SAFETY BULLETIN

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Winter Conditions at Finland Airports: Requirements for pilots and air operators

Please note: this bulletin supersedes 25SAB02 and all earlier versions of Winter Conditions at Northern Finland Airports.

INTRODUCTION

When pilots think of winter operations, the first things that come to mind are cold temperatures, high winds, frost, snow, ice, and additional time required. There are many other factors to consider and winter flying can create challenges for flight operators. Though these conditions are not always hazardous, they can be if not planned for and managed properly.

Safe winter operations normally require special procedures by airline maintenance, engineering, ground crew, flight crew, and de-icing personnel. In Finland, FINAVIA and TRAFICOM publish an annual Safety Bulletin on winter conditions. The attached Bulletin focuses on operations in northern Finland, but the content is relevant to other locations subject to similar weather. It provides excellent guidance for both flight crews and operators.

ATTACHMENTS

Six (6) page Bulletin,
Winter Conditions at Finland Airports: requirements for pilots and air operators, 2026-2027

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Winter conditions at Finnish airports – requirements for pilots and air operators

Winter conditions in Finland can be very challenging from October to April. Airport operating conditions may differ significantly from those encountered in Central and Southern Europe. Prolonged darkness, twilight or low ambient light, low sun angles, blowing snow and reduced visual contrast may affect situational awareness throughout the winter season.

For safety reasons, pilots and air operators with limited experience from difficult winter conditions in northern Europe should read these instructions carefully.

Airport conditions are reported in SNOWTAM messages

Runways, taxiways and aprons may be partially or entirely covered by snow or ice while remaining fully operational and compliant with applicable safety requirements. Visual appearance alone should not be used as an indication of runway usability.

Flight crews should rely on official aeronautical information, including SNOWTAMs, ATIS broadcasts and ATS information.

Airport conditions are reported via SNOWTAM messages. Pilots are required to check the content and effect of SNOWTAMs before operating to airports in Finland. It is important to understand the effect of reported conditions on actual flight operations. Air carriers must ensure that their pilots receive sufficient SNOWTAM training.

Simplified SNOWTAM decoding instructions are available at https://www.ais.fi/bulletins/snowtam.pdf.

Some of the most important issues to consider in the SNOWTAM message are listed below.

- Reported RWYCC and contaminant type, coverage and depth are based upon runway inspector's overall assessment of the surface conditions. Measurements and sensor data may supplement visual observations.
  Runway conditions reporting is based on Global Reporting Format (GRF). Runway Condition Assessment Matrix (RCAM) is used in order to assign the RWYCC and for runway surface description.

- When assessing the contamination and friction level the runway inspector can either downgrade or upgrade the reported RWYCC value compared to the contaminant specific value in the RCAM table in accordance with the GRF regulation.

- In SNOWTAM messages, the conditions are reported for each third of the runway, beginning from the smaller runway designator. In ATIS broadcasts or in the landing instructions provided by the ATS unit, however, they are given in the direction of landing.

- SNOWTAM and ATIS messages may contain information regarding the take-off significant contaminant (TOSC) on the runway. The usage of contaminant reported as take-off significant must be carefully considered and based on the operator's own procedures regarding its operational utilization.

- When determining TOSC, the reporting system collects all contaminants reported on the runway and divides them into thin (none drag causing) and thick (drag causing) contaminants in respect to airplane performance. The system reports TOSC as an additional information, in compliance with an interpretation of the aircraft performance requirements specified in regulation CS-25 AMC 1591.

There are no specially prepared winter runway (SPWR) operations in Finland.
Sand is not used in Finland to improve surface friction on runways.

Up-to-date information on runway conditions is available from ATIS or the ATS unit. Flight crews are encouraged to request a new runway condition inspection whenever the actual conditions appear to differ from the SNOWTAM or ATIS information, or when conditions change rapidly. Airport maintenance actions can also be requested as necessary. The aim is to time runway maintenance according to the needs of air traffic. The ATS unit and airport maintenance are there at the pilots' service.

En-route and initial approach

Runway conditions and prevailing weather may vary. Whenever necessary, ask for the latest information directly from the destination airport in good time. The information is available during opening hours which can vary daily. Check the opening hours from https://www.ais.fi/en NOTAMs. Up-to-date information on runway conditions is available on ATS frequency during flight.

Operators should adopt a proactive approach to changing conditions. Winter conditions can change quickly, and runway friction may deteriorate within a short time, for example due to snowfall, drizzle or temperature variations. Operators should be prepared for deteriorating runway conditions at both the destination and the alternate aerodromes.

It is recommended to calculate performance data in advance also for the worst possible RWYCC, so that in-flight decision-making is not based solely on the situation at the time of departure, as conditions at landing time may be significantly different. Decision to divert to an alternate aerodrome should be made in good time, before operating margins have narrowed.

Winter weather systems may affect several airports simultaneously and local conditions may change rapidly. Operators should consider that distances between suitable alternate airports may be significant. Particular attention should be paid to operations at airports with limited opening hours or where services are provided only upon prior arrangement.

Airports may provide AFIS, radar service or procedural ATC service. The effect of the service level on pilot responsibilities must be noted.

When providing ATS surveillance services, the controller will issue clearances such that prescribed obstacle clearance will always exist. The controller takes the effect of temperature into account whenever the temperature at the airfield is below 0 °C.
Such a clearance will include correction for low temperature effect when the required correction exceeds 20% of the prescribed minimum obstacle clearance.

If correction for low temperature effect is taken into account by the controller, given clearance includes "TEMPERATURE CORRECTED BY ATC". The temperature limit for when temperature correction is required may vary from airport to airport.

At AFIS airports and airports with procedural ATC, pilots are responsible for calculating any temperature corrections themselves. It is particularly important to take account of temperature corrections in cold winter conditions.

Aerodrome Flight Information Service (AFIS)

Some Finnish airports are not providing air traffic control service but only have an AFIS unit that provides Aerodrome Flight Information Services.

The AFIS does not provide ATC separation or clearances. It can forward route clearances received from the ACC to the aircraft. It reports any known traffic, and the pilot-in-command is responsible for maintaining safe distance to

other traffic based on these reports and in compliance with the Rules of the Air. Pilots are also required to report their own intentions. The AFIS unit is responsible for the use of any necessary aerodrome equipment, and for controlling vehicle traffic.

Operational procedures for AFIS aerodromes are described in section GEN 3.3, paragraph 3.1 of the Aeronautical Information Publication, AIP Finland. Please read them before operating to any AFIS aerodrome.

Approach and landing

Reported runway condition codes (RWYCC) provide valuable information for operational decision-making. However, flight crews and operators should always assess runway conditions together with other operational factors, such as:

- Crosswind or tailwind component
- Aircraft weight
- Runway width and length available
- Temperature, visibility and weather conditions
- Time pressure

Conditions that are individually acceptable may together form an unacceptable overall situation. Risks should be assessed cumulatively rather than considering each factor separately.

Operators are reminded to apply their company-specific procedures and limitations when assessing operational acceptability.

Snow-covered terrain may reduce visual contrast and make it more difficult to accurately assess height, distance and aircraft position relative to the runway environment.
Blowing snow may occasionally reduce visibility rapidly and create localized areas of significantly deteriorated visual conditions.
Flight crews should be prepared for these types of visual illusions.

To minimize the risk of runway excursion, it is essential to make sure that the approach is stabilized. Special attention is required when approaching a runway with Runway Condition Code RWYCC = 3 or lower.

The decision on making a go-around must be made early in case of any signs of an unstabilized approach, for example whenever visual cues become unreliable.

In some cases (available) runway width may be less than in AIP published nominal width.
It is also important to note that the touchdown zone markings may not be fully visible.

When there are reported deposits (e.g. snow and ice) on the runway, friction may vary significantly along the runway length and, in some wind conditions, also between the left and right side of the runway centerline.

As a precision approach (ILS) is typically available only to one end of the runway, low cloud base or low visibility may mean that a tailwind landing is the only practicable option. This should be taken into account already at the flight planning stage, as a tailwind degrades landing performance and, if combined with a reduced friction on the runway, may significantly reduce safety margins.

AIREP

Pilot reports (AIREP) are of key importance in winter conditions. They provide critical and up-to-date information for following aircraft and support the airport's assessment of the runway condition. Flight crews are encouraged to report their observations actively, especially if conditions differ from the information provided.

The pilots' possible assessments of the runway condition must be reported according to Runway Condition Assessment Matrix scale good – less than poor.

Taxiways and apron

Conditions on taxiways and at the apron may differ from those on the runway, usually in the lower direction. Taxiway and apron conditions are only reported when conditions are assessed slippery, poor or less than poor. Under such conditions utmost caution shall be taken when manoeuvring the aircraft.

Expect winter conditions on taxiways and aprons as standard. Early anticipation and proactive planning are essential.

Some aerodrome signage and markings can be covered with ice and snow. Keep available and utilize current onboard aerodrome maps for further reference while maneuvering on taxiways and apron.

At some airports, the apron or aircraft stands may be on sloping ground, which means that parking brakes must be used. Check the need for using brakes from airport ground services.

It is important to note that freezing temperatures may affect brakes and other aircraft devices.

Passengers must also be warned that the apron may be slippery.

De-icing and anti-icing

It is crucial that the aeroplane must not take off if the pilot-in-command has not been able to assess whether the aeroplane is free of frost, ice and snow. This requirement can also be met by having the aeroplane checked by personnel with relevant training and ratings.

In winter, operators must identify the possible need for aircraft de-icing on the ground, make sure that de-icing services are available, and verify that their aircrews are appropriately trained also for de-icing operations on the ground.

Under challenging winter conditions, proper de-icing is an essential element of flight safety. When there is reason to suspect that frost, ice or snow is adhering to aircraft surfaces, the need for de-icing must be determined. This must be done from a position offering good visibility of the aircraft surfaces. Once the need for de-icing has been determined, the pilot-in-command is responsible for deciding whether de-icing treatment is necessary.

The ‘Clean Aircraft Concept’ ensures safe flight operations. In all operations, the pilot-in-command is responsible for assessing whether operation is safe. The aircrew and ground or maintenance personnel must still report anything that may affect flight safety. Open communication is vital, and all matters affecting airworthiness must be communicated to the pilot-in-command in a clear and brief manner.

Any contamination observed before a flight can be removed by applying a hot de-icing fluid that will melt and flush off ice and snow deposits.

Moreover, anti-icing fluid may be sprayed on critical surfaces before take-off to prevent new formations of frost and ice. The pilot-in-command must check the hold-over times of de-icing fluids from the tables available.

It is important to ensure ‘Clean Aircraft Concept’ also during departure taxing and take off. Following de-icing or anti-icing treatment, changing precipitation, freezing fog or temperature variations may result in recontamination of critical aircraft surfaces.

The time needed for aircraft de-icing and anti-icing varies depending on the conditions and the equipment in use (typically 15-30 minutes). Cooperation and coordination with ground handling service provider regarding the time needed for de-icing and anti-icing is important to maintain the Estimated Off-Block Time (EOBT) according to the flight plan. The airline is responsible for the validity of the flight plan.

Ice accumulation in engines during ground operations

Ground operations require attention to ice accumulation in engines. Occurrences have been observed where ice accumulated in the engine inlet and on the compressor blades during a very short taxi, and uneven ice shedding caused engine vibration.

The phenomenon is not limited to temperatures near zero: according to operators' observations, ice has accumulated also at approximately -20°C when sufficient moisture was present in the air. Freezing fog (FZFG) is generally known as the most challenging condition, but moisture may also be present in cold conditions, for example in areas where snowmaking is actively carried out.

Operators must assess the need for an ice shedding procedure as part of their winter operations procedures and ensure that crews are familiar with the conditions for its use and how it is carried out. Procedures must be based on the manufacturer's instructions.

Cabin pressurization during ground heating

Ground heating of the aircraft cabin in winter, using either the aircraft’s own systems or external equipment, may create an undetected cabin pressure differential. For example, when

opening the door of the aircraft, this differential may cause the door to blow open with excessive force, creating a serious personnel safety and structural risk. Ensure personnel are briefed and trained to follow the operator's and the aircraft manufacturer's procedures for cabin heating.

Winter clothes

Cold weather may adversely affect human performance and operational decision-making.

Extended periods outdoors during inspections, fueling supervision, technical troubleshooting or other operational activities may lead to cold stress, reduced concentration and decreased manual dexterity.

Operators should ensure that flight crews carry suitable winter clothing and footwear appropriate for local weather conditions. Special attention should be paid to slip hazards on snow- and ice-covered surfaces.

Metal parts of the aircraft, especially landing gear struts and inner parts of engines, may cause severe frostbite if touched without gloves. Suitable gloves should be kept at hand and worn during all outdoor tasks.

Weather services supporting operations in winter conditions

Finnish Meteorological Institute (FMI) provides aeronautical meteorological services in Finland. Nordic Significant Weather Chart including for example icing forecast can be found from https://ilmailusaa.fi which is the official service for aeronautical meteorological services.

As additional services FMI provides i.a. EFHK Weather Display for Helsinki Airport and ILMARI AWOSVIEW for other airport to view real-time observations. Airport Forecast is produced to Helsinki Airport. It is a specialized forecast to support interpreting weather conditions.
FMI has also developed Winter Weather forecast products related to icing and de-icing to users across Europe. Products are SWIM compliant and can be found via: https://eur-registry.swim.aero/service-descriptions.

Further information

Further information on winter operations, seasonal snow plan for winter season and runway condition assessment (GRF) are available from:

- Aeronautical information circular (AIC A) Seasonal snow plan for the winter season and eAIP, AD 1.2 at https://www.ais.fi/eaip/

For aeronautical meteorological services, contact the Finnish Meteorological Institute at: ilmailu@fmi.fi

Have a safe flying season and welcome to airports in Finland!

This information bulletin was drafted jointly by Finavia Corporation, Lappeenranta, Enontekiö, Mikkeli and Seinäjoki airports, Finnair, Norra, Scanwings, Fly7 Finland, Fintraffic ANS, Finnish Meteorological Institute, Airpro, Aviator, Finnish Pilots' Association and the Finnish Transport and Communications Agency (Traficom), which is the civil aviation authority of Finland.