

Tail _____ Date _____ Airport _____

General

- Consider servicing tires/struts before going to cold destination
- If airplane will be cold soaked, consider fueling day of departure
- Min temperature for refueling ops (Jet A): -30°C (-22°F)
- MED may be assisted closed by pulling inboard on upper airstair

Preflight

- Release parking brake (chocks may need to have sand under them)
- *Ensure entire aircraft clean of snow/ice with following emphasis:*
 - Ensure doors, radome, intakes, vents, inlets, exhausts, antennas, fuselage, windows, probes & ports (& forward area clear of ice), and landing gear (w/non damaging mech means or hot air)
 - Conduct wing visual and tactile check if <10°C (50°F) or wing fuel temp ≤0°C (32°F) and: there is visual moisture, water on wing, dewpoint spread ≤3°C (~5.4°F), or its conducive to frost
 - Hands on wing inspection to ensure upper lower wing and leading edge are clear. Remove underwing frost >1/8" (3.2mm) and all leading edge and upper surface frost
 - Ensure eng/APU inlet is free of ice/snow; do not use deicing fluid
 - Ensure eng inlet/fan/cone totally free of ice and fan rotates freely w/closeup vis insp if current/previous icing cond and ≤5°C (41°F)

Airplane Power-up

- Aircraft start-up prohibited to >-40°C/F with extended exposure (power off > 5hrs), <-40°C/F if power off < 5hrs
- If cold soaked < -20°C (-4°F):
 - Warm up batteries by external means
 - After APU start, warm cockpit 15 min before cont norm checks
 - Higher than norm EGT w/lower duct pressure indicates inlet icing **CPAM Fail** (advisory) CAS may display; disregard until warmer cockpit with APU BLEED AIR ON
 - HUD Symbology, OHPTS/DU/TSC operation may be delayed
- If TAT probes contam, sel TAT Probe Heat On after APU Air is oper
- Cycle PARKING BRAKE ~10 times, return to released position

Engine Starting

- Min oil temp for ground start is -40°C/F
- If oil temp <-30°C and last shutdown < 8hrs, warm eng oil >-25°C (OM 03-10-40) or wait 8hrs from last start to avoid rotorbow
- If N1 EVM >.15 IPS at idle immediately after engine start, DO NOT advance throttles; shutdown engine and reinspect for ice
- Oil pressure may exceed limits during start until oil temp rises
- Select COWL ANTI-ICE ON after engine start for icing/freezing fog

Taxi

- Minimum oil temp above idle is +10°C
- CAI is required for taxi and takeoff when SAT ≤10°C (50°F) and visible moisture, precipitation or wet runway is present
- Ice shedding requirements: Ground icing cond ≤0°C(32°F): w/CAI/WAI ON, accel eng sep to ≥60% N₁ for 2 sec, ≤10 min intervals after start. Max time in freezing fog w/CAI ON: 60 min ≥-9°C(16°F); 30 min <-9°C; at limit, idle power only to park and warm/melt to reset time (AFM 03-07-10)
- Leave flaps in retract position & avoid puddles and slush when poss

- Use brakes to warm >100°C to dissipate moisture
- Avoid Thrust Reverser use to prevent FOD and ice/snow ingestion
- Be aware of jet blast with ice/snow and *snowbanks for wingtips*

De-Icing and Anti-Icing Checklist

- * *Parking Brake* _____ *Set*
1. Throttles (Left and Right) _____ *Idle*
 2. Fuel Controls (Left and Right) _____ *As required*
 3. APU _____ *As required*
 4. APU Door _____ *Verify Closed (if APU OFF)*
 5. CAI / WAI _____ *Off*
 6. BLEED AIR (L ENG/R ENG/APU) _____ *OFF*
 7. Packs (Left and Right) _____ *Off*
 8. TROV _____ *Verified Closed*
 9. KA HSD (TSC/Menu/Cabin Power/Page3) _____ *Off*
 10. De-icing and Anti-icing _____ *Complete*
 11. Post De-icing Inspection _____ *Complete*
 12. CABIN PRESSURE CONTROL _____ *Manual*
 13. TROV _____ *Open fully*
 14. BLEED AIR (L ENG/R ENG/APU) _____ *As required*
 15. Packs (Left and Right) _____ *On*
 16. CABIN PRESSURE CONTROL _____ *Deselect Manual*
 17. KA HSD (TSC/Menu/Cabin Power/Page3) _____ *On*
 18. If Engines are OFF _____ *Refer to Engine Start Checklist*
 19. If Engines are ON _____ *Refer Taxi Checklist*
 20. Note applicable Holdover Times prior to Takeoff

Anti-icing / De-Icing Data

Approved SAE Type Fluids: Type I glycol (AMS1424), Type I non-glycol (AMS1424), and Type II, III, and IV glycol (AMS1428)

Precip type/Snow Intensity _____

Fluid Manufacturer/Brand _____

Fluid Type _____ **Final Appl Start Time** _____

Fluid Concentration _____ **+Holdover Time** _____

Fluid LOUT _____ **=Expiration Time** _____

De-Ice / Final Inspection

- Perform hands-on inspection immediately after deice/during anti-ice of leading/trailing edges and upper/lower wing
- Visual inspection of vert/horizontal stabs, elevator, rudder, flaps, spoilers, ailerons, gear, APU/cooling intakes, vents, inlets, exhausts, antennas, fuselage, windows, probes, ports
- A pre-takeoff final inspection should be conducted within 5 min of takeoff and may be conducted from inside. If any doubt of condition of airplane, PIC must conduct hands-on inspection or De-ice again.

Takeoff / Climb

- Takeoff prohibited with frost, ice, snow, or slush adhering to wings, control surfaces, engine inlets, and other critical surfaces
- WAI must be on ≥4 min prior to takeoff, ≤20 min total accumulated time with Type II, III, IV fluid applied (see OM clean proc if >20min)
- WAI must be stabilized at 130±10°F prior to takeoff with icing cond

- Min engine fuel temp for takeoff thrust is +9°C (may drop >0°C with takeoff power set due to cold fuel)
- Contaminated runway takeoff limitations:
 - Rated takeoff thrust and Flaps 20° only
 - Antiskid braking system must be operative
 - Max equivalent water depth: 12.7mm (.5")
 - Equivalent water depth 3-6mm: $\min V_1/V_R = .80$, $\max V_1/V_R = 1.0$
 - Equivalent water depth 6-12.7mm (.2-.5"): $V_1/V_R = 1.0$ only
 - G500 max dry snow depth: 76.2mm (3.0"); G600: 100mm (3.94")
 - Dry/wet runway V_{1MCG} also applies to contaminated runways
 - No credit for clearways
 - For icy runways, both TRs must be operational
- Advance and stabilize Takeoff Power before brake release or when aircraft begins to slide
- **Ice Detected** CAS will display w/icing cond on grnd and be replaced by **Ice Detected** (w/single tone) at 60 kts/400 ft: takeoff is permitted
- Rejected T/O: use max T/R and anti-skid braking—resist releasing brakes even if ride is rough. Use rudder for directional control
- Delay landing gear retraction if practical
- Flight w/flaps extended in icing cond restr to T/O, appr, & landing

Enroute / Cruise

- Operation in forecasted or reported severe icing is prohibited. WAI and CAI must be ON when entry into icing is imminent or immed upon det of ice on wings, winglets, or windshield edges
- Flight into known icing prohibited in other than Normal FCL modes
- Automatic anti-ice operative 400 AGL to FL350
- Min fuel tank temp: -37°C with >5000lbs fuel; -30°C <5000lbs fuel
- If fuel temp $\leq -30^\circ\text{C}$ in flight with <5000lbs fuel, descend to SAT $\geq -60^\circ\text{C}$, maintain $\geq .80M$
- During inflight icing condition, eng vib ok <2.0 with transients >3.0
- WAI ops with single bleed air restricted to single ECS pack ops
- Max altitude with WAI ops with single bleed air source: FL320
- Automatic WAI ops prohibited with single bleed air source
- Single bleed air source WAI ops requires wing temp >100°F prior to entry into icing conditions
- Ice shedding may be assist by incr power lever to MCT >5sec, then previous power setting, repeat as necessary (AFM 03-07-10)
- With WAI on in flight and TAT <0°C, higher eng idle settings will be ~47% N_1 ; resumes to normal with TAT >0°C or landing gear extension
- Rec min flap speed in icing: 0°200kts; 10°180kts; 20°150kts; 39°ref+5
- Min speed with WAI on and flaps up: 200 KCAS
- Extend ops in icing conditions limited to flaps up configuration
- If flight icing conditions >10 min with flaps extended, do not retract flaps <10° until flap leading edge clear of ice (visual inspection of flaps on ground or winglet leading edge in flight)

Landing

- * Consider water system purge before landing. Ref OM Water System Purge Determination Table and COM Water System Purge
- Cold Weather Temperature Compensation (OM 03-10-120)
- After extending landing gear, perform 3 full PARKING BRAKE cycles (**Landing Config-Brake** CAS message will display during application)
- Wet and contaminated landing limitations:
 - Flaps 39° only
 - Max equivalent water depth: 12.7mm (.50")

- G500 max dry snow depth: 76.2mm (3.0"); G600: 100mm (3.94")
- Make firm touchdown, lower nose immed for contaminated rwy
- Do not modulate brake pedal pressure if anti-skid is operating
- Expect possible downwind drift on slippery runways with crosswind
- Perform runway turnoff only after safe and slow taxi speed

Taxi / Parking

- Apply taxi considerations from above taxi section
- Do not retract flaps <10° if significant ice on leading edge of flaps
- Consider Manual Ice Shedding Procedure (AFM 03-07-10)
- Release parking brake once wheel chocks are in place
- Check hydraulic system fluid quantity prior to engine shutdown

Securing Airplane

- Verify TROV closed, internal and external covers and plugs in place
- Ensure chocks in place and parking brake released
- If necessary, service eng and hyd oil ASAP after engine shutdown
- Purge potable water, drain waste tank ASAP after flight/before APU shutdown, as needed. Ref: OM Water Sys Purge Determination Table
- Drain all toilets, If waste tank drained, ensure no residual fluid before drain valve and cap closed—may be left open at <0°C (32°F)
- Ensure galley coffee makers, water boilers/heaters are drained
- Run water taps to ensure lines are empty
- If temps below indicated, remove and store items in warm location: Main & EBHA Batts: -20°C (-4°F), Life Rafts: -30°C (-22°F), Kidde halon fire bottle (-40°C/-4°F), Amerex halon fire bottle: -65°C (-85°F)
- Ensure no residual moisture is present on door seals or surfaces before closing all access doors
- * Consider removing all freezable beverages

Runway Condition Assessment Matrix (RCAM)

Table 3. Operational Runway Condition Assessment Matrix (RCAM) Braking Action Codes and Definitions

RUNWAY CONDITION CODE (RCC)	RUNWAY SURFACE CONDITION DESCRIPTION	PILOT REPORTED BRAKING ACTION	FMS TOLD ⁽¹⁾ Perf Landing SELECTION
6	• Dry	N/A	Dry
5	• Frost • Wet (includes damp and 1/8 inch (3mm) depth or less of water) 1/8 inch (3mm) depth or less of: • Slush • Dry Snow • Wet Snow	Good	Wet
4	-15°C and colder outside air temperature: • Compacted Snow	Good to Medium	Compact Snow
3	• Wet ("Slippery When Wet") Runway • Dry Snow or Wet Snow (any depth) over Compacted Snow Warmer than -15°C outside air temperature: • Compacted Snow Greater than 1/8 inch (3mm) depth of: • Dry Snow • Wet Snow	Medium	Compact Snow Dry Snow or Wet Snow
2	Greater than 1/8 inch (3mm) depth of: • Water • Slush	Medium to Poor	Slush or Standing Water ⁽²⁾
1	• Ice	Poor	Ice
0	• Wet Ice • Slush over Ice • Water over Compacted Snow • Dry Snow or Wet Snow over Ice	Nil	N/A

⁽¹⁾ The FMS TOLD selections are only valid for the "Perf Landing" page.
⁽²⁾ User is required to select "> 0.125" as the runway depth value.



TFS De-Ice Reference Card G600

TYPE I: DE-ICING

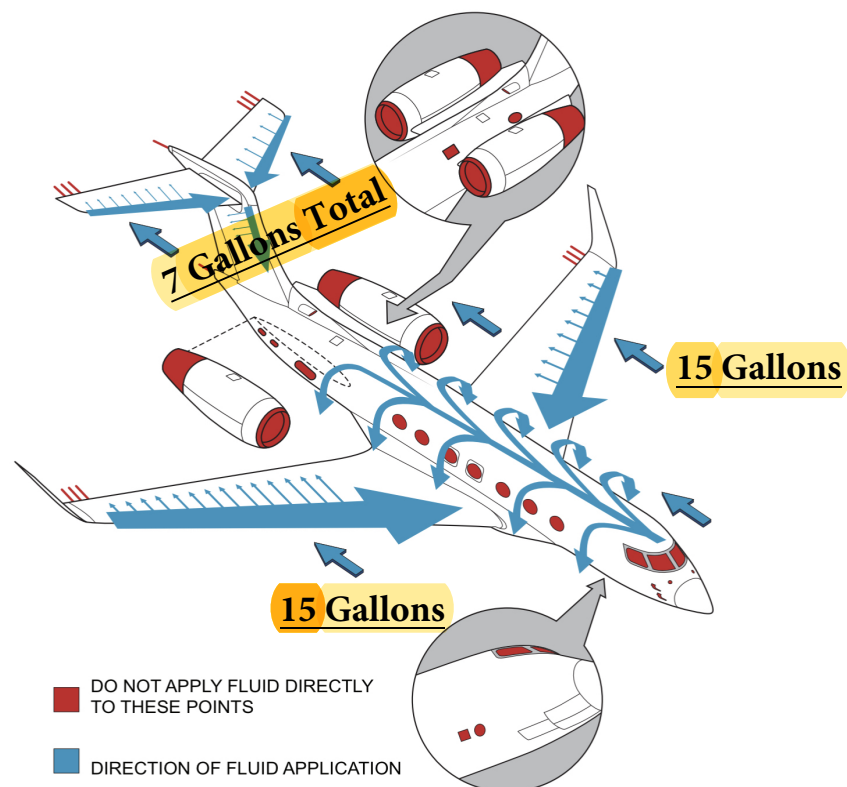
Snow and ice accumulations must be removed from the entire aircraft prior to the application of anti-icing fluid. While applying Type I fluid, please **do not directly spray** the following components:

- Sensors
- Engine and APU inlets/exhausts
- Windscreens and windows
- Doors

TYPE IV: ANTI-ICING

The G600 requires **a minimum of 37 gallons** of Type IV fluid applied to the areas illustrated below to achieve the required fluid thickness for holdover table reference. Start fluid application as depicted.

Figure 1. Deicing and Anti-Icing Fluid Application



This card is intended for reference only. See AFM for complete de-icing procedures.

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Gulfstream Customer Support Updates

January 21, 2024

G450™, G550™, G500™, G600™, G650™, G650ER™, G700™ Aircraft (ATA 38)

The Importance of Water Purging to Prevent Water System Damage in Extremely Cold Weather

Cold weather risks

During cold weather, water within the aircraft's water system may freeze, potentially causing damage. To ensure optimum system operation and prevent any malfunction or damage to the aircraft, water must be properly purged. Always follow the aircraft-specific procedures when purging the water system to avoid potential problems when parking in cold climates.

When is water purging needed?

Water purging will depend on the airport's ambient temperature and the duration the aircraft will be exposed to these temperatures. To determine when water purging is necessary, follow the aircraft-specific guidance provided in the Cabin Operating Manual (COM) and Operating Manual (OM).

Water System Purge Operation

A water system purge drains all the water from the water system and drain lines associated with it. On aircraft equipped with two water tanks, the systems can be purged separately or at the same time. The COM notes that it is a good practice to ensure that a water system purge is done before final descent as many airport facilities do not allow water system purging on the ground in cold weather.

Water System Purge Best Practices

The following water purging best practices aim to effectively remove all water from lines and drains:

- If in flight, begin water purging at least 20 minutes prior to landing.

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- When purging in the air, the tank empties for 15 minutes or until empty.
- Open all sink faucets and drains for 2-3 minutes; if installed, open the bidet/shower faucet also.
- Push and hold the coffee maker fill buttons until the lines are drained.
- Operate the coffee maker until drained.
- Flush each toilet 2 or 3 times.
- Empty ice drawers or close the valve under each drawer.
- DO NOT remove power to the aircraft or galley master before the purge cycle is completed. Doing so may allow water to remain in the system, which may cause damage due to freezing.
- If the purge cycle is interrupted at any time prior to its completion, the cycle must be started again and allowed to run to its end to ensure that no water remains in the system.
- DO NOT turn the water system back on after the purge is completed. If this occurs, the purge function must be run again.

Following the considerations outlined in the COM specific to your aircraft model can prevent malfunctions or damage caused by water freezing in the aircraft's water system.

Contact Gulfstream Customer Support: or +1 912 965 4178 or email: technical.operations@gulfstreammm with any questions or comments.

Sincerely,

Gulfstream Customer Support