AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.001(1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Cessna 208 Series Aeroplanes

AD/CESSNA 208/20 Flight into Icing Conditions 7/2006 DM

Applicability: Cessna Models 208 and 208 aeroplanes.

Requirement: 1. Incorporate the following revisions into the aeroplane flight manual.

(a) **Cessna Model 208 aeroplanes and Model 208B aeroplanes:**


(b) **Cessna Model 208 aeroplanes with a Pratt & Whitney of Canada Ltd., PT6A-114A turboprop engine installed (675 SHP) or FAA-approved engine of equivalent horsepower installed, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing.**


(c) **Cessna Model 208 aeroplanes with a Pratt & Whitney of Canada Ltd., PT6A-114 turboprop engine installed (600 SHP) or FAA-approved engine of equivalent horsepower installed, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing.**


(d) **Cessna Model 208B aeroplanes with a Pratt & Whitney of Canada Ltd., PT6A-114A turboprop engine installed (675 SHP) or FAA-approved engine of equivalent horsepower installed, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing.**

c) Cessna Model 208B aeroplanes with a Pratt & Whitney of Canada Ltd., PT6A-114 turboprop engine installed (600 SHP) or FAA-approved engine of equivalent horsepower installed, equipped with airframe de-icing pneumatic boots, that are not of the currently prohibited from flight in known or forecast icing.


2. Incorporate the following changes to the Pilots Operating Handbook (POH) and FAA-approved AFM and to the POH/FAA-approved AFM Supplement S1 “Known Icing Equipment” mandated in Requirement 1 of this AD.

(a) For Cessna Model 208 aeroplanes and Model 208B aeroplanes, all serial numbers, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing:

You are prohibited from continued flight after encountering moderate or greater icing conditions. The aeroplane can dispatch into forecast areas of icing but must exit moderate or greater icing conditions if encountered.

(b) For Cessna Model 208 aeroplanes and Model 208B aeroplanes, all serial numbers, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing:

(i) Insert the text in Appendix 1 of this AD preceding the KINDS OF OPERATION LIMITS paragraph in the LIMITATIONS section of the Cessna Models 208 or 208B Pilot’s Operating Handbook (POH) and FAA-approved Aeroplane Flight Manual (AFM).

(ii) Insert the text in Appendix 2 of this AD in the LIMITATIONS section of the Cessna Models 208 or 208B POH and FAA-approved AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1 at the beginning of the paragraph “REQUIRED EQUIPMENT”.

Note 1: The Owner / Operator holding at least a Private Pilot Licence may do the flight manual changes detailed in Requirement 2(b) of this AD. Make an entry in the aircraft records showing compliance. You may insert a copy of this AD into the appropriate sections of the POH to comply with this action.
(c) For Cessna Model 208 aeroplanes and Model 208B aeroplanes, all serial numbers, equipped with airframe de-icing pneumatic boots that are not currently prohibited from flight in known or forecast icing: Install 3 placards with black letters on a white background. The placards shall be located on the instrument panel in one of the following areas: under the radio stack, immediately above the pilot’s flight instruments, or below the pilot’s vertical speed indicator. Lettering on the placard shall be a minimum height of 1/8-inch.

(i) Placard 1 shall include the text of Appendix 3 of this AD.

(ii) Placard 2 shall include the following text:

“120 KIAS Minimum in Icing Flaps UP except 110 KIAS if Climbing to Exit Icing”.

(iii) Placard 3 shall include the following text: “Disconnect autopilot at first indication of ice accretion”.

Note 2: The Owner / Operator holding at least a Private Pilot Licence may do the flight manual changes detailed in Requirement 2(c) of this AD. Make an entry in the aircraft records showing compliance. You may insert a copy of this AD into the appropriate sections of the POH to comply with this action.

(d) For Cessna Model 208 aeroplanes and Model 208B aeroplanes, all serial numbers, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing:

(i) Insert the text in Appendix 4 of this AD under the “AIRSPEED LIMITATIONS” paragraph in the LIMITATIONS section of the Cessna Models 208 or 208B POH and FAA-approved AFM.

(ii) Replace the text in the KNOWN ICING EQUIPMENT SUPPLEMENT S1 UNDER THE “MINIMUM SPEED IN ICING CONDITIONS” paragraph with the text in Appendix 4.

(iii) Insert the following text in the LIMITATIONS section of the POH/AFM under the “OTHER LIMITATIONS” paragraph and in the LIMITATIONS section of the KNOWN ICING EQUIPMENT SUPPLEMENT S1 under the “AUTOPILOT OPERATIONS IN ICING CONDITIONS” paragraph: “Disconnect autopilot at first indication of ice accretion”.

Note 3: The Owner / Operator holding at least a Private Pilot Licence may do the flight manual changes detailed in Requirement 2(d) of this AD. Make an entry in the aircraft records showing compliance. You may insert a copy of this AD into the appropriate sections of the POH to comply with this action.
(c) For Cessna Model 208 aeroplanes and Model 208B aeroplanes, all serial numbers, equipped with airframe de-icing pneumatic boots, that are not currently prohibited from flight in known or forecast icing:

(i) Replace the text in the PERFORMANCE section of the Cessna Models 208 or 208B POH and FAA-approved AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1 UNDER THE “STALL SPEEDS” paragraph with the text in Appendix 5.

(ii) Replace the “WARNING” text in the LIMITATIONS section of the Cessna Models 208 or 208B POH and FAA-approved AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1 under “ENVIRONMENTAL CONDITIONS” with: “FLIGHT IN THESE CONDITIONS ARE PROHIBITED”.

(iii) Replace the last two sentences in the LIMITATIONS section of the Cessna Models 208 or 208B POH and FAA-approved AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1 under “ENVIRONMENTAL CONDITIONS” with the following text: “Exit strategies should be determined during preflight planning.”

Note 4: The Owner / Operator holding at least a Private Pilot Licence may do the flight manual changes detailed in Requirement 2(e) of this AD. Make an entry in the aircraft records showing compliance. You may insert a copy of this AD into the appropriate sections of the POH to comply with this action.

Appendix 1 - Changes to the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual

Affected Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual (AFM)

Insert the following text at the beginning of the KINDS OF OPERATION LIMITS paragraph in the LIMITATIONS section of the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual (AFM). This may be done by inserting a copy of this AD into the POH/AFM:

“Continued flight after encountering moderate or greater icing conditions is prohibited. One or more of the following defines moderate icing conditions for this aeroplane:

Indicated airspeed in level cruise flight at constant power decreases by 20 knots. Engine torque required to maintain airspeed increases by 400 ft. lbs. Airspeed of 120 KIAS cannot be maintained in level flight. An accretion of 1/4-inch of ice is observed on the wing strut.”
Disregard any mention of approval for flight in icing conditions within the POH/AFM.”

Appendix 2 - Changes to the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual

Affected Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual (AFM)

Insert the following text in the LIMITATIONS section of the POH and FAA-approved AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1, at the beginning of the paragraph “REQUIRED EQUIPMENT”. This may be done by inserting a copy of this AD into the POH/AFM:

“Continued flight after encountering moderate or greater icing conditions is prohibited. One or more of the following defines moderate icing conditions for this aeroplane:

Indicated airspeed in level flight at constant power decreases by 20 knots. Engine torque required to maintain airspeed increases by 400 ft. lbs. Airspeed of 120 KIAS cannot be maintained in level flight. An accretion of 1/4-inch of ice is observed on the wing strut.

Disregard any mention of approval for flight in icing conditions within the POH/AFM.”

Appendix 3 - Cessna Model 208 Aeroplanes and Model 208B Aeroplanes, Equipped With Airframe De-icing Pneumatic Boots, That Are Not Currently Prohibited From Flight in Known or Forecast Icing

Install a placard with black letters on a white background. The placard shall be located on the instrument panel in one of the following areas: Under the radio stack, immediately above the pilot's flight instruments, or below the pilot's vertical speed indicator. Lettering on the placard shall be a minimum 1/8-inch tall and state the following:

“Continued flight after encountering moderate or greater icing conditions is prohibited. One or more of the following defines moderate icing conditions for this aeroplane:

Airspeed in level flight at constant power decreases by 20 KIAS. Engine torque required to maintain airspeed increases by 400 ft. lbs. 120 KIAS cannot be maintained in level flight. Ice accretion of 1/4-inch observed on the wing strut.”

Appendix 4 - Changes to the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual Supplement S1
Affected Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual (AFM) and FAA-Approved Supplement S1

Insert the following text into the LIMITATIONS section under the “AIRSPEED LIMITATIONS” paragraph of the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual (AFM), and Replace the text in the KNOWN ICING EQUIPMENT SUPPLEMENT S1 under the “MINIMUM SPEED IN ICING CONDITIONS” paragraph with the following text. This may be done by inserting a copy of this AD into the POH/AFM:

Minimum airspeed in icing conditions, for all flight phases including approach, except takeoff and landing:

- Flaps up: 120 KIAS
- Flaps 10[deg]: 105 KIAS
- Flaps 20[deg]: 95 KIAS

Exception for flaps up: when climbing to exit icing conditions airspeed can be reduced to 110 KIAS minimum.

Flaps must be extended during all phases (takeoff and landing included) at airspeeds below 110 KIAS, except adhere to published AFM procedures when operating with ground de-icing/anti-icing fluid applied.

**WARNING**

The aural stall warning system does not function properly in all icing conditions and should not be relied upon to provide adequate stall warning when in icing conditions.”

**Note:** These are minimum speeds for operations in icing conditions. Disregard any reference to the original speeds within the POH/AFM.

**Appendix 5 - Changes to the Cessna Models 208 or 208B Pilot's Operating Handbook (POH) and FAA-Approved Aeroplane Flight Manual Supplement S1**

Replace the text in the PERFORMANCE section of the POH/AFM KNOWN ICING EQUIPMENT SUPPLEMENT S1 under the “STALL SPEEDS” paragraph with the following text:

“Ice accumulation on the airframe may result in a 20 KIAS increase in stall speed. Either buffet or aural stall warning should be treated as an imminent stall.”

“WARNING--The aural stall warning system does not function properly in all icing conditions and should not be relied upon to provide adequate stall warning when in icing conditions.”
Cessna 208 Series Aeroplanes

AD/CESSNA 208/20 (continued)

Note 5: FAA AD 2006-06-06 Amdt 39-14514 refers. This AD supersedes FAA AD 2005-07-01, which was referred to in AD/CESSNA 208/17 which has been cancelled.

Compliance: Within 3 days after the effective date of this AD.

This Airworthiness Directive becomes effective on 11 May 2006.

Background: This AD is the result of several accidents/incidents with the affected airplanes during operations in icing conditions, FAA evaluation of Cessna flight test data, and Cessna issuing AFM revisions. These revisions are necessary for safe operation. Consequently, this AD supersedes the actions detailed in AD/CESSNA 208/17 that require incorporation of text in the AFM and requires the insertion of new text in the AFM, and the fabrication and installation of placards. The issuing of this AD is to assure that the pilot has enough information to prevent loss of control of the aeroplane while in-flight during icing conditions.

James Coyne
Delegate of the Civil Aviation Safety Authority

8 May 2006