flight into known icing conditions or flight prohibition of many models involved in the Cessna accidents. The FAA also allows, in lieu of installing the placards, the option of incorporating an SAFM/AFMS that requires the same operating limitations as the placards. Balancing with safety considerations and impacts on small entities, we found there is no other significant alternatives to installing placards or incorporating an SAFM/AFMS that prohibits the affected airplanes from flying into known icing conditions and an additional placard mandating an increase in published speed on approach in case of an inadvertent encounter with icing.

## **Regulatory Findings**

We have determined that 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 the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this AD (and other information as included in the Regulatory Evaluation) and placed it in the AD Docket, which may be found on the Internet at <http://www.regulations.gov>; or in person at the Document 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.

## **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 an airworthiness directive (AD):  
2014-03-03 **Cessna Aircraft Company**: Amendment 39-17740; Docket  
No. FAA-2011-0562; Directorate Identifier 2011-CE-015-AD.

**(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF  
PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Cessna Aircraft Company Models 310, 320, 340, 401, 402,  
411, 414, and 421 airplanes identified in Cessna Aircraft Company Service Bulletin  
MEB97-4, dated March 24, 1997, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of  
America Code: 11, Placards and Markings.

**(e) Unsafe Condition**

This AD was prompted by an investigation of recent and historical icing-related  
accidents and incidents for the products listed above. We are issuing this AD to prohibit  
flight into known icing conditions as well as increase the approach speed in case of an  
inadvertent encounter with icing. This condition, if not corrected, could result in unusual  
flight characteristics that could lead to loss of control after flight into known icing  
conditions or an inadvertent encounter with icing conditions. Based on the data, an  
example of the unusual flight characteristics seen in many of the accidents is high sink  
speeds that resulted in a hard landing.

**(f) Compliance**

Comply with the actions specified in paragraphs (g) through (i) of this AD, to include all subparagraphs, unless already done.

**(g) Incorporate Operational Limitations**

Within 100 hours time-in-service (TIS) after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD) or within 3 calendar months after [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER] (the effective date of this AD), whichever occurs first, incorporate the operational limitations by accomplishing either paragraph (g)(1) or (g)(2) of this AD, to include all subparagraphs:

(1) Incorporate the limitations identified in Appendix 1 of this AD into your airplane maintenance records and install a copy of the approved supplemental airplane flight manual/airplane flight manual supplement (SAFM/AFMS) in Appendix 1 of this AD in the airplane accessible to the pilot; or

(2) Install the following placards:

(i) Cessna placard part number (P/N) DP0500-13 or a placard that states: "This airplane is prohibited from flight into known icing conditions." If installing the Cessna placard P/N DP0500-13, obtain the placard following Cessna Aircraft Company Service Bulletin MEB97-4, dated March 24, 1997; and

(ii) An additional placard for the applicable airspeed indicator readings listed in paragraph (g)(2)(A) or (g)(2)(B) below, as applicable:

(A) If Airspeed Indicator Reads in MPH. Placard states: "For inadvertent encounters with icing conditions, increase published airspeed on approach at least 17 mph."

(B) If Airspeed Indicator Reads in Knots. Placard states: "For inadvertent encounters with icing conditions, increase published airspeed on approach at least 15 KIAS."

**(h) Placard Installation**

Install the placards on the instrument panel in clear view of the pilot using 1/8-inch black lettering on a white background.

**(i) Pilot Authorization**

In addition to the provisions of 14 CFR §§ 43.3 and 43.7, the actions required by paragraphs (g)(1) and (g)(2) of this AD, to include all subparagraphs, may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the airplane records showing compliance with this AD in accordance with 14 CFR §§ 43.9 (a)(1)-(4) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR §§ 91.417. This authority is not applicable to aircraft being operated under 14 CFR part 119.

**(j) Special Flight Permit**

Special flight permits are permitted with the following limitation: flight into known icing is prohibited.

**(k) 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 the Related Information section 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.

**(l) Related Information**

For more information about this AD, contact Dan Withers, Program Manager, FAA, Wichita ACO, 1801 S. Airport Road, Room 100, Wichita, Kansas 67209; telephone: (316) 946-4137; fax: (316) 946-4107; email: dan.withers@faa.gov.

**(m) 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) Cessna Aircraft Company Service Bulletin MEB97-4, dated March 24, 1997.

(ii) Reserved.

(3) For Cessna Aircraft Company service information identified in this AD, contact Cessna Aircraft Company, Product Support, P.O. Box 7706, Wichita, KS 67277; telephone: (316) 517-5800; fax: (316) 517-7271; email: [customercare@cessna.textron.com](mailto:customercare@cessna.textron.com); Internet: <http://www.cessna.com/>.

(4) You may view this service information at FAA, FAA, Small Airplane Directorate, 901 Locust, Kansas City, MO 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(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>.

**Appendix 1 to Airworthiness Directive 2014-03-03**

**Supplemental Airplane Flight Manual (SAFM)**

**For Airplanes Without an Approved AFM**

**Or**

**Airplane Flight Manual Supplement (AFMS)**

**For Airplanes with an FAA-Approved AFM or POH/AM**

FAA-APPROVED  
SUPPLEMENTAL AIRPLANE FLIGHT MANUAL  
OR  
AIRPLANE FLIGHT MANUAL SUPPLEMENT

FOR:

Performance Limitations

AIRPLANE MAKE AND MODELS:

Cessna 310, 310A through H, E310H, 310I through J, 310J-1, E310J, 310K through R, T310P through T310R, 320, 320-1, 320A through F, 340, 340A, 401, 401A, 401B, 402, 402A, 402B, 411, 411A, 414, 421, 421A, 421B for serial numbers as identified in Airworthiness Directive 2014-03-03.

Registration Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

The information contained in this manual is FAA-approved material, which along with the FAA - approved placards and instrument markings or an FAA-approved flight manual, is applicable to the operation of the airplane in accordance with AD 2014-03-03. This document supplements the FAA-approved material listed above. It adds a limitation prohibiting flight into known icing conditions as well as alters the inadvertent ice encounter procedure in accordance with Airworthiness Directive 2014-03-03.

This document must be carried in the airplane and accessible to the pilot during the airplane's use.

The information contained herein supplements or supersedes the basic manual, placards, and/or other limitations of the basic airplane only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the applicable basic airplane flight manual or pilot's operating manual, placards, and/or other limitations.

- I. Limitations:
  - a. Flight into known icing conditions is prohibited
  - b. For inadvertent icing encounters increase published speed on approach at least 17 mph (15 knots)
- II. Procedures: No Change
- III. Performance:

NOTE:

For inadvertent icing encounters, increase runway length by a factor of 1.5 or more due to the increase in approach speed

- IV. Weight and Balance: No Change

FAA APPROVED



*for* Margaret Kline, Manager  
Aircraft Certification Office  
Federal Aviation Administration  
Wichita, Kansas

Date: 1/31/14

Issued in Kansas City, Missouri, on January 31, 2014.

Earl Lawrence,  
Manager, Small Airplane Directorate,  
Aircraft Certification Service.

**[FR Doc. 2014-02636 Filed 02/28/2014 at 8:45 am; Publication Date: 03/03/2014]**