

WINTER OPS

5 STEPS :

1. Contamination check
2. De/Anti Icing procedure
3. Post treatment check
4. Pre T/O check
5. Pre T/O contamination check

1. Contamination Check

Outside conditions:

- Visible Moisture (clouds, visibility below 1600m, rain, snow...)
- TWY / RWY contaminated (ice, slush, standing water...)

OAT Below 10°

-> Icing condition exists

OAT Below 3°

-> Freezing conditions exists

- Probe heat ON

- Use "Before taxi freezing conditions" checklist

Prepare OPT

Check TALPA Matrix

Check x-wind limit for corresponding BA and RWY width

Aircraft condition: Not contaminated

Happy days, have fun.



Aircraft condition: Contaminated

(checked during walkaround)

NEI / CSFF *

- frost on upper wing less than 5mm
- extent of frost similar on both wings
- and remain within black line limits
- OAT above 4°, no visible moisture

DEICING NOT REQUIRED



Other types of contaminations

- Snow / Frost / Rime ice / Clear ice
- Fan blade icing ...
- Freezing fog (vis < 1000m & OAT < 0°)

DEICING REQUIRED

* Factors leading to NEI / CSFF :

4000kgs of cold fuel remaining
drizzle, rain or moisture in low OAT

2. De Icing Procedure

| | |
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| INFO | <u>De / Anti icing fluids</u> <ul style="list-style-type: none">- Type I : De Icing , Short Holdover , Orange- Type II : Anti Icing , Long Holdover , Translucent- Type III : not used , suitable for turboprops- Type IV : Anti Icing , Longer Holdover , Green |
| | <u>One / Two step</u> <ul style="list-style-type: none">- One step is used to remove contamination and when no further icing is forecasted.- Two step is used to remove thick contamination and/or when icing conditions are forecasted prior takeoff. First step of hot water / diluted deicing fluid followed second step of less diluted anti icing fluid. |

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| PROCEDURE | <ul style="list-style-type: none">- complete De/Anti Icing Request form- request tactile check if clear ice is suspected- establish if special de icing procedure is needed (local area, fan blade ...)- use lowest of OAT or wing skin temp to assess the mix of de/anti icing fluid- if the runway has been chemically treated, 2 step deicing is recommended- coordinate start of deicing to maximise HOT, check for delays (CTOT ...) |
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Before Taxi Freezing Conditions Checklist

Main differences:

- PF accomplishes procedure / F/O completes checklist (Read & Do)
- Engine anti ice ON
- Wing anti ice ON (unless wing is protected by type II/IV or no bleed T/O is planned)
- Flaps Up-40-Up

When ready for taxi choose one:

| Deicing with engine running required | Deicing not required or completed prior engine start |
|---|---|
| <ul style="list-style-type: none">- Clip winter ops handydandy to the yoke- Capt clips DAR to his yoke- Taxi to remote stand & deice- Complete "Deicing with engine running" | <ul style="list-style-type: none">- Clip winter ops handydandy to the yoke- Taxi to holding point- Complete checklist |

Both Checklists: (F/O) Challenge & Response -> (CPT) Action & Repeat Response

Special considerations when taxiing:

- Delay config check if flaps are kept up during taxi
- Max 5kt on slippery or contaminated taxiways, avoid jet blast from other A/C
- Static run up recommended every 30 min

3. Post treatment check

- Obtain the de-icing code and record it in the ATL.
- HOT must be calculated by the Captain.
- No HOT applies to removal of local area contamination.
- Complete the DAR form with HOT and the de-ice service providers name if remote de-icing
- Clip the DAR form to the control column as a reminder for the pre-takeoff check.

4. Pre T/O check

- Complete the Pre-takeoff check to validate the Holdover Time.
- The DAR-01 form is removed from the control column and returned in the flight envelope.
- If any doubt exists regarding the effectiveness of the anti-ice treatment or the HOT has expired:
-> A Pre-takeoff Contamination check must be completed.

5. Pre T/O contamination check

- Complete a visual inspection of the critical surfaces from within the cabin as described in OM A 8.2.4.5.6.5 and as described in Winter ops chapt 5.
- If a re-treatment is necessary, any residue from the previous treatment should be removed with a hot mixed fluid followed by a completely new treatment.

Cold temperature corrections

- When OAT is at or below 0°C apply cold temperature altitude corrections for MFRA, MSA and also to SID stop altitudes if below the corrected MSA.
- ATC must be advised and a clearance must have been received before climbing or descending to a Cold Temperature Corrected Altitude
- Cold Temperature Altitude Corrections must be applied to DH/DA or MDH/MDA and step-down fixes inside and including the final approach fix (FAF) and missed approach altitudes.
- Do not correct altitudes from the FAF to the MAPT in case of an APV approach. Observe minimum procedure temperature as stated on the chart.

Other considerations:

- Use of wing anti-ice above FL350 may cause bleed tripoff & cabin depressurisation
- Holding in icing conditions with flaps extended is prohibited
- Wing anti ice is usually not required at SAT below -40°
- Jet A1 freezing point : -47°
- Do not retract the flaps unless they are free of contaminants

Run Up: (30s @ 70% N1 , Before T/O or every 30 min during taxi)

- PF "Timing"
- PF advances thrust levers to 40% N1
- PM "Stabilised"
- PF advances thrust levers to 70% N1
- PM observes no excessive vibrations/readings and calls "Stabilised"
- PF releases brakes and pushes TOGA "Set T/O thrust"