Boeing 73x NG/MAX Family

HUB OPERATIONS / AIRCRAFT OPERATING PROCEDURES

COLD WEATHER OPERATIONS — BOEING 737

737-700/800/900 NG and 737 MAX 8/9; 737 Classic requires separate aircraft-specific procedures.

EDITION	EFFECTIVE	OWNER	APPLICATION
1.0 | 2026–27	01 NOV 2026	Hub Operations	All AAVA divisions

FOR FLIGHT SIMULATION USE ONLY | Aircraft-specific FCOM/QRH and performance limitations take precedence.

1.0 GENERAL & AAVA APPLICABILITY

This manual applies to every AAVA flight operated in this aircraft family, regardless of airline branding, callsign, codeshare, heritage, event, charter, passenger or cargo designation. All AAVA flights use the same Hub Operations winter operating framework based on American Airlines-style operational standardization; no actual American Airlines proprietary SOP or regulatory operations-specification approval is implied.

Cold-weather awareness is condition-driven and applies all year, not only November–April. Evaluate icing conditions, frost, snow, freezing precipitation, airport and runway conditions, freezing fuel/clear ice, and delays. Temperature alone does not establish every anti-ice switch requirement.

Hierarchy: applicable aircraft-specific AFM/FCOM/QRH and addon limitations → applicable FAA fluid guidance/aircraft performance data → AAVA flight-operations procedures. If guidance conflicts, use the higher-authority aircraft limitation and notify Hub Operations.

2.0 CLEAN AIRCRAFT CONCEPT & PRE-FLIGHT

Do not begin takeoff with frost, ice, snow or slush on critical surfaces unless a specifically applicable aircraft-approved exception is established. The captain is accountable for the final departure decision. Ground treatment is not a substitute for verification.

Inspect wings (upper and leading-edge surfaces), tail, control surfaces, slats/flaps/fairings, engine inlets, probes, ports, sensors and other aircraft-designated critical areas. Include contamination from overnight exposure, freezing fog, ground spray and cold-soaked fuel.

Transparent ice can be difficult to identify visually. Do not assume an overwing-window or flight-deck view reliably establishes the condition of every surface. Use an authorized ground or tactile inspection when necessary, and do not invent a manufacturer frost exception.

3.0 GROUND DEICING / ANTI-ICING

Deicing removes existing contaminants; anti-icing uses an appropriate fluid to protect previously clean surfaces from renewed contamination for a limited time. When frozen precipitation is falling or expected before takeoff, assess whether anti-icing protection is required in addition to removal.

SAE Type I typically provides shorter protection. Types II, III and IV have distinct aerodynamic acceptance, aircraft-speed eligibility and fluid-specific limits. Do not presume a fluid is suitable simply because it is available; apply aircraft and FAA fluid restrictions.

Deicing only: use when contamination is removed and the aircraft will stay clean to takeoff. One-step deicing/anti-icing: use only where fluid/application conditions produce an applicable valid HOT. Two-step: remove contamination and apply a compatible anti-icing fluid when continued protection is needed. Where degraded fluid exists, use the applicable removal/re-treatment procedure, not a simple top-off.

3.1 Ground crew coordination

1. Confirm aircraft identifier, location, contamination and weather conditions, type of treatment requested, and estimated taxi/departure delay.

2. Coordinate required aircraft flap/slat position, engine/APU and pneumatic configuration, windows/doors, truck clearances, anti-collision lights and safety zone using the exact aircraft-specific procedures.

3. Receive fluid type/brand, mixture/concentration, final application start time and confirmation that treatment and post-treatment checks are complete; record them for the departure decision.

4. Do not taxi until the ground team reports clear personnel/equipment and the crew completes the applicable after-treatment checklist.

4.0 FAA WINTER 2026–2027 HOLDOVER / ALLOWANCE TIMES

The separately distributed FAA Holdover Time Guidelines for Winter 2026–2027 (original issue 11 August 2026) and the companion FAA Ground Deicing Program General Information are the controlling reference for table selection. Hub Operations must check for revised editions. Notice 8900.784 describes this winter’s FAA program.

HOT begins with the start of the FINAL deicing/anti-icing step for a two-step treatment (or the start of the applicable one-step treatment), as specified by the FAA guidance. It is an estimated protection interval, not a certification that the aircraft remains clean.

Select the proper table using SAE fluid type, tested fluid brand, concentration, aircraft-material category where applicable (particularly Type I aluminum versus composites), temperature and precipitation. Follow table notes, lowest operational use temperature and aircraft-speed restrictions. Degree-specific HOT may be available under the FAA program.

Check the current precipitation and temperature before departure. If precipitation intensity/type changes, temperature decreases, or an unexpected delay occurs, reassess the validity of the selected protection. No published HOT means no assumed HOT.

Allowance times for ice pellets/small hail are distinct from normal HOT; they depend on eligible validated fluids and precise FAA conditions. Do not use a visual cabin check to create an unlimited extension. Heavy snow and particular freezing precipitation may have no HOT: follow the current FAA limitation and authorized inspection/re-treatment path.

4.1 Pre-takeoff contamination decision

5. Confirm treatment completion, ground crew clearance and clean-aircraft inspection status.

6. Update airport weather and identify the precise precipitation type/intensity and temperature.

7. Confirm applicable fluid data and that the correct FAA table, notes and HOT/allowance logic remain valid.

8. Perform any required aircraft-specific pre-takeoff check or pre-takeoff contamination check, by authorized person/method and within the applicable time requirement.

9. If critical surfaces cannot be confirmed clean, no permitted protection path exists, or the condition changed beyond current guidance: do not depart; inspect and/or re-treat.

5.0 CONTAMINATED RUNWAY & FLIGHT PLANNING

Before takeoff and landing, review reported runway condition, runway condition codes (RWYCC) when available, precipitation depth/type, braking-action reports, runway length and slope, crosswind, and available aircraft-specific performance calculation. A dry-runway calculation must not be treated as a contaminated-runway result.

Evaluate delays and alternate/diversion planning. Landing distance margins and takeoff power/flap choices are model-specific; “maximum thrust for all contaminated runways” and a universal reverse-thrust reduction speed are not reliable substitute procedures.

A slippery rejected takeoff or landing requires the aircraft-specific braking, directional-control and reverse-thrust technique. Follow the specific FCOM/QRH rather than a blanket rudder/braking speed threshold.

6.0 BOEING 737 ENGINE ANTI-ICE

Use the engine anti-ice system whenever the applicable 737 variant FCOM requires it for ground or flight icing conditions. Assess temperature, visible moisture, snow/slush/standing water and indications of possible icing. A broad “10°C plus visible moisture” reminder is not a complete or universally sufficient switch procedure.

Identify engine type and flight phase (NG versus MAX) before applying takeoff thrust limitations, bleed or anti-ice configuration. Engine anti-ice operation can change thrust and performance. Review checklist indications and restrictions for the actual model.

Under prolonged taxi or low-thrust flight in icing, engine ice-shedding run-ups may be required. Their trigger, frequency, N1 and duration are not interchangeable between CFM56-equipped NG and LEAP-equipped MAX; perform ONLY the exact model-specific FCOM/QRH run-up and clearance procedure. Do not treat legacy “70–80% N1 every 15 minutes” or “50% N1 for five seconds” as fleetwide requirements.

7.0 BOEING 737 WING ANTI-ICE / FLIGHT IN ICING

Identify wing icing conditions and operate wing anti-ice as directed by the actual NG/MAX FCOM. Some procedures respond to observed icing and some require preventive use; do not reduce system activation to “wait for visible ice” or apply a generic below −40°C SAT exception without flight-phase/aircraft context.

Monitor ice accretion, cockpit/airframe indications, engine vibration and aircraft performance. Evaluate severe icing and abnormal handling using appropriate non-normal guidance; continued operation in conditions outside aircraft limits is not permitted under the simulation standard.

Review icing impacts on minimum speeds, climb/approach margins and fuel/performance calculations when specified by aircraft documentation.

8.0 BOEING 737 DEICING CONFIGURATION, ARRIVAL & POST-LANDING

The historic 737 material identified flap-area ice as a hazard during flap retraction and used flap-15 positioning for certain treatments. Keep the requirement to identify and clear contamination, but use the exact NG/MAX FCOM and ground deicing instructions to select flap position and timing; flap 15 is not a blanket setting for all deicing.

Configure engines, APU, packs, bleeds, flight controls, flaps and anti-ice for spraying using the actual aircraft checklist and ground provider instructions. Do not introduce a crossbleed engine start or control-column cycling merely because it appeared in an earlier generic checklist.

For descent, approach and arrival, apply the model-specific engine/wing anti-ice requirements and contaminated-runway performance. After landing in freezing conditions, inspect for ice in flap tracks/fairings and follow the actual manufacturer flap retraction limitation; no unqualified “keep flaps at 15°” rule is issued in this edition.

9.0 SIMULATION & OPERATING LIMITATIONS

For simulators that model deicing, icing or runway braking, pilots must use the installed aircraft procedures and simulation limitations. If the platform does not model ground-fluid protection, simulate the realistic decision and paperwork sequence; a logged HOT does not create actual simulator protection.

This manual provides AAVA operational expectations, not real-world dispatch authority or an alternative to manufacturer-approved guidance. Do not apply a procedure from one aircraft engine or generation to another without verification.

10.0 REFERENCE CONTROL

FAA Holdover Time Guidelines, Winter 2026–2027, original issue 11 August 2026 (supplied separately; check for updates):
https://www.faa.gov/other_visit/aviation_industry/airline_operators/airline_safety/deicing/

FAA Notice 8900.784, 3 August 2026:
https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1045444

FAA AC 120-60B, Ground Deicing and Anti-icing Program:
https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/23199

Aircraft-specific Boeing FCOM/QRH and applicable simulator developer procedures (model/engine dependent).

AAVA Cold Weather Operations baseline and Hub Operations Deice/Anti-Ice Procedure / Winter Operations Reference Card. Standards apply across all AAVA operating divisions.

11.0 CHANGE RECORD

2026–2027 edition: separated general FAA ground-icing and contaminated-runway requirements from aircraft-specific cockpit settings; removed unsupported fleetwide N1, flap and thrust numbers; added FAA 2026–2027 document control and explicit inspection/re-treatment decision process; preserved aircraft-specific operational topics.

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