

ERA24LA094

OPERATIONAL FACTORS

Attachment 5

2023 Southern Airways Express Winter Operations Bulletin

July 30, 2024

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

WINTER OPERATIONS REVIEW

This bulletin will serve as a high-level review of winter operations procedures.

I highly recommend that you go to the website below and watch the free NASA training videos on airframe icing prior to each winter season.

<https://aircrafticing.grc.nasa.gov/>

TAXI PROCEDURES AND PRECAUTIONS

Avoid high power settings when taxiing, especially when leaving the gate area. If aircraft response to power lever movement is slow, allow a few seconds for the aircraft to respond before applying more power.

Taxi slowly and maintain minimum power to avoid blowing slush or snow on other aircraft. Be alert for drifted snow, snow banks, and covered obstructions such as taxiway lights or signs, particularly when an airport has recently reopened following heavy snowfall, or in areas prone to frequent and heavy snowfall.

Nose wheel steering and braking action may both be affected by lack of traction on slick and frozen surfaces. There is more traction at slower speeds. Taxi extremely slowly when approaching turns or stopping areas.

Adjust taxi speed to minimize the need for braking in turns. Applying the brakes occasionally in slushy conditions helps ensure that the brakes are dry and do not freeze after takeoff.

When taxiing on a slick “crosswind” taxiway, a sideslip may develop. Avoid large nosewheel steering inputs in these conditions.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

Surface conditions at gate areas may vary from those on taxiways because of deicing or sanding. Melting ice or snow may cause rapid changes in traction.

Be aware of obscured runway, taxiway or ramp markings. If lead-in lines are obscured, ensure the ground marshaller is available. Be alert to location of snow piles in ramp areas.

Avoid jet blast which could blow snow onto the aircraft where the snow could melt and later refreeze on the aircraft's surface.

PROCEDURES FOR EXITING SEVERE ICING ENVIRONMENT

While severe icing may form at temperatures as cold as - 18°C, increased vigilance is warranted at temperatures around freezing with visible moisture present. If severe icing conditions are encountered, accomplish the following:

Immediately request priority handling from ATC to facilitate a route or an altitude change to exit severe icing conditions in order to avoid extended exposure to flight conditions more severe than those for which the airplane has been certificated.

Maximum continuous power with may be used to exit severe icing.

Avoid abrupt and excessive maneuvering that may exacerbate control difficulties. Do not engage the autopilot.

If the autopilot is engaged, hold the control wheel firmly and disengage the autopilot.

If an unusual roll response or uncommanded roll control movement is observed, reduce the angle of attack.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

Do not extend flaps during extended operation in icing conditions. Operation with flaps extended can result in a reduced wing angle of attack, with the possibility of ice forming on the upper surface further aft on the wing than normal, possibly aft of the protected area.

If the flaps are extended, do not retract them until the airframe is clear of ice.

Report these weather conditions to ATC.

TAXI IN AND PARKING

Apply same precautions described in Taxi Procedures and Precautions above.

Delay retracting of flaps, as slush or water may have frozen in flap wells and can cause damage if flaps are retracted.

In extremely cold temperatures, avoid leaving the aircraft with the parking brake set, if possible, but ensure that chocks are inserted. This reduces the possibility of brakes freezing.

When shutting down on slick ramps, exercise caution. Abrupt feathering of the propeller can cause the aircraft to slide forward, or to one side, even with brakes set and chocks in place.

THINGS TO REMEMBER

The number one priority is maintaining a safe airspeed. Do not wait for airspeed to decay to an unsafe speed prior to applying maximum continuous power. If necessary, advise ATC and initiate a descent to maintain airspeed.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

When in icing conditions the stall warning horn may not activate prior to an aerodynamic stall however airframe buffet will be felt. If in doubt assume any buffet is indication of an impending stall and immediately apply stall recovery techniques. Whenever safe to do so always trade altitude for airspeed.

TAKEOFF PERFORMANCE FOR CONTAMINATED RUNWAYS

For takeoff from a contaminated runway, or from one where braking action is reported as less than good remember the following:

1. Takeoff is not authorized if standing water, slush, or wet snow on the required length or width of the runway is more than 1/8" deep, or if dry snow accumulation is more than 1" deep.
2. Do not depart if the Runway Condition Code (RwyCC) on the runway is reported to be less than
- 3.

Stabilized approaches are essential when landing on contaminated surfaces.

LANDING TECHNIQUE

1. Land at minimum safe touchdown speed.
2. Touchdown at the planned point.
3. Keep nose wheel firmly on the runway.
4. Reduce rollout speed below normal before turning off a slippery runway to assure adequate nose wheel traction.
5. Do not land on the runway if RwyCC is reported as less than 3.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

EXTERIOR INSPECTION

The exterior inspection is one of the most important parts of safe winter operations. The inspection should ensure that all aircraft surfaces are free of frost, snow, or ice. The Captain is encouraged to accomplish this inspection personally. Do not assume that snow will blow off the wings or other aircraft components; a layer of ice could be under the snow. The inspection should include:

1. Remove protective covers
2. Wings, tail, and control surfaces free of frost snow, and ice
3. Fuel tank vents and nozzles are clear
4. Pitot heads, static ports, and sensor pickup points of engine control and flight instruments are clear of ice
5. Engine intakes are clear of ice and snow
6. Area in front of engines is clear of ice
7. Air Conditioning/Heating inlets are clear of ice and snow
8. Radome, nose forward of the windshield and windshields are free of snow and ice
9. Tires must not be frozen to the ramp
10. Brakes must be free of ice
11. ***WHEN IN DOUBT, CALL FOR DEICING***

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

WINTER OPERATIONS PREFLIGHT

The following areas must be free of any contamination for flight:

1. Wings, upper fuselage, control surfaces, and propellers.
2. Engine inlets and oil cooler area.
3. Control surfaces.
4. Gaps between control surface leading edges and the airframe.
5. Forward part of wing flaps.
6. Landing gear doors, actuating mechanisms, and steering components.
7. Pitot tubes, static ports, and vanes.
8. Underside of a cold soaked wing.
9. Drain holes.
10. Between elevator leading edge and horizontal stabilizer.
11. Between rudder and vertical stabilizer.
12. Propellers.
13. Check tires are not frozen to the ramp.
14. Check full movement of all flight controls after completion of snow and ice removal and check gust lock for freedom and proper operation.

NOTE:

The engine intake must be clear of all ice/snow and debris prior to engine start. Do not use glycol to clear the engine intake. Intake may be cleared mechanically or by using forced hot air.

NOTE:

Should deicing be restricted to remote deicing areas, the aircraft may be taxied under its own power to this area before ice/snow is removed.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

The engine intake area must be free of snow and ice before engine start. Only heated air may be used to remove any snow or ice that is not easily removed by hand. Do not use scrapers or other implements to remove contaminants from the engine intake. It is important to ensure that control surface gaps are free of ice or snow. Should any contamination occur in these gaps, there can be significant changes in control forces and control effectiveness.

During flight, crew vigilance is the primary means of determining the aircraft has entered ice accretion conditions. Ice can usually be detected on such surfaces as windshield wipers, prop spinners, wing leading edges and engine inlets.

The airframe is considered to be clear of ice when there is no visible ice on the windshield wipers, prop spinners or any surface of the wing visible from the cockpit.

NOTE: If accumulation of ice on the upper surface of the wing aft of the protected surface (boot) is observed, immediately exit the conditions. Do not hesitate to use Max Continuous Power to exit such conditions.

PROPELLER DEICE OPERATION

During ground operations, use the officially reported temperature to determine if propeller deice is to be used. Activate propeller deice only when ice accretion is noted on any part of the airframe. It is better to be late than early when turning on prop deice when going to colder temperatures during climb. When going to warmer temperatures during descent it is better to be early than late to switch the system off.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

Deicing – Precautions

All reasonable precautions must be taken to minimize the entry of fluid into the engine, intakes, and control surface cavities.

1. Deicing must not be directed into the orifices of pitot heads, static vents, OAT probes, stall vanes, air scoops, air conditioning/heater intake or exhaust ducts, or engine intakes or exhaust ducts
2. Flaps must be in their full up position
3. Do not apply hot deicing fluids on cold windshields or windows.
4. Do not apply fluids to hot brakes.
5. The engine(s) are shutdown during deicing.
6. Both wings, both horizontal stabilizers must receive the same complete treatment.
7. Any traces of deicing fluid on cockpit windows must be removed prior to departure. Pay particular attention to windows fitted with wipers. In addition, any forward area from which fluid may flow back onto windscreens during taxi and takeoff must be clean prior to departure.
8. After prolonged periods of deicing, it is advisable to check for residues of thickened deicing fluid in aerodynamic cover areas and cavities like balance bays and rear spars of the wing.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

Excerpt out GOM Section 8.5 on Icing Procedures:

8.5 Icing Conditions

Regulatory reference: 14CFR: 135.227(a)(1-2) 135.127(b)(1-3)
135.227(c)(1-2) 135.227(d)(4)

8.5.1 Ground Icing Conditions

14CFR: 135.227(a) (1-2)

Even small amounts of snow, ice or frost contamination may cause a potentially dangerous degradation of aircraft performance and unexpected flight characteristics. All Southern Airways pilots must use the methods outlined in this manual to ensure that no aircraft will takeoff with ice or snow adhering to any surface. All Southern Airways pilots will use these methods to ensure that no aircraft will takeoff with frost adhering to any surface unless it has been polished to make it smooth.

8.5.2 Pre-takeoff Contamination Inspection C-208

14CFR: 135.227(b)(1-3) 135.227(c)(1-2) 135.227(e) 135.227(f)

A. This inspection is specific to the C-208 Caravan operated by Southern Airways. Whenever ground icing conditions are in effect, a pre-takeoff contamination check must be accomplished to ensure the aircraft is free of frost, ice or snow on the following surfaces:

1. Windshield
2. Empennage
3. Stabilizing or control surfaces
4. Wing
5. Pitot Static Tubes
6. Propeller
7. Engine Inlet

B. This should occur during the normal preflight walk-around inspection. If any contamination is discovered during the preflight inspections, the PIC must ensure the contamination is properly removed. This check must be accomplished within 5 minutes prior to beginning the takeoff run.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

C. The Pilot in Command is responsible for the following:

1. Ensuring the aircraft is clean of frost, ice or snow "contamination" prior to takeoff.
2. Complying with the pre-takeoff contamination check.
3. Advising the Company as early as possible that there may be a need to remove the contamination.
4. Advising the Director of Operations of any changes that will improve the procedure.

D. The Pilot in Command will accomplish a visual inspection of the wings and horizontal stabilizer 5 minutes prior to takeoff for contamination whenever active icing is occurring. The following procedure will be used to accomplish this inspection from outside the aircraft:

1. The Captain will visually inspect both wings (Outboard of the fuselage) and the Pitot Static Tubes.
2. The Captain will visually inspect both horizontal stabilizers from the open cockpit door.
3. The propeller and engine inlet must be checked from the front of the aircraft with the engine shut down.
4. If at night, the Captain will use a flashlight to inspect required components and surfaces.
5. If the aircraft is not airborne within 5 minutes of the last pre-takeoff contamination check, the above procedure must be repeated.
6. If at any point the Captain is unsure if the wing is clear of contamination, the Captain will perform a tactile check of the wings and control surfaces.
7. If the wing and horizontal stabilizer are contaminated the aircraft will return to gate/hangar and the contamination will be removed.
8. Accepted means for de-icing the aircraft are Type-1 de-ice fluid, heated forced air, placing the aircraft in a heated hangar and use of a soft brush or broom designated specifically for de-icing. Holdover times may not be used when using Type 1 fluid for the purpose of deicing.

Southern Airways Winter Operations Bulletin

Effective: 10/01/2023

9. The PIC may delegate the inspection procedures herein to the SIC if one is assigned to the flight. He/she remains responsible for ensuring the process is properly completed.

If there are any questions regarding ground or in flight icing conditions please contact the Director of Operations, Chief Pilot or Assistant Chief Pilot to discuss.

Fly safe.

Michael Abramowicz