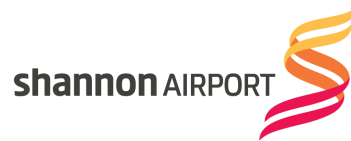


Aviation Preparations for Winter 2023 Adverse Weather



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PEOPLE, ENVIRONMENT AND DEVELOPMENT FOR A CHANGING LAND



Aviation Preparations for Summer Adverse Weather

Winter weather traditionally brings challenges (threats, in risk management terms) for European aviation, whether in terms of operational impact on aviation activities, on the workforce and on passengers. With a changing climate, such challenges are becoming more frequent as well as arising in areas and airports which have not previously been exposed to such weather for prolonged periods of time.

The below briefing sets out potential challenges which European aviation may face from adverse weather during winter 2023. It also sets out potential response options to consider to reduce the impacts. It should be noted that the list is not exhaustive and impacts will be dependent on geographical location, prevailing conditions the specific outlook for the period in question. Therefore, industry organisations should conduct their own detailed impact assessments in accordance with applicable regulations.

Challenges

Weather conditions	Impact
Snow/ Thundersnow	<p>Disturbance to flight and airfield operations, delays resulting from ground stops or holding arrival aircraft. Cancelled or diverted flights.</p> <p>Can cause issues for Tower Visual Control Rooms as a result of reduced visibility of runway, taxiway and apron operations leading to reduced arrival and departure capacity.</p> <p>Staffing issues due to difficulties for staff travelling to the airport/tower/ACC.</p> <p>Difficulties and disruption in aircraft refuelling.</p> <p>At aerodromes that utilise remote ATS/remote MET services there are/may be additional impacts to consider e.g. impacts to cameras, ability to accurately assess weather remotely.</p> <p>For any aerodromes where AUTO METARs are issued users need to be extra cautious regarding the accuracy of AUTOs during adverse conditions given the limitations of sensors</p>
Ice	<p>Disturbance to flight and airfield operations, delays resulting from aircraft de-icing and runway anti-icing.</p> <p>Difficulties and disruption in aircraft refuelling.</p> <p>Risk of contaminated run-off water from de-icing getting into local water courses where there is flooding.</p>

Challenges

Weather conditions	Impact
<p>Heavy rain/down-burst/prolonged and extreme rain</p>	<p>Flooding, increased taxi times, risk of hydroplaning on take-off or landing; risk of runway excursions; delays due to active water removal from surfaces. Risk of contaminated run-off water getting into local water courses where there is flooding.</p> <p>Can cause issues for Tower Visual Control Rooms as a result of reduced visibility of runway, taxiway and apron operations leading to reduced arrival and departure capacity.</p> <p>Difficulties and disruption in aircraft refuelling.</p>
<p>Strong winds/gales</p>	<p>Dangerous working conditions, disruption to flight and airfield operations, impact airport ATM equipment, aircraft and GSE. Foreign Object Debris blown onto apron/taxiway/runway.</p> <p>Difficulties and disruption in aircraft refuelling.</p>
<p>Low visibility</p>	<p>Disruption to flight operations.</p> <p>Can cause issues for Tower Visual Control Rooms as a result of reduced visibility of runway, taxiway and apron operations leading to reduced arrival and departure capacity.</p>
<p>Any of the above in adjacent areas</p>	<p>Increased complexity of air traffic often leading to diversions. Greater numbers of aircraft on the ground due to weather preventing departure.</p>
<p>Hail</p>	<p>Accumulation of hail on apron/taxiway/runway. Icing.</p> <p>Damage to aircraft/navigation equipment/ground support equipment.</p> <p>Difficulties and disruption in aircraft refuelling.</p>

Possible Actions

Weather conditions	Possible actions
<p>Snow, thundersnow, hail Heavy rain/down-burst/prolonged and extreme rain</p>	<p>Snow-clearing. Review snow plans and carry out pre-season snow clearance exercise. Identify snow-dump areas, staffing resilience, necessary staffing uplift and resources required (catering, accommodation...).</p> <p>Cleaning of areas around stands, underfloor heating in boarding bridges to prevent slips. Runway checks and issuance of RCR(s).</p> <p>Consideration of what MET is currently available and how far in advance; organisations can work with their Met Service Provider to discuss additional requirements. A central location for MET information and airport specific products may be beneficial to allow a consistent weather briefing and approach across the whole airport.</p> <p>Monitoring of areas that may get flooded could/should be undertaken. Some aerodromes are more prone to flooding than others and should/could investigate what conditions are most likely to cause flooding and ensure that their procedures specifically monitor the likelihood of these conditions developing either through the use of existing weather products or by the development of new products if these would add value.</p> <p>Creation of alternative paths where flooding has hindered vehicle movement.</p> <p>Mandatory speed reductions and alternative routes for airside vehicles.</p> <p>Infrastructure improvements to increase removal flow of rainwater.</p> <p>More use of (or installation of) Surface Movement Radar.</p> <p>Flashing lights on apron lampposts to warn of imminent ground stop.</p> <p>Terminals will require increase in staff and supplies to deal with an increase in passengers due to any delays/cancellations/diversions.</p> <p>Airports and airlines can work together to consider passenger welfare, onward transportation, alternative bookings and handling arrangements for diversion alternates.</p> <p>In all cases, planning ahead as far as possible to apply early any capacity reductions to ensure stability and effectiveness. Organisations may wish to consider working with their Met Service Provider to discuss any additional requirements e.g. use of probabilistic forecasts at an earlier stage.</p>
<p>Ice, hail</p>	<p>De-icing of aircraft and runways.</p> <p>Airline pre-planning for de-icing delays/possible cancellations to aid smooth flow. Organisations may wish to discuss with their Met Service provider the availability of specialist icing forecasts.</p> <p>Ensure latest forecasts for temperature and precipitation are available to aid with optimum laying during quieter traffic periods.</p> <p>Airport runway de-icing plans and potential exercise ahead of season.</p>

Possible Actions

Weather conditions	Possible actions
Strong winds/gales	<p>Request to secure lighter planes, and all ground handling equipment.</p> <p>Laying ballast in Unit Load Devices;</p> <p>Request for monitoring operation of loaders, jet bridges and canopied stairs (according to its physical limit to the wind).</p> <p>Flashing lights on apron lampposts to warn of imminent ground stop.</p>
Low visibility	<p>Notice issued by the Airport Operations Service, with the implementation of specific operating procedures for this type of operation.</p> <p>More use of (or installation of) Surface Movement Radar. Organisations may wish to discuss with their Met Service provider the availability of specialist LVP forecasts.</p> <p>Good understanding of fog triggers and what can aid clearance.</p>
Any of the above	<p>Coordination with the airport function to mitigate the impact on the network and airport stakeholders.</p> <p>In all cases, planning ahead as far as possible, making use of appropriate MET information to apply early any capacity reductions to ensure stability and effectiveness.</p> <p>Consider pre-season to refresh winter weather training and winter hazards. i.e. what the hazards are, impacts on the airport/airlines/ANSP, key MET triggers to watch out for or typical synoptic set ups for the local area. Most importantly where to find the relevant MET forecasts and information.</p> <p>Usage of the deliverables of the SMART Weather Task Force, especially the possibility to implement in cooperation with NMOC a specific ATFM ARR Procedure for Weather of short duration with impact on long sector flights.</p> <ul style="list-style-type: none"> - https://www.eurocontrol.int/publication/check-list-fmps-and-nmoc-staff - https://www.eurocontrol.int/user-group/smart-weather-task-force.

At an overall level, the importance of risk identification and risk assessment to properly inform contingency planning is key, involving all relevant partners across the airport as well as beyond (e.g. wider transport infrastructure, tourism sector...) and acting proactively rather than reactively can reduce impacts. This should be carried out sufficiently in advance and based on regular and clear lines of communication – and is a live piece of work, so should be regularly revisited - with each identified risk, having a named owner is best practice.

