Winter Operation at Zurich Airport

Issued by:
Philip Gentsch
Deputy Head Deicing Coordination FZAG
Date: 01.11.2019

Released by:
Urs Haldimann
Head Deicing Coordination FZAG
Date: 01.11.2019
# Winter Operation at Zurich Airport

## Revision 18

dated 1.11.2019

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page No.</th>
<th>Changes / Revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.4</td>
<td>4-10</td>
<td>Reference to Airport Authority internal Winterops Manual added</td>
</tr>
<tr>
<td>4.1.4</td>
<td>4-10</td>
<td>Notice about use of Clean Aircraft Concept added, including extract from AIP</td>
</tr>
<tr>
<td>8.3.1</td>
<td>8-5</td>
<td>Adjustment of duty hours and stand-by times DTM</td>
</tr>
<tr>
<td>5.2.2</td>
<td>5-3</td>
<td>Revised</td>
</tr>
<tr>
<td>5.2.3.2</td>
<td>5-7 / 5-8</td>
<td>Revised</td>
</tr>
<tr>
<td>5.3.3</td>
<td>5-14 – 5-16</td>
<td>Pre-Deicing chapter added</td>
</tr>
<tr>
<td>divers</td>
<td>divers</td>
<td>New terms A-CDM</td>
</tr>
<tr>
<td>4.5</td>
<td>4-37ff</td>
<td>New Deicing Provider Jet Aviation added</td>
</tr>
<tr>
<td>divers</td>
<td>divers</td>
<td>AAS as Deicing Provider removed</td>
</tr>
</tbody>
</table>
1. **Table of Content**

1. **Table of Content** 1-3

2. **Record of Revisions** 2-1

3. **Introduction** 3-1
   3.1. Foreword 3-1
   3.2. Environmental Compliance 3-1
   3.3. Administration 3-2

4. **Organisations / Tasks / Competences** 4-1
   4.1. Flughafen Zürich AG (Zurich-Airport) 4-1
   4.1.1. ZRH Airport Steering 4-1
   4.1.2. Winterops Coordinator 4-3
   4.1.3. Deicing Coordination (DC) 4-5
   4.1.4. Airport Authority / Airport Manager 4-10
   4.1.5. Snow Committee 4-11
   4.1.6. Committee ‘Winter Operation at Zurich Airport’ known as ‘Planungs-Snowcommittee’ 4-14
   4.2. SR Technics 4-16
   4.3. Swissport 4-17
   4.3.1. Swissport Deicing Coordinator 4-17
   4.3.2. Swissport Deicing Truck Operators 4-18
   4.3.3. Swissport Deicing Trucks 4-20
   4.3.4. Swissport Remote Deicing Pad Coordinator 4-22
   4.3.5. Swissport Trouble Shooter 4-24
   4.3.6. Swissport Trained person for clear ice check 4-25
   4.3.7. Swissport Apron Coordinator (Mr SNOW & ICE PATROL) 4-26
   4.3.8. Swissport Emergency Manager (EM) 4-27
   4.4. dnata Switzerland AG 4-28
   4.4.1. dnata Station Control (Staco) 4-28
   4.4.2. dnata Deicing Disposition (part of dnata Station Control) 4-29
   4.4.3. dnata Deicing Tarmac Coordinator 4-30
   4.4.4. dnata Deicing Truck Operators 4-31
   4.4.5. dnata Deicing Trucks 4-33
   4.5. Jet Aviation AG, Zurich Airport Branch 4-35
4.5.1. Jet Aviation AG, (OPS) 4-35
4.5.2. Jet Aviation AG, Deicing Disposition (part of Jet Aviation AG, OPS) 4-36
4.5.3. Jet Aviation AG, Deicing Coordinator 4-37
4.5.4. Jet Aviation AG, Deicing Truck Operators 4-38
4.5.5. Jet Aviation AG, Deicing Trucks 4-40
4.6. Cargologic 4-41
4.6.1. Schichtleiter Transport 4-41
4.7. Swiss International Airlines 4-42
4.7.1. SWISS Deicing Coordinator 4-42
4.8. Meteo 4-43
4.8.1. Meteo Briefing 4-43
4.8.2. Meteo Observations 4-44
4.9. Skyguide 4-45
4.9.1. FMP 4-45

5. Processes and Procedures 5-1
5.1. Operational Status of the Airport 5-1
5.1.1. Deicing on request 5-1
5.1.2. General Deicing 5-1
5.1.3. General Deicing with extended Slot Tolerance Window 5-1
5.2. Aircraft Deicing and Anti-icing 5-3
5.2.1. Deicing Truck Pool 5-3
5.2.2. Areas where Deicing is allowed 5-3
5.2.3. Repositioning for Deicing 5-5
5.2.4. Deicing on-stand (Standplatzenteisung) 5-5
5.2.4.1. Phraseology to be used on CUT: (Crew / Deicing Coordination) 5-5
5.2.5. Deicing on Remote Deicing Pads (RDP) 5-9
5.2.5.1. Locations of RDPs 5-9
5.2.5.2. Set-up of RDPs 5-10
5.2.5.2.1. Communication on the RDP (no truck exchange; same provider) 5-11
5.2.5.2.2. Removal of local area contamination (ROLAC): 5-12
5.2.5.2.3. Swiss/EDW A330 Engine Ice Shedding Prevention: 5-14
5.3. ‘Start-up Process’- information for crews 5-15
5.3.1. Deicing on stand 5-15
5.3.2. Deicing on Remote Deicing Pad (RDP) 5-15
5.3.3. Pre-Deicing (Vorenteisung) 5-17
5.3.3.1. Reason for Pre-Deicing 5-17
5.3.3.2. Decision for Pre-Deicing 5-17
5.3.3.3. Process of Pre-Deicing 5-17
5.3.3.4. Sample of manual update in AIMS 5-17
5.3.3.5. Cleaning of aircraft stand after Pre-Deicing 5-18
5.4. Runway Conditions / Runway Reports 5-19
5.4.1. Position 5-19
5.4.2. Procedure 5-20
5.5. Fluids 5-21
5.5.1. Specifications 5-21
5.5.1.1. SAE / ISO Type I Deicing/Anti-icing Fluid 5-21
5.5.1.2. SAE Type IV Deicing/Anti-icing Fluid 5-21
5.5.2. Holdover Times 5-22
5.5.3. Stock-keeping 5-22
5.5.3.1. at Zurich Airport 5-22
5.5.3.2. outside Zurich Airport (Münchwilen AG/Birrfeld) Transport: 5-23
5.5.3.3. Maintenance and trouble shooting of installations at Zurich 5-23
5.6. Winterdienst Flächenreinigung 5-24
5.6.1. Winterdienst Flächenunterhalt 5-24
5.6.2. Einsatzgebiet Pisten (Gruppen A, B, C) 5-28
5.6.3. Einsatzgebiet Vorfeld / Werft (A, B, Trax, Schneeverlad) 5-29
5.6.4. Einsatzgebiet Vorfeld / Werft / Dock E (Schneewälle- / Deponien) 5-30
5.6.5. Fahrzeuge 5-31
5.6.5.1. Airside 5-31
5.6.5.2. Landside 5-32
5.6.6. Räumprinzip Pisten 5-33
5.6.6.1. Pistenräumung als Standard mit einer Gruppe 5-33
5.6.6.2. Pistenräumung (Doppelräumung) mit zwei Gruppen 5-34
5.6.7. Apron Cleaning with Snow (> 5cm) 5-35
5.7. Meteo 5-38
5.7.1. Metar (actual weather information) 5-38
5.7.2. TAF (terminal area forecast) 5-40
5.7.2.1. 9 hr TAF 5-40
5.7.2.2. 30 hr TAF 5-41
5.7.3. Most common abbreviations used in weather reports and forecasts during winter operations: 5-42

6. IT Systems 6-1
6.1. AIMS (Airport Information and Management System) 6-1
6.2. darts (Departure and Arrival Traffic Management System) 6-3
6.3. sally (Resource Allocation Management System) 6-4
6.4. Deicing Tool “AROSA” 6-5
6.5. Borrna (Boschung Road and Runway Management) 6-5

7. Charges 7-1
7.1. Aircraft Deicing 7-1
7.1.1. Charge for the use of the Deicing Facilities 7-1
7.1.2. Party liable to pay charge 7-1
7.2. Removal of snow and ice 7-1

8. Crisis Management 8-1
8.1. ‘Krisenstab Schnee’ 8-1
8.2. Information Media 8-3
8.3. Terminal Management FZAG 8-4
8.3.1. Duty Terminal Manager 8-4
8.3.2. Restaurants 8-6
8.3.3. overcrowded terminals 8-6
8.3.4. facilities for stranded passengers 8-6

9. Annex 9-1
9.1. Decoding “State of the runway” / SNOWTAM 9-1
9.1.1. State of the runway 9-1
9.1.2. SNOWTAM 9-3
9.2. Holdover Time Tables (HOT) 9-5
9.2.1. Holdover Time Tables 9-5
9.2.2. Use of Holdover Time Guidelines for type IV fluid 9-5

10. Documents 10-1
10.1. Deicing Fluid and Hot Water storage facilities 10-1
10.2. Deicing Plan for Zurich Airport 10-3
10.2.1. General introduction 10-4
10.2.2. Principle 10-4
10.2.3. Procedure 10-4
10.2.4. General duties valid for all phases 10-8
10.2.5. Procedure for teleconference when requested from NMOC/OPSD 10-8
10.3. Extract AIP 10-10
10.4. Attachment to the standard Ground Handling Agreement 10-12
10.5. Index of relevant documents issued by partners 10-15
10.5.1. SWISSPORT INTERNATIONAL LTD. 10-15
10.5.2. Airlines 10-15
10.5.3. Swiss International Airlines 10-15
10.5.4. dnata 10-15
10.5.5. Jet Aviation / Allen Groupe 10-15

11. Glossary 11-1

12. Distribution 12-1
12.1. FZAG 12-1
12.2. SR Technics 12-1
12.3. Handling Agents 12-1
12.4. Swiss 12-1
12.5. Local Carriers 12-1
12.6. Airlines 12-1
12.7. SKYGUIDE 12-1
12.8. External 12-1
2. Record of Revisions

<table>
<thead>
<tr>
<th>Revision No.</th>
<th>Dated</th>
<th>Date entered</th>
<th>by</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>1. November 2013</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>1. November 2014</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1. November 2015</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>1. November 2016</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>1. November 2017</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1. November 2018</td>
<td>Update available on Internet</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>1. November 2019</td>
<td>Update available on Internet</td>
<td></td>
</tr>
</tbody>
</table>
3. Introduction

3.1. Foreword

by Stefan Tschudin, Chief Operation Officer, Member of the Executive Committee Zurich Airport (Flughafen Zürich AG)

Adverse weather conditions, be it in the form of snow, ice, freezing fog, freezing rain or frost, etc., impact airport operations during the winter months. Disrupting flight schedules, impairing ground handling, putting huge additional workload on all partners present at the airport and tremendously increasing the demand for coordination, to name a few, are the consequences.

Two Remote Deicing Pads, as main infrastructure for the Aircraft De- & Anti-icing, offer an efficient process time. The setup meets not only present environmental standards but keeps fulfilling the requirements of both, airlines and airport. Depending on the deicing demand and Remote Deicing Pad delay situation, in order to evenly distribute the average deicing delay, Deicing Coordination will decide on relief deicings at the parking position (onstand deicing); depending on the Deicing provider, Deicing might be carried out solely at the parking position.

Snow cleaning and clearing of runways and taxiways is a very demanding task. Airlines would like to operate their flights with as little delay as possible and avoid cancellations. A safe operation is only possible if runway conditions are within given brackets. The aim is to have at all time at least one of the three runways available for operations.

The present document contains a comprehensive overview of the organisation and the processes of the Deicing Coordination Unit. Even though the lead is with Zurich Airport (Flughafen Zurich AG), it continues to be a product of cooperation between airport, Swissport, dnata, AAS, Swiss as hub carrier, Skyguide, MeteoSchweiz, SR Technics, Jet Aviation Private Handling, Execujet, AOC and various other service providers.

Zürich Airport is for all the cases of winter operation well prepared, but weather conditions come often as surprise. This situation then asks for a lot of flexibility from everybody involved.

So I would like to thank you in advance for your support to maintain Zürich Airport operational.

3.2. Environmental Compliance

by Emanuel Fleuti, Head of Environment, Flughafen Zurich AG

During a winter period, depending on weather conditions, 400,000-1,100,000 litres of aircraft deicing fluid and 400,000-2,000,000 litres of apron and runway deicing fluid is being used at Zurich airport.

The chemical substances applied (glycol, formiate) are very effective, but have adverse effects on the environment. Deicing fluid mixed with rain water from the apron or runway drainage enters the nearby river Glatt, which flows along the Western airport boundary. To discharge untreated deicing sewage is not in compliance with the regulations of the Swiss Ordinance on Water Protection. Due to temporary fluctuations in the use of deicing fluids, there are certain times of the year in which the river Glatt has to cope with peak loads. In consequence, during the deicing period, bacterial growth and a shortage of oxygen may be found in the main ditch. For compliance reasons, deicing sewage thus has to be pre-treated prior to discharge into the storm water system.

Depending on the carbon concentration three different procedures are in use for the treatment of the deicing sewage today:
Highly concentrated deicing sewage (high carbon load) which drips off from aircraft is collected directly at the deicing pads (DIP) Foxtrott and Charlie (drains/storage basins) or at the place of application in case of on-stand-deicing (sweeper trucks). This sewage is either treated in the airport’s distillation plant to recycle the glycol, or brought to a recycling plant.

A large part of the deicing sewage with a medium carbon load is treated in a spray irrigation system where it is sprayed on suitable grass land within the airport. The decomposition occurs in a natural way through the microbiological activity in the top 60 – 90 cm of the soil filter. The degradation rate reaches 99%.

Low concentrated sewage is treated in retention filter ponds.

For efficiency reasons in the treatment of deicing sewage and thus compliance with discharge requirements, deicing operations at remote deicing pads (RDP) are to be prioritised. Aircraft deicing operations at the gates should be minimised and limited to peak operating times or to aircraft types unsuitable for RDP. Deicing operations may only take place where suitable retention of deicing effluent is possible. This includes hard surfaces that are connected to the deicing drainage system or that can be serviced with sweeper trucks.

As of the winter season 2014/2015, Zurich airport cleans 95% of the carbon load from deicing sewage before discharging it into the river Glatt.

3.3. Administration

by Urs Haldimann, Head Deicing Coordination, Zurich Airport (Flughafen Zürich AG)

The intention of this manual is to give overall information about Winter Operation at Zurich Airport. It is written in cooperation with all services involved. It does not replace local instructions of the different organisations and covers the organisational and practical part of aircraft deicing, runway inspections, reporting of runway conditions and surface cleaning.

The manual is available online to any interested party. Revisions are issued annually and available on 1st November.

Location on Internet:
www.zurich-airport.com

- on top of homepage click on “Business & Partners”
- Tab “Flight Operations”
- Tab “Guidelines” - “Winter Operation at ZRH”
- “Documents” (on right upper part); find pdf “Winter Operations”


We kindly request you to inform us about errors and omissions. We are glad about inputs how the manual could be completed and enhanced.

Please send any suggestions to
Urs Haldimann
Head of Deicing Coordination
OG
Flughafen Zürich AG
P.O.Box
CH-8058 Zürich-Flughafen

Flughafen Zürich AG / Zurich-Airport: FZAG used as abbreviation in this document

Note: all timings in this document are Swiss Local Time
4. Organisations / Tasks / Competences

4.1. Flughafen Zürich AG (Zurich-Airport)

4.1.1. ZRH Airport Steering
by Urs Haldimann, FZAG, Deicing Coordination

**Location:**
Terminal 1
Office 3 - 922

**Contacts:**
Tel. +41 43 816 77 44
Fax: +41 43 816 21 13
e-mail: airportsteering@zurich-airport.com

**Availability:**
- Duty Manager ZRH Airport Steering
- all year 04.45 until end of daily operation

**Duties and competences:**
- central steering unit of ZRH Airport
- following organisations are located at the ZRH Airport Steering:
  - FZAG - Airport Steering
    - Passenger Bus Disposition
    - Parking Stand/Gate/Racetrack Disposition
    - Airport Guide Disposition
  - SWISS - Hub Control
  - Swissport - Station Control
    - Operation-Control
    - Voice
    - Pushback and Towing Disposition
    - White Collar Disposition Check-in & Gate
  - dnata - Station Control (available upon call-in by A.S.)
  - ISS - Cabin Cleaning Disposition
    - Crew Transportation Disposition
  - Gate Gourmet - Catering Truck Disposition
  - Police - Staff Disposition for Security Control
- coordination of deicing activities is delegated to Deicing Coordination
- coordination of runway closures for cleaning/clearing with Winterops Coordinator/Snow Committee
- coordination of apron clearing with Apron Control, Handling Agents, Airport Authority
4.1.2. Winterops Coordinator
by Urs Haldimann, FZAG Deicing Coordination

**Location:**
Terminal 1
Office 3 - 922 (Airport Steering)

**Contacts:**
Tel. +41 43 816 77 56
Fax: +41 43 816 21 13
e-mail: deicing@zurich-airport.com

**Availability:**
- from 1st November till 31st March
- Pikett from 05:00 LT until end of daily operation

**Start of Operation:**
- Forecasted heavy snow fall
- Sudden intense, continuous snow fall which will seriously affect airport operation
- If Skyguide intends to declare General Deicing with extended Slot Tolerance Window

**Activation:**
- by Duty Manager Airport Steering or Airport Manager
  - as definite call-in
  - prophylactic, based on critical weather forecast
  - on standby to be activated on short notice
- Start of Operation - 60 minutes after call-in

**Duties and competences:**
- Helps improve coordination and supervision of all activities in regard to flight operation, with all services involved
- Keeps a "bird-eye" view of winter ops processes
- Organizes and leads the Winterops phone conferences (regular & ad-hoc)
- Avoids unilateral leadership decision of individual partners (->CDM !)
➢ IT system updates: verifies the accuracy of the TOBT management by SWISS HCC & Handling Agents (until end of aircraft handling process)

➢ Coordination with Skyguide:
  o activation of ‘General Deicing with Slot Tolerance Window Procedure’ of Eurocontrol Brussels (NMOC)

➢ Coordination with Airport Steering/Snow Committee for clearing and cleaning of runways, taxiways and apron

➢ Participation in "Krisenstab Schnee"

➢ Regular contact and update with MeteoSchweiz office

➢ First point of contact in case of disagreements

➢ Coordination of media information with Corporate Communications

➢ Keeps "Log Winterops Coordinator" updated

➢ Initiates calling in the Snow Committee emergency meeting
4.1.3. **Deicing Coordination (DC)**
by Urs Haldimann, FZAG Deicing Coordination

**Location:**

Terminal 1
Office 3 - 938

**Contacts:**

Tel. +41 43 816 77 00
Fax: +41 43 816 21 13
e-mail: deicing@zurich-airport.com

**Availability:**

- from 1st October till 30th April
- from 05.00 LT until end of daily operation

**Start of Operation:**

- during deicing activities
- when one or more Remote Deicing Pads are in operation
- on request of any member of the Deicing Coordination

**Activation:**

- by Deicing Coordinator
  - as definite call-in
  - prophylactic, based on critical weather forecast
  - on standby to be activated on short notice
- Start of Operation - 30 minutes after call-in during office hours
  - 60 minutes after call-in outside office hours

**Duties and competences:**

- the Deicing Coordination is the central steering unit for aircraft deicing at Zurich airport
- coordination of deicing activities with all services and DC providers involved
- decision about on-stand deicing or remote deicing
- IT system updates – TOBT management
- coordination of remote deicing with Apron Control and Skyguide/Tower
- coordination of relief onstand deicing (as per expected/actual delay situation; best practice)
- coordination with Skyguide:
  - activation of status ‘General Deicing’
- continuous follow-up of deicing progress
- continuous information of all partners about deicing delays

**and if Winterops Coordinator not available:**

- coordination with Airport Steering/Snow Committee for clearing and cleaning of runways, taxiways and apron
- coordination with Skyguide:
  - activation of ‘General Deicing with Slot Tolerance Window Procedure’ of Eurocontrol Brussels (NMOC)
- coordination with home carrier about possible adjustment of schedule
- coordination of media information with Corporate Communications
Formation / Organisation:

FZAG Deicing Coordinator (DC):
- lead Deicing Coordination
- decision: opening/closing of Remote Deicing Pads and number of trucks available per provider
- decision: on-stand Deicing / remote deicing
- fix deicing sequence for on-stand deicing
- decision: activation of status General Deicing in coordination with ATC
- coordination DC – Apron Control
- coordination DC – Skyguide/Tower and Flow Management Position
- coordination DC – Remote Deicing Pads
- coordination DC – Airport Authority
- communication DC – crews
- decision about close-down of DC

Swissport Disposition Pushback:
- mobilisation of Deicing Truck Operators
- mobilisation of Remote Deicing Pad Coordinators
- single point of entry for ad-hoc Deicings for SWP customers (if Deicing Organisation not deployed)

Swissport Deicing Coordinator:
- mobilisation of Deicing Truck Operators
- mobilisation of Remote Deicing Pad Coordinators
- decide about applicable deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand deicing
- coordination of deicing truck deployments on Remote Deicing Pads
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks
dnata Deicing Unit
- coordinate with FZAG Deicing Coordination: regular update/timings on number of trucks available for on-stand deicing (no remote deicing for time being)
- mobilisation of Deicing Truck Operators
- decide about applicable deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand deicing
- update of AIMS Deicing data (truck/spray start-end data)
- liaise with dnata Station control regarding proper TOBT setting for each on-stand deicing
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks

Jet Aviation Deicing Unit
- coordinate with FZAG Deicing Coordination: regular update/timings on number of trucks available for on-stand deicing (no remote deicing for time being)
- mobilisation of Deicing Truck Operators
- decide about applicable deicing procedure and mixture ration based on actual and forecasted met-conditions
- timely truck assignment for on-stand deicing
- update of AIMS Deicing data (truck/spray start-end data)
- liaise with dnata Station control regarding proper ETD setting for each on-stand deicing
- plan and arrange refill of trucks
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities with trucks
Deicing Coordination members:

In case of light snowfall or if snowfall is expected to last for only a short period the Deicing Coordination may operate with only the FZAG Deicing Coordinator and the Swissport Deicing Coordinator, or with either or, or none at all present after bilateral consultation and agreement (note: if FZAG Deicing Coordination not on site, FZAG Airport Steering keeps responsibility)
4.1.4. Airport Authority / Airport Manager
by Jürg Suter, FZAG Airport Authority

Location: Duty Office Airport Authority
095

Contacts: Tel. +41 43 816 21 11
Fax: +41 43 816 47 57
e-mail: airportauthority@zurich-airport.com

Organisation:
2 Airport Managers on duty 05:15 - 23:00
1 Airport Manager on duty 23:00 – 05:15
Pikett Airport Manager standby 24h

Duties and competences:
- continuous monitoring of weather development
- monitoring, assessment and measurement of runway conditions
- publish Runway Reports, SNOWTAM and “State of the runway”
- plan and initiate clearing and cleaning of runways, taxiways and apron
- coordinate closure of runways, taxiways and apron with Skyguide / Tower, Swiss-OCC, Apron Control, FZAG ‘Winterdienst’, Deicing Coordination, ZRH Airport Steering by the means of telephone conferencing
- summon Snow Committee

Documentation
- Airport Managers make use of their own “Winter Operations Manual”, which details the various duties, competences, tasks, checklists and guidelines. This manual summarizes all relevant information from winter services having a touch point with Airport Authority. The manual is stored in the document management system – “dms” of FZAG and is aimed and intended for internal use by the Airport Managers only; for any excerpt, apply to Airport Authority.

Clean Aircraft Concept (CAC)
- Starting with Winter season 2017/2018, if a flight crew does not adhere to the CAC, Airport Authority can be called to intervene. With effect 03.01.2019 following content was added to the AIP LSZH AD 2.1:

5.4 Clean Aircraft Concept (CAC)
Clean Aircraft Concept as defined in ICAO Doc 9640 is applied; aircraft are de-iced according to the requirements of SAE AS6285C. Airport Authority can intervene in case of non-adherence.
4.1.5. Snow Committee
by Urs Haldimann, FZAG Deicing Coordination

**Location:** Duty Office Airport Authority
095

**Contacts:**
Tel. +41 43 816 21 11
Fax: +41 43 816 47 57
e-mail: airportauthority@zurich-airport.com

**Start of Operation:**
- continuous snowfall or freezing rain
- on request of any member of the Snow Committee

**Activation:**
through Airport Manager
- as definite call-in
- prophylactic, based on critical weather forecast
- on standby to be activated on short notice

by Telephone
- on short notice
- by means of Telephone Conference
- activated by Airport Manager or Deicing Coordinator

**Duties and competences:**
- coordination and decision about clearing and cleaning activities on runways, taxiways and apron

**Formation / Organisation:**
Airport Manager
- Head Snow Committee
- coordination runway measurement
- plan and initiate clearing and cleaning of runways, taxiways and apron in coordination with Deicing Coordinator/Airport Steering and Skyguide/Tower

FZAG Airport Steering/Deicing Coordinator:
- coordination of runway closures / runway cleaning with members of Deicing Coordination and ZRH Airport Steering (Handling Agents)

Duty Manager SKYGUIDE / Tower
- representative of SKYGUIDE in Snow Committee
- coordination of runway closures / runway cleaning with Tower

DOS Apron Control
- representative of Apron Control in Snow Committee
- coordination of runway closures / runway cleaning with Apron Control

Representative FZAG ‘Winterdienst’
- coordination Snow Committee – WHZ (Werkhofzentrale)
- representative of snow removal teams
- coordinate removal of deicing fluid

Duty Manager SKYGUIDE / Flow Management Position
- coordination of activation and de-activation of Extended Slot Tolerance Window Procedure with SKYGUIDE/TWR and Eurocontrol/NMOC

Meteorological Advisor MeteoSchweiz
- Information about actual weather situation
- Weather forecast

SWISS NOC:
- coordination runway closures / runway cleaning between OCC & Flight Dispatch
- know-how of aircraft performance vs. contaminated runways
Snow Committee members:

- Deicing Coordinator
- Airfield Maintenance (snow cleaning)
- Tower
- Apron
- Deicing Disposition
- Deicing Coordination
- NOC
- MeteoSchweiz
- FMP* = Flow Management Position

FMP* = Flow Management Position
4.1.6. Committee ‘Winter Operation at Zurich Airport’
known as ‘Planungs-Snowcommittee’
by Urs Haldimann, FZAG Deicing Coordination

Activation:
- two meetings at the beginning (early October) and the end of winter season (early May)
- any time when needed
- on request of any member

Tasks:
- manage processes in connection with Winter Operation at Zurich Airport

Formation / Organisation:

Airport Authority
- Head Airport Authority - Responsible for part ‘Cleaning / Clearing’

Deicing Coordination
- Head Deicing Coordination - Responsible for part ‘Deicing Coordination’

Airfield Maintenance
- Head ‘Winterdienst’

Apron Control
- Head FZAG Flight Ops & Head FZAG Apron Control

Skyguide
- Representative Tower
- Representative FMP (Flow Management Position)

Handling
- Swissport: Head Aircraft Deicing
- dnata: Head Aircraft Deicing
- Jet Aviation: Head Aircraft Deicing & Operations Coordinator
SR Technics
  o Responsible ‘aircraft process technology and material’
  o Manager Line Maintenance ZRH

Swiss
  o Representative Operations
  o Representative Flight Operations
  o Station Manager

Airlines
  o Helvetic // Edelweiss // Rega // CHAir

AOC
  o Representative Airlines

Other interested Operators & Partners
4.2. SR Technics
currently no content
4.3. **Swissport**

by Christian Glauser, Swissport, Head Aircraft De- / Anti-Icing Tel. +41 43 815 07 70

4.3.1. **Swissport Deicing Coordinator**

**Location:** Deicing Coordination

Terminal 1 – Office 3 - 938

**Contacts:** Tel. +41 43 815 08 44

**Availability:**

- from 1st October till 30th April from 06.00 LT until end of operation (2 shifts)
- from 1st May till 30th September by Swissport Disposition Pushback

**Duties and competences:**

- integrated part of Deicing Coordination
- mobilise Deicing Truck Operators
- mobilise Remote Pad Coordinators
- decide about applicable deicing procedure and mixture ratio based on actual and forecasted met-conditions
- check/responsible for ontime update of on-stand truck assignment and DAS/DAE / in RTC/AIMS for ICE/on Stand deiced Aircraft
- coordination of deicing truck deployments on Remote Deicing Pads
- plan and arrange refill of trucks for on-stand deicing
- arrange staff rotation and meal breaks
- arrange and coordinate trouble shooting in case of technical irregularities

**Number of staff**

20 Coordinators

**Recruitment**

The recruitment of the Coordinators is in the responsibility of Swissport.

**Qualification**

The Coordinators are selected and instructed by Swissport and FZAG Apron Control (Voice)
4.3.2. Swissport Deicing Truck Operators

Contacts: via Deicing Coordination
Tel +41 43 815 08 44

Availability:
- from 1st May till 30th September: available on request - reaction time 60 minutes (one OnStand Truck)
- from 1st October till 30th April: daily at 06.00 LT two operators to operate - OnStand trucks (Stammfahrer) - standby staff for full operation - standby staff for late shift – mobilised according weather forecast

Activation:
standby staff through Swissport Deicing Coordinator.

Duties and competences:
- deicing and anti-icing of aircraft according to rules stipulated in De- / Anti – icing manuals (DAM-De-/Anti-Icing Manual) issued by customer airlines & Global Airline Standards
- deicing on-stand
- deicing on Remote Deicing Pads
- secure parking of trucks after deicing

Communication:
- with Cockpit Crews (deicing on-stand) ground-cockpit communication
- with RDP Coordinator trunked radio system
- with Deicing Coordination trunked radio system or mobile phone

Number of staff
140 Deicing Truck Operators
Recruitment
The recruitment of the Operators is in the responsibility of Swissport.

Qualification
Deicing Truck Operators are selected and instructed by Swissport.

Training
The training is performed by Swissport according to SAE based instructions.
### 4.3.3. Swissport Deicing Trucks

**Location:**
- 2 Vestergaard Gamma T60
- 2 Vestergaard Flexliner T60
- 2 Vestergaard Beta NG T60
- 8 Vestergaard Beta T60

**Availability:**
- from 1st May till 30th September: on request (one on Stand Truck) – reaction time 60 minutes
- from 1st October till 30th April: all trucks from 06.00 LT – end of operation

**Activation:**
by assigned Driver

**Number of Trucks / Type of Trucks**

| 2 Vestergaard Gamma          | 4'800 litres water at 70ºC |
| 2 Vestergaard Flexliner     | 2'200 litres ADF Type I at 70ºC |
| 2 Vestergaard Beta NG       | 1'800 litres ADF Type IV cold |
| 8 Vestergaard Beta          | 4'000 litres water at 70ºC |
|                             | 2'000 litres ADF Type I at 70ºC |
|                             | 2'000 litres ADF Type IV cold |
| 2 Vestergaard Beta NG       | 5'000 litres water at 70ºC |
|                             | 3'000 litres ADF Typ I at 70ºC |
|                             | 2'000 litres ADF Typ IV cold |
| 8 Vestergaard Beta          | 5'000 litres water at 70ºC |
|                             | 3'000 litres ADF Typ I at 70ºC |
|                             | 2'000 litres ADF Typ IV cold |
Note:
Spraying temperature measured at nozzle of all operated trucks 65°C.

**Maintenance and Repair**

The maintenance shop of Swissport is responsible for the maintenance and repair of the deicing trucks.

shop hours: Monday till Sunday 06:00 – 23:30

Extension of operating hours are initiated by Swissport Coordinator in Deicing Coordination. In case of icing conditions / snowfall, the presence of technicians is secured.
4.3.4. Swissport Remote Deicing Pad Coordinator

Location: Remote Deicing Pads “Charlie” & “Foxtrott”

Contacts: via Deicing Coordination
Tel. +41 43 815 08 44

Availability:
- from 1st October till 30th April at 06.30 LT
- 2 Coordinators standby as from 06.00
- 2 Coordinators standby for late shift
  – mobilized according to weather forecast

Activation:
through Swissport Deicing Coordinator

Duties and competences:

- head of assigned Remote Deicing Pad
- responsible for safe deicing and anti-icing of aircraft according to stipulated rules
- capacity management on assigned Remote Deicing Pad
- specify fluids, fluid mix and deicing procedures according to the actual weather and traffic conditions in cooperation with the Deicing Coordination
- contact crew before starting deicing and request confirmation that aircraft is ready
- inform crew about de-/anti-icing completed
- inform crew (de-/anti-icing code) after completion of deicing about
  - begin time of deicing (last step)
  - applied fluid types and brand name
  - fluid mix-ratio, enabling crew to calculate holdover time
  - used deicing procedure (one step / two step)
  - post deicing check completed
- coordinate with Apron Control before positionning Trucks onto a/the lane/s
- indicates lane available / ready for taxi in / ready for taxi out / ready for taxi in&out
- indicates refuelling of trucks well in advance through adequate input into the system (Tankbalken)
- during LVP-BV doubleclick (ready for taxi in&out) shall not be used, while when not in LVP-BV doubleclick shall be used to expedite traffic flow
NOT responsible for the separation between aircraft (mix on different lanes) or aircraft – vehicles

closes lanes, orders the trucks back to the parking/hut and indicates this trough the system when demand drops
monitor parking of trucks in secure positions
handover aircraft to Apron Control when deicing is completed
regular briefings and skills check with Deicing Truck Operators

responsible for correct handling of AIMS Anzeigemase or SIMATIC panel incl. for truck exchange

**Communication:**

- with Cockpit Crews: CUT-frequencies: RDP Foxtrott 121.635
  RDP Charly 121.640
- with deicing trucks wireless disposition-tool (back-up: trunked radio system)
- with Deicing Coordination wireless disposition-tool (back-up: trunked radio system or mobile phone)
- with Apron Control AIMS Anzeigemaske or Fallback Simatic Panel / phone

**Number of staff:**

20 Coordinators

**Recruitment**

The recruitment of the Pad Coordinators is in the responsibility of Swissport.

**Qualification**

- good knowledge of the English language
- good knowledge of the phraseology of radio communication with the crews

**Training**

- The training as Pad Coordinator is performed by Swissport.
- The radio communication instruction is in line with SAE Global Airline Standards
4.3.5. Swissport Trouble Shooter

**Location:**
Dock A  
Office A20 0-924

**Contacts:**
via Deicing Coordination  
Tel. +41 43 815 08 44

**Availability**

Standby organisation:
- 1st October – 30th April
- 05.00 – end of operations

**Duties and competences:**

- active supervision on ramp during deicing deployment
- assure quality control by taking fluid samples according SAE AS
- coordinate with SAE rules check of fluids and keep an updated library containing all measurement results as well as treated aircraft
- assure direct contact with Deicing Truck Operators when in operation
- monitor and assist Deicing Truck Operators in specifying
  - deicing procedures (one step / two step)
  - fluid-mix
  - spraying techniques
  - driving technique
- initiate adjustment of procedures or fluid mix if required by changed conditions e.g. meteorological
- troubleshooting for technical problems
- link to the Swissport Deicing Coordinator in Deicing Coordination
- contact person for crews and airline staff in case of problems or complaints
4.3.6. Swissport Trained person for clear ice check

**Location:**
On-stand Tarmac

**Contacts:**
via Deicing Coordination
Tel. +41 43 815 08 44

**Availability:**
contracted airlines only available on request - reaction time 60 minutes - departure

**Duties and competences:**
- clear ice check after deicing according to rules stipulated in De- / Anti – Icing manuals (De/ANTI-Icing Manual) issued by customer airlines & AEA recommendations

**Qualification**
according to valid requirements

- Ops temporarily suspended during Winter 2019/20
4.3.7. Swissport Apron Coordinator (Mr SNOW & ICE PATROL)

**Location:** on tarmac

**Contacts:** via Swissport BluCoDi
               Tel. +41 43 815 02 22

**Availability:**

Standby organisation:

- 1st October – 30th April
- 24 hours

**Activation (Mr SNOW)**

by Airfield Maintenance (automatic if snow clearing group R is activated)

(translated from “Schnee und Eis Konzept Swissport”, QHSE / Rémy Wäckerling, 30.10.2019; approved by FZAG/OM/OMW)

**Duties and competences (Mr SNOW):**

- coordination of clearing and cleaning activities on apron with Airfield Maintenance; Mr SNOW on bord FZAG vehicle (Lindner R04), activated together with snow clearing group “R”. Driver from FZAG.
- initiate removal of handling equipment which hampers snow cleaning
- link between FZAG, SWP SOM, BlueCoDi and coordinator ICE PATROL

**Duties and competences (ICE PATROL):**

- SWP vehicle(s) circulating on aircraft parking stands, equipped with “Sno-N-Ice” (rosa Granulat)
- may be used at any airside location, including pathways for employees

**Responsibility of Employee:**

- Correct behaviour in winter conditions
- Safety First!
- Info flow: employee → superior → BluCoDi → SOM → Duty Manager Airport Steering (FZAG) that handling on a specific position (or generally) cannot be pursued to to unsafe working conditions (handling stop; handling delayed; handling slowed), resulting in IR76/77
4.3.8. Swissport Emergency Manager (EM)

**Location:** moving

**Contacts:** via Swissport Staco
Tel. +41 43 815 08 22

**Organisation:**

Standby organisation:
- 1st October – 30th April
- 05.30 – 23.30 LT

**Duties and competences:**

- highest decision level for operational issues of Swissport
- coordination between Swissport operations and Deicing Coordination
- mobilise emergency organisation within Swissport
- inform Swissport and Cargologic operations about taken decisions
- initiate - reallocation of staff
  - cancellation of flights
  - meal service on board of aircraft
  - handling of aircraft in maintenance hangar
  - information of media
- attend meetings of Snow Committee
- represents handling organisation at meetings of ‘Krisenstab Schnee’
4.4. dnata Switzerland AG
by Marie Kaden, Manager Ground Logistics dnata ZRH, Tel. +41 76 409 9363

4.4.1. dnata Station Control (Staco)

Location: Dock B
Office B20 0Z - 985

Contacts: Tel. +41 43 815 8383
Email: zrh.ops@dnata.ch
SITA: ZRHKO7X

Availability:
- Daily from 05.00LT until end of operation
- 24 hours standby service by dnata Duty Station Manager (DSM) under +41 43 815 8383

Organisation:
Standby organisation:
- 1st October – 30th April
05.30 – 23.30 LT

Duties and competences:
- link to own handling organisation
- coordination of handling
- contact for customer airlines
- publish delay information (NI / ED / Staff ED) in AIMS
- Mobilize emergency organization within dnata
4.4.2. **dnata Deicing Disposition (part of dnata Station Control)**

**Location:**
Dock B  
Office B20 OZ - 985

**Contacts:**
Tel. +41 43 815 8383  
Email: zrh.ops@dnata.ch  
SITA: ZRHKO7X

**Availability:**
- Daily from 05.00LT until end of operation

**Organisation:**
Standby organisation:
- 1st October – 30th April  
- 05.30 – 23.30 LT

**Duties and competences:**
- Link to own Station Control  
- Integrated part of dnata Station Control (Staco)  
- Mobilize Deicing truck operators  
- On time assignment of Deicing trucks for on-stand Deicing  
- check/responsible for ontime update of truck assignment and DAS/DAE in AIMS  
- Arrange and plan refill of Deicing trucks for on-stand Deicing  
- Arrange staff rotation and meal breaks  
- Arrange and coordinate trouble shooting in case of technical irregularities  
- Represents handling organization at meetings of “Krisenstab Schnee”

**Qualification**
The staff for dnata Deicing disposition is selected and instructed by dnata Switzerland AG
4.4.3. dnata Deicing Tarmac Coordinator

**Location:**
Dock B  
Office B20 0Z - 985

**Contacts:**
Tel. +41 76 348 9730

**Availability:**
- Daily from 05.00LT until end of operation

**Organisation:**

Standby organisation:
1st October – 30th April
- 05.30 – 23.30 LT
- 24 hours standby service by dnata Deicing organization under +41 76 348 9730

**Duties and competences:**
- Coordination of clearing and cleaning activities on apron with Airfield Maintenance
- Initiate removal of handling equipment on parking stands with Deicing activities
- Apply for closure of parking stands and repositioning of aircraft if handling heavily impaired by snow
- Check conditions of parking stands after clearing and cleaning to ensure that handling is possible

**Qualification**

The staff for dnata Tarmac Coordinator is selected and instructed by dnata Switzerland AG
4.4.4.  dnata Deicing Truck Operators

**Location:**  
Via dnata Deicing Disposition

**Contacts:**  
Tel. +41 43 815 8383  
Email: zrh.ops@dnata.ch  
SITA: ZRHKO7X

**Availability:**
- From 1st May till 30th September - Available on request with a reaction time of 60 minutes (two Beta Truck) by dnata Deicing organization under +41 43 815 8383
- From 1st October till 30th April - Daily from 05.00LT – end of operation  
  - 24 hours standby service by dnata Deicing organization under +41 76 348 9730

**Availability:**
Standby staff through dnata Deicing Disposition

**Duties and competences:**
- Deicing and anti-icing of aircrafts according to rules of dnata Deicing manual, de- / anti-icing manuals issued by customer airlines and Global Airline Standards
- Deicing on stand
- Refilling of Deicing trucks
- Secure parking of trucks after Deicing

**Communication for on-stand Deicing:**
- Ground – cockpit communication for selected airlines (alternative Line Maintenance or Jetcap)
- Deicing truck – dnata Deicing disposition via trunked radio system
- Deicing truck – dnata tarmac coordinator via trunked radio system

**Number of staff:**
35 Deicing truck operators
Recruitment:

The recruitment of the Deicing truck operators is in the responsibility of dnata Switzerland AG.

Qualification

dnata Deicing truck operators are selected and instructed by dnata Switzerland AG. The training is performed by dnata Switzerland AG according to SAE based instructions and standards.
4.4.5. dnata Deicing Trucks

**Location:**
4 Deicing Trucks Abstellhalle T62, 1 Deicing Truck Unterstand B31

**Availability:**
- From 1st May till 30th September - Available on request with a reaction time of 60 minutes (one Beta Truck) by dnata Deicing organization under +41 43 815 8330
- From 1st October till 30th April - Daily from 05.00LT – end of operation

**Activation:**
By assigned Deicing truck operator

**Number and Type of Trucks:**
5 Vestergaard Beta Next Generation (one truck equipped with FORCED AIR / AIR BLOWER but not in use)

<table>
<thead>
<tr>
<th>Tank</th>
<th>Capacity</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank 1</td>
<td>4'000 litres water</td>
<td>at 78°C</td>
</tr>
<tr>
<td>Tank 2</td>
<td>2'000 litres ADF Type 1</td>
<td>at 78°C</td>
</tr>
<tr>
<td>Tank 3</td>
<td>2'000 litres ADF Type 4</td>
<td>cold (OAT)</td>
</tr>
</tbody>
</table>

Note: Spraying temperature measured at nozzle of all operated trucks is 78°C (special heating system at nozzle)
**Maintenance and Repair:**

dnata GSE is trained by Vestergaard Company and is responsible for small diagnostics and repairs of the Deicing trucks. Dnata GSE is supported by Vestergaard emergency telephone service (Hotline).

- Monday till Friday from 07.00 – 16.00LT
- Weekend from 06.00 – 23:30 GSE on call
- Vestergaard emergency telephone service (Hotline) on call 24h/ Monday till Friday

In case of snowfall and icing conditions, the availability of a technician is secured.
4.5. Jet Aviation AG, Zurich Airport Branch
by Claudio Russo, Director FBO Operations, Tel. +41 79 150 45 47

4.5.1. Jet Aviation AG, (OPS)

**Location:**
GAC
Office G6 0-111

**Contacts:**
Tel. +41 58 158 84 66
Email: zrhfbo@jetaviation.com
SITA: ZRHPHPP

**Availability:**
- Daily from 05.40LT until 22.00LT (or end of operation)

**Organisation:**
- staffed 05.40 – 22.00 LT (or end of operation)

**Duties and competences:**
- link to own handling organisation
- link to own fueling organisation
- coordination of handling
- coordination with customs & immigrations
- contact for GA/BA customer
4.5.2. Jet Aviation AG, Deicing Disposition (part of Jet Aviation AG, OPS)

**Location:**

GAC

Office G6 0-111

**Contacts:**

Tel. +41 58 158 84 66

Email: zrhfbo@jetaviation.com

SITA: ZRHPHPP

**Availability:**

- Daily from 05.40LT until 22.00LT (or end of operation)

**Duties and competences:**

- Link to Jet Aviation Station Control
- Integrated part of Jet Aviation Station Control (ZRHOPS)
- Mobilize Deicing truck operators
- On time assignment of Deicing trucks for on-stand Deicing
- Arrange and plan refill of Deicing trucks for on-stand Deicing
- Arrange and plan refill of Deicing trucks for on-stand Deicing
- Arrange staff rotation and meal breaks
- Arrange and coordinate trouble shooting in case of technical irregularities
- Coordination of clearing and cleaning activities on apron with Airfield Maintenance
- Initiate removal of handling equipment on parking stands with Deicing activities
- Apply for closure of parking stands and repositioning of aircraft if handling heavily impaired by snow
- Check conditions of parking stands after clearing and cleaning to ensure that handling is possible

**Qualification**

The staff for Jet Aviation Deicing disposition is selected and instructed by Simon Miles Consulting Ltd
4.5.3.  Jet Aviation AG, Deicing Coordinator

**Location:**  Jet Aviation Ops

**Contacts:**  Tel. +41 76 348 9730

**Availability:**
- Daily from 05.40LT until end of operation

**Duties and competences:**

**Qualification**
- Assuring Fluid Tests are duly done, filled and filed
- Making sure the daily DEICING GSE checks are in order
- Trouble Shooting any unpredictable item during normal operation
- Allocation of monthly staff operational roster
- Making sure Jet Aviation SMS is followed
- Making sure training procedures are followed

The staff for Jet Aviation DEICING Coordinator is selected and instructed by Simon Miles Consulting Ltd
4.5.4. Jet Aviation AG, Deicing Truck Operators

**Location:** Via Jet Aviation OPS

**Contacts:**
Tel. +41 58 158 84 66
Email: zrhfbo@jetaviation.com
SITA: ZRHPHPP

**Availability:**
- From 1st May till 30th September - Available on request with a maximum reaction time of 60 minutes (two Mallaghan Truck) by Jet Aviation Deicing organization under + 41 58 158 84 66
- From 1st October till 30th April - Daily from 05.40LT – 22.00LT (or end of operation)

**Availability:**
Standby staff through Jet Aviation Deicing Disposition

**Duties and competences:**
- Deicing and anti-icing of aircrafts according to rules of Jet Aviation AG Deicing manual, de-/ anti-icing manuals based on current version of SAE/ICAO/FAA
- Deicing on stand
- Refilling of Deicing trucks
- Secure parking of trucks after Deicing

**Communication for on-stand Deicing:**
- Ground – cockpit communication for selected customers
- Deicing truck – Jet Aviation Deicing disposition via trunked radio system
- Deicing truck – Jet Aviation tarmac coordinator via trunked radio system
**Number of staff:**

13 Deicing truck operators

**Recruitment:**

The recruitment of the Deicing truck operators is in the responsibility of Jet Aviation AG.

**Qualification**

Jet Aviation Deicing truck operators are selected and instructed by Simon Miles Consulting Ltd on behalf of Jet Aviation AG. The training is performed by Simon Miles Consulting Ltd according to SAE/ICAO/FAA based instructions and standards.
4.5.5. Jet Aviation AG, Deicing Trucks

Location: GA4/GA1

Availability:
- From 1st May till 30th September: Available on request with a reaction time of 60 minutes (two Mallaghan Truck) by Jet Aviation Deicing organization under + 41 58 158 84 66
- From 1st October till 30th April: Daily from 05.40LT – 22.00LT (or end of operation)

Activation: By assigned Deicing truck operator

Number and Type of Trucks:
2 Mallaghan RA8200 DAF, two-man operated

<table>
<thead>
<tr>
<th>Tank</th>
<th>Capacity</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank 1</td>
<td>7’000 litres premix</td>
<td>at 85°C</td>
</tr>
<tr>
<td>Tank 2</td>
<td>1’200 litres anti-ice</td>
<td>cold</td>
</tr>
</tbody>
</table>

Note: Spraying temperature measured at nozzle of all operated trucks is 85°C for premix and cold for anti-ice

Maintenance and Repair:
Mallaghan is responsible for bigger diagnostics and repairs of the Deicing trucks. TBD is responsible for small diagnostics and repairs.

Monday till Friday from 07.00 – 16.00LT
To be on standby 24h

In case of snowfall and icing conditions, the availability of a technician is secured.
4.6. **Cargologic**

By K. Sammartin, CARGOLOGIC Head of Transport & Road Feeder Service (RFS)

4.6.1. **Schichtleiter Transport**

**Location:** Fracht Ost, Transportdisposition (V12)

**Contacts:**
Tel. +41 58 856 95 26 – K. Sammartin
+41 58 856 96 12 – Shift Leader, sl-transporte@cargologic.com

**Organisation:**
- on duty 05.00 – 24:00
- No special standby organisation during wintertime

**Duties and competences:**
- responsible for the transportation of cargo and cargo documents to and from the aircraft
- responsible for the loading and unloading of camions (RFS)
- manage and clean-up the parking sites for trailers, ULD, cargo trolleys – in cooperation with Swissport
- coordination with Cargologic-Organisation on tarmac (Valuable transportation)
- a contingency plan of Swiss Worldcargo exists to cope with extreme circumstances (e.g. embargoes)
- space requirements / cleaning requirements on tarmac are covered by the Apron Coordinator of Swissport
4.7. Swiss International Airlines
by R. Scherrer, SWISS Deicing Coordinator

4.7.1. SWISS Deicing Coordinator

Location: Swiss NOC, Ops Center

Contacts: via SWISS NOC Tel +41 44 564 45 03

Organisation:
Standby organisation:
  o no stand-by planned

Duties and competences:
  ➢ representation of SWISS in Snow Committee (Telephone Conference)
  ➢ representation of SWISS in ‘Krisenstab Schnee’
4.8. Meteo
by Andreas Asch, MeteoSwiss / Aeronautical Meteorology

4.8.1. Meteo Briefing

**Location:**
Office MeteoSwiss
Operations Center 1 (OPC 1), Meteo Briefing, ground floor

**Contacts:**
internal: Tel. 6 20 16
external: Tel. 0900 162 737

**Organisation:**
- all year
- 24 hours

**Duties and competences:**
- Continuous monitoring of current weather situation
- Issuing and continuous monitoring of forecasts and other weather information, incl. TAF, SIGMET, Low Level SWC
- Warnings for the aerodrome (incl. Lightning, Wind, Storm, Thunderstorm,...)
- Regular weather briefings to pilots, airlines, airport partners
  - daily briefing at 06.00 LT and 14.30 LT
  - daily telephone conference at 05.45 LT
  - ad hoc weather briefings on request
- Participation at Snow Committee telephone conference
4.8.2. Meteo Observations

**Location:**
Office MeteoSwiss
Observer Station “Oberglatt”, Meteostasse,
Threshold RWY 14/16

**Contacts:**
internal: Tel. 6 20 20
external: no calls

**Organisation:**
- all year
- 24 hours, exception: 0020 UTC METAR is not issued

**Duties and competences:**
- Continuous monitoring of actual weather situation
- Weather observation and dissemination of METAR and MET REPORT (local routine report) every 30 minutes (as of March 2020: AUTO METAR outside airport operational hours = 23:30-05:30Lt)
- Dissemination of SPECIAL (local special report) in case of significant changes in meteorological condition

**Sample of AUTO METAR**

```
LSZG 050620Z AUTO VRB01KT 1900 BR NSC
M03/M03 Q1032=
```
4.9. Skyguide
by Jonas Wobmann, Skyguide

4.9.1. FMP

**Location:**
Skyguide swiss air navigation services ltd
ACC Zürich
Flugsicherungsstrasse 1-5
Postfach 23
8602 Wangen b. Dübendorf

**Contacts:**
Tel. +41 44 801 13 01
Fax. +41 43 931 63 69
FMP Manager: Jonas Wobmann
Tel. +41 43 931 64 08

**Organisation:**
- H24

**Duties and competences:**
- Coordinate slot extensions in phase 1 - 3 with NMOC
- Take part in the snow committee telephone conference
- Coordinate with DC, Zurich Tower and NMOC
- Requests the extension of the STW via NMOC
- Inform DC, Apron Control, Zurich Tower or AO about new STWs and CTOTs
5. Processes and Procedures

5.1. Operational Status of the Airport

by Urs Haldimann, FZAG Deicing Coordination

5.1.1. Deicing on request

- No precipitation, only part of the departing aircraft (less than 50%) require deicing
- No special measures foreseen by ATS
- Slots have to be adhered to
- Start-up clearance granted within the defined time-limits

5.1.2. General Deicing

- In case more than 50% of the traffic require deicing, general deicing shall be activated.
- Status ‘General Deicing’ issued by Deicing Coordination in coordination with ATC/Tower and Apron Control SPVR.
- Status is published in AIMS (headerline)
- Broadcast on DEP ATIS: ‘General Deicing procedure in operation, contact 121.810 for requests’
- Status reflected in the darts system by APRON to provide adequate DPI messages to NMOC.
- Information within AROSA to be updated by Deicing Coordination to reflect Deicing process
- Start-up clearance granted within the defined time-limits

5.1.3. General Deicing with extended Slot Tolerance Window

- Deicing of aircraft is heavily delayed due to high demand and prolonged process time
- Impact on operations due to runway-closures for snow clearing
- Increasing number of flights miss their slots
- Status ‘General Deicing with extended Slot Tolerance Window’ (indicating the extended slot time, e.g. ..of –xx to +xx) is initiated by Deicing Coordination in coordination with Skyguide / Tower and Skyguide / FMP (Flow Management Position) and Apron Control DOS
- Status is published in AIMS (headerline) and further information about extended STW is published on page 387
- Broadcast on DEP ATIS: ‘General Deicing with extended Slot Tolerance Window procedure in operation, contact 121.810 for requests’
- Start-up clearance granted within the defined time-limits

Details of the above procedures to be found in Chapter 10.2 ‘Documents’
5.2. Aircraft Deicing and Anti-icing

by Christian Glauser, Swissport, Head Deicing
and Urs Haldimann, FZAG Deicing Coordination

5.2.1. Deicing Truck Pool

currently not applicable

5.2.2. Areas where Deicing is allowed

Aircraft Deicing is restricted to areas as per map published by the environmental department of Zurich Airport: “Flughafen Zürich AG, Umweltschutz; Regen- und Enteiserabwasserbehandlung am Flughafen Zürich”
5.2.3. Repositioning for Deicing

Aircraft parked on stands/areas where Deicing is not allowed, will have to be repositioned (own power or by tow tractor).

Following procedure should be adhered to in regard to repositioning of the aircraft:
(note: NO Deicing can take place during repositioning on RDP, due Apron Control system compatibility)

Deicing Coordination will liaise with FZAG Resource Dispo regarding an adequate aircraft stand for the De-icing. Once the electronic flight strip for the move/tow is available with darts/DMAN, the crew shall be informed according following phraseology:

(Crew / Deicing Coordination)

<FLT Crew> Deicing Coordination, NJE137T, request de-icing
<DC> NJE137T, Deicing Coordination, copied, repositioning needed for deicing. Call you back.
<FLT Crew>“readback/confirmation”
<DC>NJE137T, you will be deiced on stand <XY>, for repositioning, contact apron 121.755
<FLT Crew>“readback/confirmation”
<DC>NJE137T, correct, after repositioning, report ready for deicing on delivery FRQ (121.930) within TOBT window
<FLT Crew>“readback/confirmation”

5.2.4. Deicing on-stand (Standplatzenteisung)

5.2.4.1. Phraseology to be used on CUT:

(Crew / Deicing Coordination)

<FLT Crew> Deicing Coordination, SWR123, request de-icing
<DC>SWR123, Deicing Coordination, copied, de-icing on-stand. I will dispatch a truck to your position <XY>. Prior de-icing, report ready on Zurich delivery 121.930 within TOBT window
<FLT Crew>readback/Bestätigung

Position:

- deicing on-stand is foreseen:
  - for Customers with Deicing Providers dnata/AAS/Jet Aviation (licenced by airport/FZAG/Zurich Airport to only Deice Onstand)
  - for aircraft which cannot be de-iced on Remote Deicing Pads for technical reasons (e.g. propeller aircraft, F70 / F100 / MD80/90series / B712 (B717))
  - in case of mass restrictions (weight with snow on wings exceeding max. ramp weight)
  - if required due to change of runway configuration on short notice
  - due to technical problems on Remote Deicing Pad
  - to solve nighban problematic and/or minimize impact on granted extension
  - to releave the RDP’s in case of high demand
In case of ICE shedding procedure preventions

In case of underwing DEICING

- the decision about deicing on-stand is with the FZAG Deicing Coordinator

**Conditions:**

- Deicing on-stand will be initiated when
  - passenger boarding is completed and air bridges and stairs are removed.
  - loading of aircraft is completed and all loading devices are removed.
  - Aircraft is at a spot where on-stand DEICING is allowed (repositioning completed)

- Deicing truck will be withdrawn if an aircraft is not ready at the published TOBT

- In case of delayed assignment of deicing trucks the sequencing is according to TOBT

**Procedure:**

- **Deicing on Request:**
  - deicing request to Deicing Coordination
    - by ground staff, handling agent Tel. +41 43 816 7700
    - by crew FREQ 121.810

    **Remark AIMS “I”**

  - available deicing truck allocated according to sequence No.
    **Remark AIMS “ICE”**

  - deicing request cancelled by crew or airline staff
    **Remark AIMS “XXI”**

- **General Deicing**
  - deicing request to Deicing Coordination
    - by ground staff, handling agent Tel. +41 43 816 7700
    - by crew FREQ 121.810

    **Remark AIMS “I”**

  - allocate available deicing truck according sequence No.
    **Remark AIMS “ICE”**

  - deicing request cancelled by crew or airline staff
    **Remark AIMS “XXI”**
Flight Crew information

- Information and notifications may be given in written or verbal communication.
- In case of wing frost prevention only flight crew will be informed about completion (no deicing code).
- After completion of deicing/anti-icing operations the flight crew must be informed of the beginning and end of operation.
- An aircraft shall not be dispatched after a deicing/anti-icing treatment operation until the flight crew has been notified of the type of deicing/anti-icing operation performed (de-/anti-icing code).
- The result of the final inspection by qualified personnel indicating that the aircraft critical parts are free of ice, frost, slush and snow.
  - The deicing/anti-icing codes to allow the flight crew to estimate the holdover time to be expected under the prevailing weather conditions.
    - Deicing/anti-icing codes:
      - The ISO/SAE fluid type (Type I / / Type IV).
      - The concentration of fluid within the fluid/water mixture, expressed as a percentage by volume (ZRH: only Type I fluid).
      - The local time (hours/minutes) at the beginning of the final deicing/anti-icing step (if in written communication including date).
        - Examples:
          - Type I: 40/60 at (date / time) - 40% fluid / 60% water.
          - Type IV: 100 at (date / time) - undiluted Type IV fluid.
    - This notification shall be recorded.
    - The communication of the code to the flight crew confirms that the post deicing/anti-icing check was completed and the aircraft is clean.
      - It shall be communicated whether a one step or two step deicing /anti-icing was performed.
- The flight crew must receive confirmation from ground crew that deicing/anti-icing operations are completed and that all personnel and equipment are clear before reconfiguring or moving the aircraft.

Charging:

Deicing information containing Flight No. / Aircraft Registration, quantity of hot water sprayed (litres), type and quantity of fluids sprayed (litres) is available c/o Swissport BZRS/ Deicing (or dnata or Jet Aviation) and can be requested according individual agreement.
5.2.5. Deicing on Remote Deicing Pads (RDP)

5.2.5.1. Locations of RDPs

Location of Remote Deicing Pad’s at LSZH

- RWY16 / 34 / 10 (or exceptionally for RWY 28/32)
  - Remote Deicing Pad
  - F1 / F2 / F3
  - 121.635

- RWY28, 32, 34 or 10
  - Remote Deicing Pad
  - C1 / C2 / C3
  - 121.640
### 5.2.5.2. Set-up of RDPs

<table>
<thead>
<tr>
<th>Take-off RWY</th>
<th>Remote Deicing Pad</th>
<th>Site Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>De-icing Pad Coordinator&lt;br&gt;FREQ 121.635 MHz&lt;br&gt;De-icing lanes F1 / F2 / F3&lt;br&gt;To commence de-icing, ACFT has to stop at the stop position (marked and yellow lighted) located to the left of the de-icing lane.&lt;br&gt;REF: LSZH AD 2.9</td>
<td><img src="image1.png" alt="Diagram" /></td>
</tr>
<tr>
<td>28</td>
<td>De-icing Pad Coordinator&lt;br&gt;FREQ 121.640 MHz&lt;br&gt;De-icing lanes C1 / C2 / C3&lt;br&gt;To commence de-icing, ACFT has to stop at the stop position (marked and yellow lighted) located to the left of the de-icing lane.&lt;br&gt;REF: LSZH AD 2.9</td>
<td><img src="image2.png" alt="Diagram" /></td>
</tr>
<tr>
<td>10</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

**Procedure:**

- **Deicing on Request:**
  - deicing request to the Deicing Coordinator
    - by ground staff or handling agent<br>by Tel. +41 43 816 7700<br>or<br>by FREQ 121.810
  - information entered in AIMS

**Remark AIMS “RIC”** for remote deicing
General Deicing

- deicing request to the Deicing Coordinator
- information entered in AIMS

Remark AIMS “RIC” for remote deicing

Conditions:

- aircraft will be cleared to taxi to RDP when ready
- applicable RDP assigned in function of take-off runway

5.2.5.2.1. Communication on the RDP (no truck exchange; same provider)

- the RDP Coordinator is contacted by the crew upon arrival on the deicing location on the assigned RDP-frequency

- Communication via wireless or trunk radio system:

<table>
<thead>
<tr>
<th>Event</th>
<th>Crew ⇒ PAD Coordinator via VHF</th>
<th>PAD Coordinator ⇒ Crew via VHF</th>
<th>PAD Coordinator ⇒ SWP Trucks / Radio (Funk)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aircraft taxies on Deicing lane</td>
<td></td>
<td></td>
<td>Auf Lane XY rollt XY 123</td>
</tr>
<tr>
<td>PAD Coordinator: activates “red light” on AIMS-Entrymask</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAD Coordinator, XY 123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>confirm parking brakes set, aircraft configured and ready for deicing</td>
<td></td>
<td>XY 123, please adjust position to the yellow stop bar, report when ready, parking brakes set and aircraft configured</td>
<td></td>
</tr>
<tr>
<td>XY 123</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XY 123, we would apply a (1 or 2) step procedure (1) xx % Typ I Fluid, xx % Hot Water – (2) first step</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Issue 1.0 / Revision 18 5-11 30.10.2019
<table>
<thead>
<tr>
<th>confirm treatment / or copied XY 123</th>
<th>xx % Typ I Fluid, xx % Hot Water, second step 100 % Typ IV Fluid</th>
<th>Lane XY kann mit dem Deicing beginnen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trucks start with treatment — only after correct read back by flight deck, Deicing may start</td>
<td></td>
<td></td>
</tr>
<tr>
<td>As soon as Deicing of tail starts, push „yellow“ on AIMS-Entrymask;</td>
<td></td>
<td>Lane XY Deicing ist been-det Lane ist safe bzw. Fahrzeuge sind safe</td>
</tr>
<tr>
<td></td>
<td>deicing - XY 123</td>
<td></td>
</tr>
<tr>
<td>go ahead XY 123</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAD Coordinator activates “green light” on AIMS-Entrymask</td>
<td>XY 123, deicing is completed, start time xxxx localtime, ( 2 ) start time second step xxxx localtime, post deicing check is completed, you are clear of trucks and for further taxi contact Apron 121.855 bye bye</td>
<td></td>
</tr>
<tr>
<td>Readback – XY 123</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trucks follow the taxi-out aircraft and position themselves on the “Hold Position” of the respective lane</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2.5.2.2. **Removal of local area contamination (ROLAC):**

When no precipitation is falling or expected, a “local area” deicing may be carried out under the below mentioned or similar conditions.

In some cases a full or complete deicing is not necessary. When the presence of frost and/or ice is limited to localised areas on the surfaces of the aeroplane and no holdover time is likely to be required, only the contaminated areas will require treatment.
This type of contamination will generally be found on the wing and/or stabilizer leading edges or in patches on the wing and/or stabilizer upper surfaces.

**Flight Crew information**

- information and notifications may be given in written or verbal communication
- the flight crew must be informed of the beginning and after completion of deicing/anti-icing operations (for Local Area Deicing only see page 5-11)
- an aircraft shall not be dispatched after a deicing/anti-icing treatment operation until the flight crew has been notified of the type of deicing/anti-icing operation performed:
  - the result of the final inspection by qualified personnel indicating that the aircraft critical parts are free of ice, frost, slush and snow
  - the **deicing/anti-icing codes** to allow the flight crew to estimate the holdover time to be expected under the prevailing weather conditions
    - deicing/anti-icing codes:
      - the ISO/SAE fluid type (Type I / Type IV)
      - the concentration of fluid within the fluid/water mixture, expressed as a percentage by volume (ZRH: only Type I fluid)
      - the local time (hours/minutes) at the beginning of the final deicing/anti-icing step (in written communication including date)
        *Examples:*
        - Type I 40/60 at (date / time) - 40% fluid / 60% water
        - Type IV 100 at (date / time) - undiluted Type IV fluid
    - this notification shall be recorded
    - the communication of the code to the flight crew confirms that the post deicing /anti-icing check was completed and the aircraft is clean
    - it shall be communicated whether a one step or two step deicing/anti-icing was performed
  - The flight crew must receive confirmation from ground crew/pad coordinator that deicing/anti-icing operations are completed and that all personnel and equipment are clear before reconfiguring or moving the aircraft

**Charging:**

Deicing information containing Flight No. / Aircraft Registration, quantity of hot water sprayed (litres), type and quantity of fluids sprayed (litres) is available c/o Swissport BZRT/Deicing (or AAS/Nordic Aero Deicing Unit) and can be requested according individual agreement.
Note:

Deicing of M11 / DC10 on RDPs:

engine # 2 must be shut down if fuselage has to be de-iced

5.2.5.2.3. Swiss/EDW A330 Engine Ice Shedding Prevention:
Mainly used with conditions of Freezing Fog (FZFG) to avoid engine damage, a procedure which was introduced in ZRH (Airbus requirement) as of January 2019.

With conditions of FZFG and a cumulative taxi-time of more than 45 minutes, the Cockpit crew will contact Deicing Coordination as early as possible, ideally latest 30 minutes before STD/TOBT, to initiate the “Ice Shedding Prevention” process.

Following phraseology shall be used:
(Crew / Deicing Coordination)

*Cockpit Crew: “SWISS 123, STAND E47, A330 ICE SHEDDING PREVENTION, REQUEST DE-ICING”*

*De-Icing Coordination: "SWISS 123, A330 ICE SHEDDING PREVENTION, REQUIRED; AIRCRAFT FORESEEN FOR ON STAND DE-ICING”*

➤ **The aircraft MUST be Deiced Onstand!** No other procedure/process is valid at ZRH.
5.3. ‘Start-up Process’- information for crews

extract from AIP

5.3.1. Deicing on stand

Rules:

- If DEICING is required, the flight crew shall call “DEICING Coordination” on FREQ 121.810 MHz no later than 15 MIN prior TOBT, prior to departure clearance.
- FLT Crew shall only report “aircraft ready” when all handling activities are completed and within TOBT +/- 5min. before the deicing process starts.

Procedure:

- No earlier than 15 MIN prior TOBT the Flight Crew shall contact “Zurich Delivery” on 121.930 MHz to request the departure clearance.
- FLT Crew shall only report “aircraft ready” to “Zurich Delivery” when all handling activities are completed and within TOBT +/- 5min. and report ready for on stand DEICING
- "Zurich Delivery" transfers ready ACFT to "Zurich Apron". Flight crew will be instructed to stand by "Zurich Apron".
- DEICING process on stand
- When de-icing activities are reported to be completed (either DAE set or Crew reports ready to Apron Control) start-up / push-back clearance will be issued by “Zurich Apron” within TSAT +/- 5 minutes

5.3.2. Deicing on Remote Deicing Pad (RDP)

Rules:

- If DEICING is required, the flight crew shall call “DEICING Coordination” on FREQ 121.810 MHz no later than 15 MIN prior TOBT, prior to departure clearance.
- Pilot should report ready to "Zurich Delivery" at TOBT +/- 5 minutes tolerance irrespective of DEICING, pushback vehicle availability and TSAT.

Procedure:

- No earlier than 15 MIN prior TOBT the Flight Crew shall contact “Zurich Delivery” on 121.930 MHz to request the departure clearance.
- FLT Crew shall only report “aircraft ready” to “Zurich Delivery” when all handling activities are completed and within TOBT +/- 5min.
- "Zurich Delivery" transfers ready ACFT to "Zurich Apron". Flight crew will be instructed to stand by "Zurich Apron".
- Start-up / push-back clearance will be issued by “Zurich Apron” within TSAT +/- 5 minutes
- Taxi to the assigned remote deicing pad following instructions given by “Zurich Apron” Reaching the deicing position within the pad, contact the remote deicing pad coordinator FREQ 121.640 MHz (pad Charly) or FREQ 121.635 MHz (pad Foxtrott) when instructed by “Zurich Apron”

- Keep monitoring “Zurich Apron” while DEICING is in progress.

- When the remote deicing process is completed, request “Zurich Apron” to continue taxiing

Remark:

If necessary Marshall can be requested via Zurich Apron 121.855 MHz for taxi-in and precise positioning in the Remote Deicing Pad (valid for Charlie & Foxtrott).
5.3.3. **Pre-Deicing (Vorenteisung)**

Aircraft Pre-Deicing is available, restricted to aircraft stands where Onstand Deicing is allowed.

5.3.3.1. **Reason for Pre-Deicing**

Main driver is departure punctuality.

5.3.3.2. **Decision for Pre-Deicing**

Bilateral agreement between Airline/Customer and Deicing Provider.

5.3.3.3. **Process of Pre-Deicing**

Provider (or Swiss as Hub Carrier) establishes the Pre-Deicing process and hands out a copy to Head Deicing Coordination FZAG.

Following process steps must be part of the document:

- Data field “DRM” (Deicing Remark): “VOR” (AIMS code for Pre-Deicing) data entry in FZAG AODB, with correct and accurate time stamp by Provider (manual update or by data link), on corresponding flight number/flight ID, Deicing Truck
- Inclusion of those flights on monthly summary with Fluid/Hot Water data

5.3.3.4. **Sample of manual update in AIMS**

1) Open flight mask:

2) Search for corresponding Handler on top of page; then activate available trucks:
3) Open flight mask (by double click on flight – previous picture)

4) Enter Deicing remark (VOR)

5) Enter Truck (drop down choice)

6) Enter Deicing Start Time (will accept only 10 Min. backwards from current time)

7) After completion: enter Deicing End Time

5.3.3.5. Cleaning of aircraft stand after Pre-Deicing
Aircraft stand is cleaned as per standard procedures for Onstand Deicing, once the aircraft has left the parking position.
5.4. Runway Conditions / Runway Reports

by Jürg R. Suter, FZAG Airport Manager

5.4.1. Position

- The conditions of the movement area shall be monitored. The information shall be kept up to date and changes in conditions reported without delay.

- The requirement for measuring the runway friction coefficient under winter conditions must be determined by the Airport Authority (Airport Manager).

- Following conditions will be published:
  - dry
  - damp
  - wet
  - rime and frost covered
  - dry snow
  - wet snow
  - slush
  - ice
  - compacted or rolled snow
  - frozen ruts or ridges

- Estimated surface friction / State of the Runway:
Measurements will be carried out by Skiddometer BV-11 (SKL) trailer.

Two devices are available.

5.4.2. Procedure

- closing of runways/taxiways in accordance with Skyguide Tower/Airport Steering/Airfield Maintenance.
- order for cleaning to Airfield Maintenance.
- supervise the cleaning-process.
- determine the runway/taxiway conditions after cleaning.
- publish Runway Report / State of the runway as part of METAR / SNOWTAM.
- reopening of runways/taxiways.
5.5. Fluids

5.5.1. Specifications
by Christian Glauser, Swissport Head Aircraft De- / Anti Icing

5.5.1.1. SAE / ISO Type I Deicing/Anti-icing Fluid

Product Name: Kilfrost DF Plus

Description: Aircraft de-/anti-icing fluid, type I.
Complies with specifications ISO 11075 and AMS 144.

Supplied by:
Kilfrost Limited
Albion Works
Haltwhistle
Northumberland
NE49 0HJ
ENGLAND
Telephone: (01434) 320332
e-mail: kilfrost.haltwhistle@virgin.net

5.5.1.2. SAE Type IV Deicing/Anti-icing Fluid

Product Name: Kilfrost ABC-S Plus

Description: Aircraft de-/anti-icing fluid, type IV.
Complies with specification ISO 11078 and AMS 1428.

Supplied by:
Kilfrost Limited
Albion Works
Haltwhistle
Northumberland
NE49 0HJ
ENGLAND
Telephone: (01434) 320332
e-mail: kilfrost.haltwhistle@virgin.net
Note (by Emanuel Fleuti, FZAG Head Environmental Protection)

Any changes of deicing fluid (type or provider) or any changes with influences on quantity of fluid used or composition of fluid have to be approved by authorities (UVEK – Bundesamt für Umwelt, Verkehr, Energie und Kommunikation)

5.5.2. Holdover Times

For Holdover Time Tables refer to publications from FAA and Transport Canada.

5.5.3. Stock-keeping

by Christian Glauser, Swissport, Head Aircraft De- / Anti Icing

5.5.3.1. at Zurich Airport

- tank farm V4 (next to Ops Center)
  - fluid type I
  - 2 tanks 50’000 litres each
  - fluid type IV
  - 2 tanks 50’000 litres each
  - hot water 80ºC
  - 3 tanks 10’000 litres each

- tank farm ‘Bereitschaftszentrum’
  - fluid type I
  - 2 tanks 40’000 litres each
  - fluid type IV
  - 2 tanks 40’000 litres each
  - hot water 80ºC
  - 4 tanks 30’000 litres each

- refill station RDP Foxtrott’
  - fluid type I
  - 1 tank 20’000 litres each
  - fluid type IV
  - 1 tank 20’000 litres each
  - hot water 80ºC
  - from ‘Bereitschaftszentrum’ by pipeline

- refill station RDP Charlie’
  - fluid type I
  - 1 tank 20’000 litres each
  - fluid type IV
  - 1 tank 20’000 litres each
  - hot water 80ºC
  - from ‘Bereitschaftszentrum’ by pipeline
5.5.3.2. outside Zurich Airport (Münchwilen AG/Birrfeld) Transport:

by Bäumle Transport AG“ Bertschi AG

- covered by SLA between Swissport and provider of fluid

- delivery per day / date first delivery max 3 hours after ordering of each fluid type
  
  any further container again within 3 hours after ordering

  valid for whatsoever fluid 1 container = 23’000lt or 26’000lt

- can be repeated daily (including Saturdays, Sundays and Holidays)

5.5.3.3. Maintenance and trouble shooting of installations at Zurich

- FZAG +41 43 816 21 12
5.6. Winterdienst Flächenreinigung
by Durs Tschanz, FZAG Airfield Maintenance

5.6.1. Winterdienst Flächenunterhalt

Standort: Werkhofzentrale, Airfield Maintenance Werkhof W1

Betriebsaufnahme:
- Schneeräum- / Enteisereinsätze auf Flugbetriebsflächen veranlasst die Airport Authority in dem Zeitpunkt wo festgestellt wird, dass in nächster Zeit die Betriebssicherheit nicht mehr gewährleistet werden kann.
- Schneeräum - und Streueinsätze veranlasst die FLUSIPO oder Airport Authority in dem Zeitpunkt wo sie feststellt, dass die Verkehrssicherheit nicht mehr gewährleistet werden kann.

Aktivierung:
Erfolgt durch den diensthabenden Duty Manager- / Polizei Einsatzzentrale Flughafen
- als definitives Aufgebot
- prophylaktisch, auf Grund der unmittelbar bevorstehenden Wetterlage

Aufgaben und Kompetenzen:
- Leitung und Planung des Winterdienstes
- Ob und wann, was geräumt wird, entscheidet die Einsatzorganisation resp. der Airport Manager.
- Sicherstellen der Betriebssicherheit des Flughafens bei winterlichen Verhältnissen
- Wie und womit geräumt wird, entscheidet der Einsatzleiter resp. der Koordinator des Airfield Maintenance.
- Leitung der Winterdiensteinsätze bei extremen und ausserordentlichen Verhältnissen
- Überwachung der Arbeitsabläufe während Winterdiensteinsätzen
Zusammensetzung / Organisation:

Arbeits Snow-Committee (Praktisch)

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport Authority, FZAG</td>
<td>• 043 816 21 11</td>
</tr>
</tbody>
</table>
| Airfield Maintenance, FZAG Koordinatoren | • Hp. Moll 6 21 36, 044 481 47 62  
  • D. Tschanz 6 38 09, 043 255 60 83  
  • R. Meier 6 37 37, 056 225 27 49  
  • U. Kempf 6 21 37, 052 337 38 32 |
| Airport Steering, FZAG                 | • 043 816 77 44                          |
| Deicing Coordination                   | • 043 816 77 00                          |
| Apron Control, FZAG                    | • 043 816 37 20                          |
| Network Operations Control Swiss       | • 044 564 45 03                          |
| Flugsicherung                          | • 043 931 69 61                          |
## Planungs Snow Committee

<table>
<thead>
<tr>
<th>Role</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport Authority, FZAG</td>
<td>• 043 816 21 11</td>
</tr>
<tr>
<td>Chef Winterdienst, FZAG</td>
<td>• 043 816 21 36</td>
</tr>
<tr>
<td>DEICING Coordination</td>
<td>• 043 816 77 00</td>
</tr>
<tr>
<td>Apron Control, FZAG</td>
<td>• 043 816 37 20</td>
</tr>
<tr>
<td>skyguide</td>
<td>• 043 816 39 01</td>
</tr>
<tr>
<td>Network Operations Control Swiss</td>
<td>• 044 564 45 03</td>
</tr>
<tr>
<td>Handling</td>
<td>• intern 2 62 53</td>
</tr>
<tr>
<td></td>
<td>• intern 6 52 02</td>
</tr>
<tr>
<td>AOC</td>
<td></td>
</tr>
</tbody>
</table>
Organigramm Winterdienst:

Aviation Airfield Maintenance

Koordinatoren Winterdienst → Zentralisten Winterdienst

Rapide

Einsatzleiter

Rapid
Platten
Rollwege

Einsatzleiter

Werkstatt
Garage
Vereinigung

Einsatzleiter

Gruppe A
Platten
Rollwege

Einsatzleiter

Gruppe C
Platten
Rollwege

Einsatzleiter

Gruppe B
Platten
Rollwege

Einsatzleiter

Gruppe I
Einsiebung
Platten
Rollwege

Vorfeld

Teamleiter

Gruppe II
Rollwege

Vorfeld

Einsatzleiter

Gruppe R
Rollwege

Vorfeld

Einsatzleiter

Strassen / Parkplätze

Koordinator

Einsatzleiter

Grau E
Str. PP
Gleiswege

Grau F
Strasse

Grau D
Vorfeld

Grau C
Vorfeld

Grau B
Vorfeld

Grau A
Vorfeld

Grau D
Vorfeld

Grau C
Vorfeld
Einsatzgebiete:

5.6.2. Einsatzgebiet Pisten (Gruppen A, B, C)
5.6.3. Einsatzgebiet Vorfeld / Werft (A, B, Trax, Schneeverlad)
5.6.4. Einsatzgebiet Vorfeld / Werft / Dock E (Schneewälle / Deponien)
### 5.6.5. Fahrzeuge

#### 5.6.5.1. Airside

<table>
<thead>
<tr>
<th><strong>Gruppe Rolllinien</strong></th>
<th><strong>Gruppe I (Enteisung)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Jetbroom</td>
<td>4 Enteiser gross</td>
</tr>
<tr>
<td>1 Enteiser mit Vorbaübürste</td>
<td>2 Feststoff Enteiser für Hakenfahrzeug</td>
</tr>
<tr>
<td></td>
<td>1 Multi-Enteiser gross mit Bürste (Apronstrassen)</td>
</tr>
<tr>
<td></td>
<td>3 Multi-Enteiser mittel mit Bürste</td>
</tr>
<tr>
<td></td>
<td>2 Pony mit Vorbaübürste</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gruppe A</strong></th>
<th><strong>Gruppe B</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Jetbroom breit</td>
<td>7 Jetbroom breit</td>
</tr>
<tr>
<td>2 LKW mit Pflug</td>
<td>2 LKW mit Pflug</td>
</tr>
<tr>
<td>1 Schleuder Overaasen</td>
<td>1 Schleuder Overaasen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gruppe C</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Jetbroom</td>
</tr>
<tr>
<td>2 Einzelpflug (Traktoren)</td>
</tr>
<tr>
<td>1 Schleuder Overaasen</td>
</tr>
<tr>
<td>1 Trax (Schneeschild)</td>
</tr>
<tr>
<td>1 Verladefräse Supra 4000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gruppe Schneeverlad</strong></th>
<th><strong>Gruppe Trax</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Verladefräsen Supra 3000</td>
<td>2 Trax (Schneeschild)</td>
</tr>
<tr>
<td>1 Verladefräse Supra 4000</td>
<td>1 Trax Reserve (Schneeschürger)</td>
</tr>
<tr>
<td>32 LKW</td>
<td>1 Radlader</td>
</tr>
</tbody>
</table>
5.6.5.2. Landside

**Gruppe F**

2 LKW mit Pflug und Streuer
5 Traktoren mit Pflug und Streuer
2 Kleintraktoren
2 Pony mit Pflug und Streuer
2 Pickup Bus (Handarbeit Treppen)
3 LKW
1 Radlader

Alle Gruppen werden nach Bedarf eingesetzt.

Jeder Gruppe steht ein Einsatz- / Teamleiter vor.
5.6.6.  Räumprinzip Pisten

5.6.6.1.  Pistenräumung als Standard mit einer Gruppe
5.6.6.2. Pistenräumung (Doppelräumung) mit zwei Gruppen
5.6.7. Apron Cleaning with Snow (> 5cm)

As of Winter 2015/16 a new “Prozessanweisung” (directive) (Weisung 2.00315) has been issued, defining the responsibilities of every party involved in the process of “snow cleaning of apron”.

---

1. Schneeräumung in Zusammenarbeit mit Partnerfirmen (>5cm Schnee)

1.1 Ziel und Zweck Vorfeldräumung bei Schnee

Diese Prozessanweisung beschreibt die Aufgaben und Verantwortlichkeiten seitens FZAG und der Partnerfirmen Swissport, dina, und AAS, welche Abfertigungsmaterial aufnahme Standplätzen benutzen oder zwischenlagern. Im Falle einer Vorfeldräumung bei Schnee oder Flächensaneisung. Der Prozess soll eine geplante Vorfeldräumung bei Schnee oder Flächensaneisung, koordiniert und effizient durchführen lassen.

---
4.1 (Räumung – während Flugbetriebszeiten)

<table>
<thead>
<tr>
<th>Daten</th>
<th>Prozessablauf</th>
<th>Verantw.</th>
<th>Tätigkeit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeit: offen</td>
<td>Bedarfsmeldung durch GHA/OOFS/Reue t.</td>
<td>GHA</td>
<td>Anfragen der Bewirts. von Standplatzbereichen während Zeitersterb</td>
</tr>
<tr>
<td></td>
<td>durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
<tr>
<td></td>
<td>Telefonische Rückmeldung durch GHA/SNOW/Check In bei GHA</td>
<td>GHA</td>
<td>Telefonische Rückmeldung</td>
</tr>
</tbody>
</table>
| | Telefonische Rückmeldun...
5.7. Meteo
   by Andreas Asch, MeteoSwiss

5.7.1. Metar (actual weather information)

The METAR is issued every 30min by MeteoSchweiz.

Setup of the message:
   a. 4 – letter (ICAO-) airport code
   b. observation time
   c. wind direction in degrees / wind speed in knots
   d. horizontal visibility in meters
   e. weather phenomena (e.g. RA = rain, SN = snow, SHSN = showers of snow, FG = fog)
   f. cloud amount (FEW, SCT, BKN, OVC) and cloud base in 100 feet
   g. temperature / dew point in degrees celsius
   h. atmospheric pressure in hectopascal (hPa)
   i. trend; valid for the next two hours

Example:

<table>
<thead>
<tr>
<th>a</th>
<th>b</th>
<th>c</th>
<th>d</th>
<th>e</th>
<th>f</th>
<th>g</th>
<th>h</th>
<th>i</th>
</tr>
</thead>
<tbody>
<tr>
<td>LSZH</td>
<td>280920Z</td>
<td>27005KT</td>
<td>1800 BR</td>
<td>SCT003</td>
<td>BKN004</td>
<td>06/06</td>
<td>Q1017 BECMG</td>
<td>3000 BKN005</td>
</tr>
</tbody>
</table>

In cases with reduced visibility the so called ‘Runway Visual Range RVR’, which depends on the visibility, background luminance and runway lights, is included in the Metar:

   j. runway considered
   k. RVR – runway visual range in meters

Example:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>j</th>
<th>k</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EDDM 290850Z 20002KT 1000</td>
<td>R26R/P1500N R26L/1100VP1500U</td>
<td>RA BR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEW001 SCT002 BKN005 06/06</td>
<td>Q1015 BECMG 3000 SCT005 OVC008</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If necessary a “State of the runway” is added to the METAR. The “State of the runway” is issued by the Airport Manager and forwarded to MeteoSchweiz for integration in the next following METAR. For the decoding of “State of the runway” see Chapter 9.2.1

Example:

“State of the runway”

EFRO 280950Z 04009KT CAVOK M19/M21 Q1034 03890532

03 = Runway03 / 8 = compact or rolled snow / 9 = coverage > 51%
05 = depth of deposit / 32 = friction coefficient

According to the European air navigation plan no SPECI are issued in METAR code form since every 30 minutes a METAR is issued. Special reports are issued as local report/QAM.
5.7.2.  TAF (terminal area forecast)

Two types of TAF with different validities are disseminated. Not all airports issue both types of TAF.

Since November 2008  9-hr TAF is NOT issued any more for most European airports:

5.7.2.1.  9 hr TAF

<table>
<thead>
<tr>
<th>Time</th>
<th>Validity</th>
<th>Disseminated time</th>
</tr>
</thead>
<tbody>
<tr>
<td>0110</td>
<td>valid 01 UTC till 10 UTC</td>
<td>disseminated at 00 UTC</td>
</tr>
<tr>
<td>0413</td>
<td>valid 04 UTC till 13 UTC</td>
<td>disseminated at 03 UTC</td>
</tr>
<tr>
<td>0716</td>
<td>valid 07 UTC till 16 UTC</td>
<td>disseminated at 06 UTC</td>
</tr>
<tr>
<td>1019</td>
<td>valid 10 UTC till 19 UTC</td>
<td>disseminated at 09 UTC</td>
</tr>
<tr>
<td>1322</td>
<td>valid 13 UTC till 22 UTC</td>
<td>disseminated at 12 UTC</td>
</tr>
<tr>
<td>1601</td>
<td>valid 16 UTC till 01 UTC</td>
<td>disseminated at 15 UTC</td>
</tr>
<tr>
<td>1904</td>
<td>valid 19 UTC till 04 UTC</td>
<td>disseminated at 18 UTC</td>
</tr>
<tr>
<td>2207</td>
<td>valid 22 UTC till 07 UTC</td>
<td>disseminated at 21 UTC</td>
</tr>
</tbody>
</table>

Setup of the message:

   l. 4–letter (ICAO-) airport code
   m. time issued
   n. validity – date / begin time / end time
   o. wind direction in degrees / wind speed in knots
   p. horizontal visibility in meters
   q. weather phenomena  (e.g. RA = rain, SN = snow, SHSN = showers of snow, fg = fog)
   r. cloud amount (FEW, SCT, BKN, OVC) and cloud base in 100 feet
   s. changes
   t. time period of change

Example:

TAF GMMN 280900Z 281019 VRB03KT 2500 BR BKN004 BECMG 1013 5000 SCT006 BKN010 BECMG 1316 8000 SCT015 BKN060
The 30 hr TAF is issued every 3 hrs, covering a time period of the next 30 hours. For ZRH following validity times are published: 00/03/06/09/12/15/18/21 UTC

5.7.2.2. 30 hr TAF

Example:

TAF LSZH 111125Z 1112/1218 20003KT 9999 FEW020 SCT180 TX16/1114Z TN09/1206Z
1 I

Setup of the message:

A. 4-letter (ICAO-) airport code
B. observation date/time (11th; 11:25 UTC)
C. validity time frame // date/time (from 11th, 12 UTC / until 12th 18 UTC)
D. wind direction in degrees / wind speed in knots
E. horizontal visibility in meters
F. cloud amount (FEW, SCT, BKN, OVC) and cloud base in 100 ft
G. TX = Temperature (highest for day) in centigrade/day & time UTC e.g. 11th 14 UTC
H. TN = Temperature (lowest for night) in centigrade/day & time UTC e.g. 12th 08 UTC
I. TX = Temperature (highest for next day) in centigrade/day & time
J. weather codes as used for METAR (Decoding see 5.7.1)

TAF AMD: The TAF AMD is issued when a major change is forecasted for the validity period of the TAF.
TAF COR: TAF COR is issued when a formal error needs to be corrected.
CNL: When the forecast is cancelled (for example due to the non-availability of observations).

Examples:
TAF AMD LSZH 310300 310413 43015KT ...
5.7.3. Most common abbreviations used in weather reports and forecasts during winter operations:

BECMG    becoming  BECMG 1418  change of MET-Conditions between 14 and 18 UTC
TEMPO    temporary  TEMPO 1214  temporary fluctuations of MET-Conditions
PROB     probability PROB40  probability of 40% (placed before TEMPO)
FM       from  FM 1215  change of MET-Conditions from 12.15 UTC
TL       till  TL 1305  change of MET-Conditions until 13.05 UTC
AT       at  AT 1410  change of MET-Conditions at 14.10 UTC
NOSIG    no significant changes forecasted for the next 2 hours

Wind:
VRB      variable wind direction (wind speed ≤ 3 KT)

CAVOK    Ceiling And Visibility OK
replaces visibility, present weather and clouds if the following criteria are met:
-> Meteorological visibility 10km or more
-> No clouds below 5000ft or below Minimum Sector altitude if higher than 5000ft
   (for LSZH the MSA is 8000ft AGL)
-> No Cumulonimbus
-> No significant weather phenomena present

Clouds:
(1 octa equals 1/8)
FEW       few         1-2 octas of sky covered
SCT       scattered   3-4 octas of sky covered
BKN       broken      5-7 octas of sky covered
OVC       overcast    sky fully covered (8 octas)
**Typical weather phenomena during winter time:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-SN</td>
<td>light snow</td>
</tr>
<tr>
<td>SN</td>
<td>moderate snow</td>
</tr>
<tr>
<td>+SN</td>
<td>heavy snow</td>
</tr>
<tr>
<td>SHSN</td>
<td>showers of snow</td>
</tr>
<tr>
<td>-RA</td>
<td>light rain</td>
</tr>
<tr>
<td>RA</td>
<td>moderate rain</td>
</tr>
<tr>
<td>+RA</td>
<td>heavy rain</td>
</tr>
<tr>
<td>SHRA</td>
<td>showers of rain</td>
</tr>
<tr>
<td>RASN</td>
<td>rain with snow</td>
</tr>
<tr>
<td>SNRA</td>
<td>snow with rain</td>
</tr>
<tr>
<td>SHRASN</td>
<td>showers of rain and snow</td>
</tr>
<tr>
<td>TSSN</td>
<td>thunderstorm with snow</td>
</tr>
<tr>
<td>FZDZ</td>
<td>freezing drizzle</td>
</tr>
<tr>
<td>FZRA</td>
<td>freezing rain</td>
</tr>
<tr>
<td>FZFG</td>
<td>freezing fog</td>
</tr>
<tr>
<td>TSGS</td>
<td>thunderstorm with small hail or snow pellets</td>
</tr>
<tr>
<td>PL</td>
<td>ice pellets</td>
</tr>
<tr>
<td>TSGR</td>
<td>thunderstorm with hail</td>
</tr>
<tr>
<td>BLSN</td>
<td>blowing snow (6ft or more above the ground)</td>
</tr>
</tbody>
</table>
DRSN  drifting snow (up to 6 ft above the ground)

FG  fog (only reported if visibility < 1000m except in combination with BC, MI, PR, VC)

MIFG  shallow fog (less than 6 ft)

BCFG  patches of fog (randomly covering the aerodrome)

PRFG  partial fog (substantial part of the aerodrome is covered by fog)

IC  ice crystals in suspension (only reported if visibility is ≤ 5000m)

BR  mist (only reported if 1000m < visibility < 5000m and RH > 75%)

HZ  haze (only reported if 1000m < visibility < 5000m and RH < 75%)

Table with weather phenomena (not all combinations are possible or make sense):

<table>
<thead>
<tr>
<th>Qualifier</th>
<th>Intensity</th>
<th>Descriptor</th>
<th>Weather Phenomenon</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>light MI</td>
<td>shallow</td>
<td>DZ drizzle</td>
<td>FG fog FU smoke PO sand whirls</td>
<td></td>
</tr>
<tr>
<td>moderate BC patches</td>
<td>RA rain</td>
<td>BR mist VA volcanic ash SQ squalls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>heavy PR partial</td>
<td>SN snow</td>
<td>DU dust FC tornado</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC Vicinity DR low drifting</td>
<td>SG sow grains</td>
<td>SA sand SS sandstorm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BL blowing</td>
<td>IC ice crystals</td>
<td>HZ haze DS dust storm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SH showers</td>
<td>PL ice pellets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TS thunderstorm</td>
<td>GR hail</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FZ freezing</td>
<td>GS sow pellets</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. **IT Systems**

6.1. **AIMS (Airport Information and Management System)**

by Toni Bürle, FZAG Airport Steering & Deicing Coordination

**Functions**

- **Airport Information and Management System**
  - Flight numbers
  - Destinations
  - Stand / parking positions
  - Aircraft types / registrations
  - Delays – IATA codes
  - Actual off block / on block timings
  - Deicing provider
  - if applicable:
    - planned deicing procedure: on-stand or remote
    - planned deicing lane on remote deicing pad
    - planned take-off runway

- **Management System for delay information**
  - ETD (estimated departure time) shown on passenger information boards and sent out by telex. Is considered as TOBT
  - Staff ETD (estimated departure time – not shown on passenger information boards and not sent out by telex). Is considered as TOBT
    - NI (next information)

- **Abbreviations used in Winter Operation**
  - I: deicing requested, planned for on-stand deicing
  - SEQ: not used
  - ICE: deicing truck assigned or deicing in progress on-stand
  - VOR: aircraft ’pre-deiced’ (Vorenteisung)
- XXI  deicing request cancelled by crew or airline staff
- RIC  deicing requested, planned for remote deicing
- RIO  not used

**Headerline**

The headerline is used to disseminate important information to all airline staff at the airport. In Winter Operation, it will be used for the following information:

- deicing on request
- general deicing
- general deicing with STW  General Deicing with extended Slot Tolerance Window of -.. to +..
6.2. **darts** *(Departure and Arrival Traffic Management System)*

by Fabian Brühwiler, FZAG Flight Operations, Procedures and Systems

**Functions darts:**

- **A-CDM Plattform**
- **Departure Planning**
  - Off Block Time planning respectively take off planning
  - Considering SID, wake turbulence category and aircraft speed class
  - Consideration of actual stand and T/O runway for taxi time
  - Deicing requests and deicing status received from AIMS
  - Basic adjustment of taxi time if remote deicing is required including approx. deicing time
  - Considering ATC Slots in the departing sequence planning and also consider the extended slot window in the departure sequence planning if special procedure is applied (reference point 10.2)

- **Display of Taxi Strips**
  - Sequencing of departing aircraft
  - Display of arriving, departing and towed aircraft
  - Display of runway crossing status
  - Display of aircraft being actual treated in the remote deicing pad

- **Arrivals**
  - Display of stand allocation

- **Abbreviations**
  - **SOBT** Scheduled Off Block Time
  - **TOBT** Target Off Block Time
  - **TSAT** Target Start Up Approval Time
  - **TTOT** Target Take Off Time
  - **EDIT** Estimated DEICING Time
  - **Abbreviations according A-CDM Manual by Eurocontrol**
Interfaces

- to TRACE ATC-Flightplan, ATC slot, SID, aircraft separation matrix, ...
- to AIMS Flightplan, ELDT / SOBT / TOBT, Deicing status, ...
- to DGS Activating the corresponding dock guidance system for arriving traffic. Displaying departure planning information like TOBT, TSAT, TTOT to the flight crew.

6.3. **sally (Resource Allocation Management System)**

by Marion Asshoff/Ralph Staub, FZAG Resource Dispo / Airport Steering

Functions sally-stand

- stand allocation
  - using same data warehouse as darts

Functions sally-gate:

  - gate allocation
    - using same data warehouse as darts
6.4. **Deicing Tool “AROSA”**

by Philip Gentsch, FZAG, Deputy Head Deicing Coordination

**Functions Prognosis Tool**

- calculation of deicing resources needed for a defined time range with defined standards
- using same data warehouse as AIMS and darts

**Functions Planning Tool:**

- calculation of TSAT / TTOT, ECZT, EEZT based on given parameters (e.g. Taxi time, process time of deicing, Takeoff slot)
- using same data warehouse as AIMS and darts

6.5. **Borrma (Boschung Road and Runway Management)**

by Jürg Suter, FZAG Airport Authority

**Functions:**

- on each of the three runways, three sensors are installed near the centerline, each measuring the ground temperature, surface condition (dry, moist, wet) and freezing temperature.
- along the three runways, measuring stations are transmitting the outside air temperature and precipitation
- the Borrma Software is used to manage data received from these measuring points
- the system is installed in the Airport Authority Duty Office in Terminal A and at the ‘Werkhofzentrale’ next to FZAG Head Office.
- three different alert levels indicate the risk of icing and trend for clear ice building up on the runway
7. Charges

7.1. Aircraft Deicing

by Urs Haldimann, FZAG Deicing Coordination

7.1.1. Charge for the use of the Deicing Facilities
FZAG imposes user fees for the use of the deicing facilities. Details are to be found in the Airport Charges Catalogue.

7.1.2. Party liable to pay charge
The usage of deicing pads/areas will be charged to the ground handling company of the respective airline.

7.2. Removal of snow and ice

The charges for cleaning, clearing and deicing of runways, taxiways and tarmac are included in the landing charges.
8. Crisis Management

8.1. ‘Krisenstab Schnee’

by Urs Haldimann, FZAG Deicing Coordination

Location: any meeting room according to arrangement

Start of Operation:
- continuous moderate to heavy snowfall
- continuous freezing rain
- on request of any member of the ‘Krisenstab Schnee’

Activation:
- by FZAG Winterops Coordinator
- by Airport Authority

Duties and competences:
- Planning and coordination of further operations at ZRH airport during or after moderate to heavy snowfall.
- Coordination of Media information and updates after major irregularities due to snow or ice.
- Planning and coordination of tarmac cleaning after moderate to heavy snowfall.

Formation / Organisation:
- FZAG Winterops Coordinator
- FZAG Airport Manager
- FZAG Terminal Manager
- Representative Apron Control
- Representative SKYGUIDE / Tower
- Representative FZAG Winterdienst
- Representative SWISS
- Representative SWISSPORT
- Representative dnata
- Representative AAS
- Representative Aviapartner
- Representative Meteo
- Representative AOC / Airlines
8.2. Information Media

by Urs Haldimann, Head Deicing Coordination FZAG

General: Whenever delays occur due to aircraft deicing or due to snow removal on runways ‘FZAG Corporate Communications’ have to be informed by Deicing Coordination

Contacts:
- during office hours: Tel. +41 43 816 99 99 – Sonja Zöchling or deputy
- outside office hours: Tel. +41 43 816 99 99
- SWISS Corporate Communications: Tel 0848 773 773 (Hot Line)

Actions by FZAG Corporate Communications:
- with Deicing Coordinator:
  - evaluation of actual situation
  - outlook for next two waves
- immediate information (according standing procedure) of
  - local radio stations
  - newspapers, magazines
  - news agencies

Media Information in case of delays and cancellations

- Rules:
  - Media information by FZAG / SWISS / SKYGUIDE have to be coordinated
  - no company or partner shall be blamed for delays or shortcomings
  - main subject to be pointed out in media information is that in Winter Operation irregularities cannot be avoided but that the airport and all partners try to reduce the impact to a minimum

- SWISS NOC will inform local radio stations at 04:45LT about cancelled SWISS flights.
- During the day, FZAG Corporate Communications will inform Media about the general situation at the airport, including delays and number of cancelled flights of all carriers – no specific flight numbers will be mentioned
- SWISS Corporate Communications will inform about their own operation, including delayed and cancelled SWISS-flights
8.3. Terminal Management FZAG
by Corinne Zingg, FZAG Terminal Management

8.3.1. Duty Terminal Manager

**Location:**
Terminal 1
Office A 3-398

**Contact:**
Tel. +41 43 816 76 00 E-Mail: terminal@zurich-airport.com

**Duties and competences:**

- continuous monitoring of all passenger flow areas and public zones in the terminals, e.g.
  - in front of the terminals (curbside)
  - at the Airport Center and railway station
  - Check-in areas
  - Transit area
  - Passport Control Hall
  - Piers / Gates
  - Arrival Zones

- responsible for an orderly, safe and efficient handling process involving all terminal building users

- responsible for quality control of the entire airport infrastructure and appearance

- responsible for the enforcement of the house regulations (Hausordnung) in cooperation with the Police as well as the Terminal Regulations and various Service Level Agreements

- acts as Duty Terminal Manager (DTM) in case of emergencies/accidents and business interruptions
  - calls the airport crisis organisation if applicable
  - leads and coordinates the airport emergency care team (physical and emotional assistance for uninjured passengers and meeters/greeters)
Organisation:

Duty Terminal Manager
- on duty in the terminals 04:00 – 24:00 LT

Standby Terminal Manager
- standby 24:00 – 04:00 LT (within 1 hour present at airport)
8.3.2. **Restaurants**
- special requests (e.g. extension of opening hours) are handled
  - by Duty Terminal Manager
    Tel +41 43 816 76 00
  - by Duty Manager Airport Steering
    Tel +41 43 816 77 44

8.3.3. **overcrowded terminals**
- contact Duty Terminal Manager  Tel. +41 43 816 76 00
  - for any actions to be taken
    - check-in stop
    - catering delivery
    - seating facilities
    - accommodation

8.3.4. **facilities for stranded passengers**
- contact Duty Terminal Manager  Tel. +41 43 816 76 00
  - to organize accommodation and supervision based on the contingency plan for stranded passengers CP11
9. **Annex**

9.1. **Decoding “State of the runway” / SNOWTAM**

prepared by LIDO FlightNav Zurich

9.1.1. **State of the runway**

<table>
<thead>
<tr>
<th>State of the runway</th>
<th>RDxDR/ERxCRxExBrBr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RDxDR</strong> Runway identification</td>
<td></td>
</tr>
<tr>
<td>R = Letter for runway</td>
<td></td>
</tr>
<tr>
<td>DxDR = Runway heading (for parallel runways L for Left, R for Right or C for Center will be added)</td>
<td></td>
</tr>
<tr>
<td>88 = All runways</td>
<td></td>
</tr>
<tr>
<td>99 = Last report will be repeated</td>
<td></td>
</tr>
<tr>
<td><strong>ER</strong> Runway deposits</td>
<td></td>
</tr>
<tr>
<td>0 = Clear and dry</td>
<td></td>
</tr>
<tr>
<td>1 = Damp</td>
<td></td>
</tr>
<tr>
<td>2 = Wet and water patches</td>
<td></td>
</tr>
<tr>
<td>3 = Rime and frost covered (depth normally &lt;1mm)</td>
<td></td>
</tr>
<tr>
<td>4 = Dry snow</td>
<td></td>
</tr>
<tr>
<td>5 = Wet snow</td>
<td></td>
</tr>
<tr>
<td>6 = Slush</td>
<td></td>
</tr>
<tr>
<td>7 = Ice</td>
<td></td>
</tr>
<tr>
<td>8 = Compacted or rolled snow</td>
<td></td>
</tr>
<tr>
<td>9 = Frozen ruts or ridges</td>
<td></td>
</tr>
<tr>
<td>/ = Type of deposit not reported (e.g. due to runway clearance in progress)</td>
<td></td>
</tr>
<tr>
<td><strong>CR</strong> Extend of runway contamination in % of the runway area</td>
<td></td>
</tr>
<tr>
<td>1 = 10% or less</td>
<td></td>
</tr>
<tr>
<td>2 = 11% to 25%</td>
<td></td>
</tr>
<tr>
<td>5 = 26% to 50%</td>
<td></td>
</tr>
<tr>
<td>9 = above 50%</td>
<td></td>
</tr>
<tr>
<td>/ = Contamination not reported (e.g. due to runway clearance in progress)</td>
<td></td>
</tr>
<tr>
<td><strong>ERxER</strong> Depth of deposit</td>
<td></td>
</tr>
<tr>
<td>00 = less than 1mm</td>
<td></td>
</tr>
<tr>
<td>01-90 = Thickness in mm</td>
<td></td>
</tr>
<tr>
<td>91 = Reserved</td>
<td></td>
</tr>
<tr>
<td>92 = 10cm</td>
<td></td>
</tr>
<tr>
<td>93 = 15cm</td>
<td></td>
</tr>
<tr>
<td>94 = 20cm</td>
<td></td>
</tr>
<tr>
<td>95 = 25cm</td>
<td></td>
</tr>
<tr>
<td>96 = 30cm</td>
<td></td>
</tr>
<tr>
<td>97 = 35cm</td>
<td></td>
</tr>
<tr>
<td>98 = 40cm or more</td>
<td></td>
</tr>
<tr>
<td>99 = Runway non operational due to snow, slush, ice, large drifts or runway clearance in progress</td>
<td></td>
</tr>
<tr>
<td>// = Depths of deposit not of significant (e.g. ice) or not measurable (e.g. on wet runway)</td>
<td></td>
</tr>
<tr>
<td><strong>BRxBR</strong> Friction coefficient/braking action</td>
<td></td>
</tr>
<tr>
<td>00 = Friction coefficient 0.00</td>
<td></td>
</tr>
<tr>
<td>92 = Braking action medium/poor</td>
<td></td>
</tr>
<tr>
<td>Friction Coefficient</td>
<td>Braking Action</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>0.01</td>
<td>Medium</td>
</tr>
<tr>
<td>0.88</td>
<td>Medium/Good</td>
</tr>
<tr>
<td>0.89</td>
<td>Good</td>
</tr>
<tr>
<td>0.90</td>
<td>Reliable</td>
</tr>
<tr>
<td>...</td>
<td>Reserved</td>
</tr>
<tr>
<td>01</td>
<td>Friction Coefficient 0.01</td>
</tr>
<tr>
<td>88</td>
<td>Friction Coefficient 0.88</td>
</tr>
<tr>
<td>90</td>
<td>Friction Coefficient 0.90</td>
</tr>
<tr>
<td>98</td>
<td>Reserved</td>
</tr>
</tbody>
</table>

Specialties

- **RD** = Runway clearance in progress (e.g. R16///99/)
- **R** = Runway not operational (e.g. at nights: R16////////)
- **R88/CLRD** = Condition of the runway normal again (will be reported only once, e.g. R16/CLRD//)
- **R88/CLRD** = All runways normal again
- **R/SNOCLO** = All runways closed due to snow, ice, etc. and/or clearance in progress (and therefore the whole airport)
### SNOWTAM Decoding of snowtam

<table>
<thead>
<tr>
<th>Information on runways, taxiways and apron conditions appended to aerodrome information in the NOTAM / TOI, coded from «a to t»</th>
<th>Example: swh0087 eham 12310520</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a - Aerodrome:</strong> 4- letter ICAO location number</td>
<td>a / eham</td>
</tr>
<tr>
<td><strong>b - Date:</strong> Month/day/time in UTC of completion of measurement</td>
<td>b / 12310520</td>
</tr>
<tr>
<td><strong>c - Runway designator:</strong> In case of parallel runways I or r is added</td>
<td>c / 2r</td>
</tr>
<tr>
<td><strong>d - Cleared runway length:</strong> In meter if less than published length, see «code t» for information on part of runway not cleared</td>
<td>d / 3100</td>
</tr>
<tr>
<td><strong>e - Cleared runway width:</strong> In meter if less than published width, if offset from centerline «l or r» is added.</td>
<td>e / 40</td>
</tr>
</tbody>
</table>

**f - Type of deposit(s):** for each third of runway starting from threshold, with following code (also used to report deposits in code n and r):

| nil = clear and dry | 5 = wet snow |
| 1 = damp | 6 = slush |
| 2 = wet / water patches | 7 = ice |
| 3 = rime or frost | 8 = compact or rolled snow |
| 4 = dry snow | 9 = frozen ruts or ridges |

If more than one type of deposit is present a combination of these numbers are reported. Drifts or other significant characteristics of deposits as well the extent of contaminations in % are reported in code t.

| g - Mean depth of deposit: | g / xx / 3 / 10 |

**h - Braking conditions (FC or BA):** For each third of the runway, followed by the type of measurement equipment.

*Friction coefficient:* Values from «01 to 90», e.g 34 = FC 0.34

*Braking Action:* Values from «1 to 5», e.g. 3 = BA medium; value 9= unreliable, where the measurement is not satisfactory reliable. This maybe the case, when a runway is contaminated (wet snow/slush or loose snow)

FC compared to BA

| 0.20 - 0.25 | poor = 1 |
| 0.26 - 0.29 | medium to poor = 2 |
| 0.30 - 0.35 | medium = 3 |
| 0.36 - 0.39 | medium to good = 4 |
| > 0.40 | good = 5 |

Type of measuring equipment:

| h=high press. tyre, l=low press. tyre: | 5 / 3 / 5 skl |
| brd = Brake- dynometer | sfh = Surface friction tester h |
| dbv = Diagonal brake vehicle | sfl = Surface friction tester l |
| grt = Grip tester | sfh = Saab friction tester |
| jbd = James brake decelerom. | skh = Skiddometer h |
| mum = Mu – meter | skl = Skiddometer l |
| rft = Rwy friction tester | tap = Tapley |

**j - Critical snowbanks:** Location left «l», right «r» or both sides «lr», height in cm and distance from edge of rwy in m.

| j / r80 / 6 | - |
| i65 / 5 | - |
| k120 / 8 | - |

**k - Runway lights:** «Yes» if obscured or covered, followed by left «l», right «r» or both sides «lr» of the runway.

| k / yes r | - |
| k / yes lr | - |

**l - Further clearance of ... / .. length / width in m will be undertaken. If clearance to full dimension is intended «total» is given.**

| l / 3700 / 40 | - |
| l / total | - |

**m - Further clearance will be completed at hour / min UTC, refers to code l.**

| m / 0615 | - |

**n - Deposit on taxiways:** See code t, if no appropriate taxiway is available «no» is reported.

| n / 478 | - |

continued
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>p</strong></td>
<td>TWY snowbanks: If higher than 60 cm «yes» is indicated followed by distance apart in m.</td>
</tr>
<tr>
<td><strong>r</strong></td>
<td>Deposit on apron: See code f, if apron is unusable due to contamination or snow removal «no» is reported.</td>
</tr>
<tr>
<td><strong>s</strong></td>
<td>Next measurement is planned at: month, day, time UTC</td>
</tr>
</tbody>
</table>

**Notes:**
- Metrics units (mm, cm and m) are used but the unit is normally not reported in code d, e, g, j, l and p.
- Some codes may be dropped completely where no information is to be included.
- A new SNOWTAM cancels automatically the previous one for that aerodrome.
- A new SNOWTAM must be issued whenever there is a significant change in conditions (check serial number).
- The maximum validity of a SNOWTAM is 24 hours from the time of observation/measurement.
- Temporary closure of an aerodrome for removal of contamination and its subsequent reopening are additionally notified by a separate NOTAM.
9.2. Holdover Time Tables (HOT)

9.2.1. Holdover Time Tables
For Holdover Time Tables refer to publications from FAA and Transport Canada.

9.2.2. Use of Holdover Time Guidelines for type IV fluid
As a precautionary measure, after all anti-icing operations at ZRH airport with type IV fluid, we recommend to use the generic (worst case) holdover time guidelines for type IV fluids. Swissport strongly recommends not to use the product specific holdover time guidelines, as a timely information to all customers cannot be guaranteed in case the criteria for the use of these guidelines would not be met at some time.
Supply/Delivery at 8 Supply stations

Remote Deicing:
- 240’000 liters Deicing fluid (ADF1/ADF4)
- 120’000 liters Hot Water (80°C)

Deicing Nord V4:
- 200’000 liters Deicing fluid (ADF1/ADF4)
- 30’000 liters Hot Water (80°C)

Auslagerung der Enteisermittel mit Hilfe der Steuerungs- und Leittechnik
zu den Ausgabestellen DELTA, CHARLIE und FOXTROTT
Pumpwerk Zentrale

Visualisierung

Abfüllvorgang der Enteiserfahrzeuge
10.2. Deicing Plan for Zurich Airport

General overview to be found in Chapter 5.1 ‘Operational Status of the Airport’

Official Document written by Toni Habermacher, SKYGUIDE; revised in October 2008 by Jonas Wobmann, FMP Zurich; and issued by FZAG Operations

DEICING PLAN FOR ZURICH AIRPORT

VALID: (yearly) from 15th October until 30th April

Written by: FMP Zurich/ SKYGUIDE

Issued by: FZAG / ZRH Airport Steering
10.2.1. General introduction

A specific procedure has been created to improve the accuracy of the NMOC data and to overcome the problems associated with slot compliance during periods of adverse operating conditions at aerodromes in relation to deicing. This procedure allows greater flexibility to the FMP/TWR giving them the procedures and tools to operate as efficient as possible, taking into account local conditions.

Through the provision of DPIs (incl. data from the Deicing tool) to NMOC, the overall information used as a basis for slot calculation has been improved.

10.2.2. Principle

The deicing plan at Zurich airport is based on three phases, of which each phase represents a further escalation of the corresponding procedures to act on the corresponding situation.

10.2.3. Procedure

The deicing plan consists of the following three phases decided by DC and SPVR TWR:

**PHASE 1 ★: Deicing on request**

*Deicing of Individual Aircraft (<50%)*

Adherence to ATFM slots remains compulsory

- **DC, APRON CONTROL and DEICING PROVIDER shall:**
  - DC in close coordination with deicing providers and Apron Control shall define the deicing time and update the deicing tool AROSA
  - Inform SPVR TWR about actual deicing time
- **FMP shall:**
  - Coordinate possible individual slot extension with NMOC and transmit it to the TWR

**PHASE 2 ★: General Deicing**

*Deicing of the majority of Aircraft (>50%)*

Adherence to ATFM slots or the corresponding extensions remains compulsory

- **DC, APRON CONTROL and SPVR TWR shall:**
  - Coordinate with each other about the activation of General Deicing.
  - Coordinate if general slot extensions are required for the transition period.
- **APRON CONTROL shall:**
- Activate General Deicing within the darts system. With the activation of General Deicing all departing flights will be indicated accordingly within the DPI message to NMOC

- **SPVR TWR shall:**
  - Inform FMP.
  - Start the broadcast "General Deicing procedure in operation, contact 121.810 for requests" on DEP ATIS.

- **FMP shall:**
  - Inform SPVR ACC.
  - Request from SPVR ACC a cancellation of existing sector regulations in lower airspace, which shall be granted whenever possible.
  - Inform NMOC about General Deicing
    1. If requested, request a general slot extension, for the transition period, of 10 minutes for the next 30 minutes (e.g. to clean up the tarmac).

- **DC shall:**
  - In close coordination with deicing providers and SPVR APRON define the deicing time and update the deicing tool AROSA

**Cancellation of General Deicing**

- **DC shall**
  - After consulting SPVR TWR and APRON switch back to Deicing on request.

- **SPVR APRON shall:**
  - Deactivate General Deicing within the darts system. With the backspace to Deicing-on-request, the DPI message to NMOC will be treated accordingly.

- **SPVR TWR shall:**
  - Discontinue the ‘General Deicing procedure in operation’ broadcast on ATIS.
  - Inform FMP about the cancellation of General Deicing.

- **FMP shall:**
  - Inform SPVR ACC.

**PHASE 3 ★: General Deicing with extended Slot Tolerance Window**

When the situation on the airport is no longer controllable or predictable while exhausting the maximum deicing process time due to continuous snowfall, and most flights are missing
their ATFM slots, it is recommended to activate the ‘General Deicing with extended Slot tolerance Window’ procedure.

FMP has the complete overview of the state of adherence to CTOT / ETOT of departing aircraft and how the situation is currently reflected. Therefore FMP shall be part of the CDM\(^1\) together with SPVR TWR, SPVR APRON and DC to decide about an activation of the ‘General Deicing with extended Slot Tolerance Window’ procedure. FMP shall report the current situation with regard to adherence to CTOT/ETOT while DC shall report the predictions of AROSA and the currently used deicing time values.

A snow committee teleconference is usually called in every hour or on request. If the meteorological previsions forecast snow during night and the next morning, such a conference may be called in at 2115 LT to plan the actions for the remainder of the day and the next morning.

Nevertheless ‘General Deicing with extended Slot Tolerance Window’ will be applied only after coordination and analysis on D-Day.

FMP may suggest the activation of the ‘General Deicing with extended Slot Tolerance Window’ procedure and as well the cancellation of the procedure.

**General**

- The Snow Committee is in charge of activating / prolongation / deactivating ‘General Deicing with extended Slot Tolerance Window’
- Once activated, ‘General Deicing with extended Slot Tolerance Window’ shall be kept for at least 1 hour.
- During ‘General Deicing with extended Slot Tolerance Window’ the STW of regulated flights is extended according coordination ranging max. up to -30 to +30 around the CTOT.
- Adherence to ATFM slots considering their extended tolerance window remains compulsory.

**ATTENTION**

Based upon their interpretation, NMOC may deny the extension of the STW.

**Activation of ‘General Deicing with extended Slot Tolerance Window’**

- The Snow Committee shall decide after coordination about the activation of ‘General Deicing with extended Slot Tolerance Window’ including the:
  - foreseen time span (start and end) during which ‘General Deicing with extended Slot Tolerance Window’ is required

---

\(^1\) CDM = Collaborative Decision Making
- the upper and lower part of the tolerance window.
- decision if all or only deicing flights shall be included.

- **FMP shall:**
  - Request via NMOC to
    1. Extend the slot tolerance window for regulated flights departing LSZH according the agreement reached by the snow committee.
    2. Extend the time frame for the STW extension an hourly basis as it can only be entered for clock +1h within the NMOC system.
  - Inform DC/ SPVR APRON/ SPVR TWR in case the request has been denied by NMOC.
  - Forward the information to SPVR TWR and APRON from which point in time onwards the slots are extended to assure the corresponding ATIS broadcast.
  - Initiate with Airport Steering publication in AIMS on page 387 additional information about the extended slot tolerance window procedure
  - Inform SPVR ACC and request cancellation of lower sector regulations;

- **SPVR TWR shall:**
  - Start broadcast: ‘General Deicing with extended Slot Tolerance Window’ procedure in operation, contact 121.810 for requests" on DEP ATIS.
  - Advise staff on duty about the extended STW, and that adherence to it is still required.
  - Enter in TRACE the applicability of the extended STW period in order to reflect the correct extended STW to staff
  - Inform SPVR APRON and FMP if no departures or arrivals are possible, e.g. due to snow clearing.

- **SPVR APRON shall:**
  - Inform staff on duty about the extended tolerance window.

**End of ‘General Deicing with extended Slot Tolerance Window’ / Normal Operation**

In close coordination with each other either FMP, DC, SPVR APRON, or SPVR TWR shall request the End of ‘General Deicing with extended Slot Tolerance Window’. All partner shall agree, as soon as the majority does not require the extended tolerance window anymore. Either through:

- Not further prolonging the agreed period.
- Defining a new end time.

Either way clear communication is required to assure awareness of all parties involved.
DC will define the deicing process time valid after the end of the ‘General Deicing with extended Slot Tolerance Window’.

- **SPVR TWR shall:**
  - Stop the corresponding broadcast on DEP ATIS, and activate the agreed new state of the airport regarding Deicing, at the defined point in time.
  - Advise staff that from a specific point in time standard STWs are applicable again.

- **SPVR APRON shall:**
  - Advise his staff that the from a specific point in time standard STWs are applicable again

- **FMP shall:**
  - Inform SPVR ACC and SPVR APRON Inform Airport Steering in order to adapt information on page 387

### 10.2.4. General duties valid for all phases

- **FMP shall:**
  - Request a Zero-rate regulation for ARR when the airport is closed for more than 30 min.
  - Monitor the slot adherence.

- **TWR und APRON CONTROL:**
  - are free to determine the departure sequence.
  - shall respect the ATC Slot of all flights.
  - Shall coordinate with each other if no departures at all are possible, to assure the inclusion in the DPIs.

- **APRON CONTROL shall:**
  - Input the RWY closure for snow cleaning in the darts system, to calculate adequate TTOT.

### 10.2.5. Procedure for teleconference when requested from NMOC/OPSD

Dial +44 207 904 0070 at the time given by FMP

Dial access code to the conference when instructed: 7299011#

<table>
<thead>
<tr>
<th>Teleconference Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NMOC/OPSD Team leader</strong></td>
</tr>
<tr>
<td>Deicing Coordination LSZH</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>SPVR TWR ZURICH</td>
</tr>
<tr>
<td>FMP ZURICH</td>
</tr>
</tbody>
</table>
5. Deicing

5.1 Most aircraft departing from LSZH are planned for remote deicing

Exceptions:
- Operational requirements at discretion of Deicing Coordinator Zurich Airport
- Customers of Deicing Provider dnata (Deicing Coordination Zurich Airport informs crew if remote de-icing pre-arranged)
- Customers of Deicing Provider Jet Aviation (Deicing Coordination Zurich Airport informs crew if re- mote deicing pre-arranged)
- Customers of DEICING Provider SWP operating propeller aircraft, aircraft requiring underwing DEICING/clear ice check after DEICING/aircraft manufacturers special requirements apply

5.2 Deicing - Status

The deicing status at Zurich airport may be one of the three following:

- Deicing on request
- General Deicing
- General Deicing with extended Slot Tolerance Window

Departure ATIS broadcasts the Deicing status if “General Deicing” or “General Deicing with ex-tended Slot Tolerance Window” is in use.

5.3 Deicing - Procedures

I. If Deicing is required the flight crew shall call “Deicing Coordination” on FREQ 121.810 MHz no later than 15 minutes before TOBT, prior to departure clearance. This call shall be made irrespective of the deicing status. The flight crew will be informed about the deicing location foreseen (on-stand or remote deicing).

II. A-CDM definition according 3.3.2.2 applies.

III. TOBT shall not be adjusted to reflect the DEICING process (spraying time).

5.3.1 Aircraft, de-iced on stand

I. Flight crew shall contact "Zurich Delivery" at TOBT +/-5min and report “aircraft ready” for on stand DEICING.

II. When DEICING activities are completed, standard start-up/push-back and taxi procedure shall be fol- lowed in accordance with chapter 3 § 3.3.2.5

5.3.2 Aircraft, foreseen for remote deicing: Map LSZH AD-2.24.1 – 1 (links to respective page)
- Standard start-up/push-back procedure shall be followed in accordance with chapter 3 § 3.3.2.6 - 3.3.2.7;
- TAX on to the deicing lane as instructed by “Zurich Apron”; and stop at the marked and yellow lighted stop position (“STOP DEICING”) located to the left of the deicing lane for commencement of deicing (REF: LSZH AD 2.9)
- After reaching the deicing stop PSN (“STOP DEICING”) on the deicing lane, contact the pad coordinator when instructed:
  - Pad Charlie FREQ 121.640 MHz
  - Pad Foxtrott FREQ 121.635 MHz
- Pad coordinator may instruct to adjust aircraft position if required.
- After deicing, when released by the pad coordinator, request TAX clearance from "Zurich Apron"

5.3.3. Between 1st November and 31st March it is prohibited to drain the aircraft’s drinking water tanks onto the tarmac.

5.4 Clean Aircraft Concept (CAC)
Clean Aircraft Concept as defined in ICAO Doc 9640 is applied; aircraft are de-iced according to the requirements of SAE AS6285C. Airport Authority can intervene in case of non-adherence.

3.3.2.3 ATC Clearance

No earlier than 15’ prior to TOBT the crew shall contact “ZURICH DELIVERY” to request departure clearance.

3.3.2.4 Aircraft Ready

   Pilot should report ready to "Zurich Delivery" at TOBT +/-5minutes tolerance irrespective of DEICING, pushback vehicle availability and TSAT
10.4. Attachment to the standard Ground Handling Agreement

issued by Swissport

Attachment X
Specification to SGHA item 7.6 Deicing / Anti-Icing

1. PROCEDURES AND USED MATERIALS

- Deicing / Anti-icing Services are carried out by the Supplier according to the procedures specified in Customers De- / Anti-Icing Manual. In absence of a Customer Deicing / Anti-Icing Manual, Swissport’s local standard procedure will apply.

- Only Deicing / Anti-icing Fluids specified in DAM are used

- Additional requests are subject to additional charges.

- Remote resp. Stand Deicing Procedure will be decided and coordinated by centralized Deicing Coordination.
2. RESPONSIBILITIES

2.1 Responsibilities of the Carrier

- The Pilot in Command (PIC) or the authorized representative of the Carrier decides whether Deicing / Anti-icing is required and requests the services.

- The (PIC) is responsible for accepting the aircraft with the performed Deicing / Anti-icing treatment.

Note: The final decision for the airplane rests with the PIC. Therefore, his requests will overrule the judgments of Supplier crews and may include additional instructions.
2.2 Responsibilities of Supplier

- Deicing / Anti-icing is only carried out by trained and qualified personnel. The training includes the procedures specified in the manuals. Applicable training records are available.

- The Supplier is responsible for correct and complete accomplishment of the Deicing / Anti-icing of the airplane according to Paragraph 1, the final inspection and information to the flight crew of the results by means of Deicing / Anti-icing code is carried out in accordance to the manuals.

- By transmitting the Deicing / Anti-icing code to the flight crew, the Supplier confirms that the check after Deicing / Anti-icing is completed and that the aircraft critical parts are free of ice, frost, snow and slush.

- Clear ice- and hands on-checks requested for certain A/C types by an licensed Aircraft Engineer are not part of this agreement and therefore not included.

- The Supplier is responsible for the proper quality of the Deicing / Anti-icing fluid applied to the aircraft surfaces.
10.5. Index of relevant documents issued by partners

10.5.1. SWISSPORT INTERNATIONAL LTD.
De-/Anti-Icing Operations Manual
issued by SWISSPORT INTERNATIONAL LTD.

10.5.2. Airlines
DAM – Deicing / Anti-icing Manuals
issued by different Airlines

10.5.3. Swiss International Airlines
De-/Anti-icing at Zurich Airport (for cockpit crews)
issued by Fleet Chiefs

10.5.4. dnata
Winter manual De-/Anti-icing (for handling organisation)

De-/Anti-icing Procedure Manual (deicing procedures)

10.5.5. Jet Aviation / Allen Groupe
Winter manual De-/Anti-icing (for handling organisation)
11. Glossary

Acceptance Rate

The acceptance rate indicates the number of aircraft planned to land at an airport per hour. The rate may be reduced by ATC according to the prevailing meteorological conditions, runway conditions, available parking positions and for other reasons.

Ad hoc-Deicing

Deicing of a single aircraft not planned in advance and request received on short notice. Reaction time is 60 min outside defined deicing period.

Anti-icing

Precautionary procedure which provides protection against the formation of frost or ice and accumulation of snow or slush on treated surfaces of the aircraft for a limited period of time (holdover time).

ATC Slot

CTOT (calculated take-off time) is issued by Eurocontrol at Brussels as soon as any restriction exists at, arrival airport or on the route of a flight. The slot is valid from CTOT – 5min to CTOT + 10min, i.e. 15 minutes. The calculation is based on TOBT plus taxi-out time.

ATIS ‘Automatic Terminal Information Service’

Weather and operational information for crews
VHF frequency 129.000 MHz
Telephone No. +41 43 / 816 22 95

ATS ‘Air Traffic Services’

Expression covers all services by Air Traffic Control (ATC) and local organisations (e.g. Apron Control by FZAG) which handle the movement of aircraft on ground and in the air.

‘Ausnahme-Situation’ – exceptional situation

‘Ausnahme-Situation’ is an extreme weather situation with major impact on flights and airport operations. Examples:

- intense snowfall
- continuous moderate or heavy snowfall
- Freezing Rain
• persistent runway closure due to wind / runway conditions / technical reasons

Such a situation will lead to cancellations, delays and/or diversions.

**Braking Action / Bremswirkung** *(sorry no translation)*

Qualitative Beurteilung der Reibungscharakteristik eines Pistenzustandes, ausgedrückt in beschreibenden Begriffen wie gut/good, mittel/medium, schlecht/poor.
Gemessene Reibungskoeffizienten (μ) können mittels Korrelationstabellen in Bremswirkung umgewandelt werden.

**Check**

An examination of an item against a relevant standard by a trained and qualified person.

**Clear Ice**

A coating of ice, generally clear and smooth, but with some air pockets. It is formed on exposed objects at or below or slightly above the freezing temperature by freezing of supercooled drizzle, droplets or raindrops.

Clear ice may form on wings if the fuel temperature is below freezing point and the aircraft is subject to precipitation, even with outside temperatures of 15º C or higher.

**CTOT ‘Calculated Take-Off Time’**

Time calculated by Eurocontrol Brussels based on TOBT of a flight plus planned taxi-time. This time considers flight time to restricted points in European airspace (see → ATC Slot)

**Deicing**

Procedure by which frost, ice, snow or slush is removed from an aircraft in order to provide uncontaminated surfaces.

**Deicing on request**

No precipitation, only part of the departing aircraft require deicing.

Change from ‘General Deicing’ to ‘Deicing on request’ initiated at the end of a period with snowfall when most of departing aircraft do not need deicing any more.

**Deicing Period**

The deicing period starts October, 01st and ends April, 30th.
Deicing / Anti-icing Fluid

Deicing fluids are:

- heated water
- heated concentrates or mixtures of TYPE I fluid and water
- heated concentrates or mixtures of TYPE IV fluid and water (not used in ZRH)

Deicing fluid is normally applied heated in order to assure maximum efficiency.

- TYPE I fluid: un-thickened fluid which viscosity is shear independent. Contains a minimum of 80% by weight of glycols. TYPE I fluids give a rather limited holdover time and in precipitation conditions they are preferably used for deicing only.
- TYPE IV fluid: Thickened fluid with a non-Newtonian flow behavior. Contains a minimum of 50% by weight of glycols. Type IV fluid is used anti-icing and is applied pure 100%.

Deicing Trucks

For use on Remote Deicing Pads, in ZRH so called Vestergaard Beta Trucks (10 by Swissport) are used, featuring a closed cabin with a telescopic arm used for spraying.

For On-stand Deicing, in ZRH Swissport uses so called Vestergaard Gamma trucks (equipped with a basket, spraying is done from a lance) and dnata or Vestergaard Trucks with closed cabin. All trucks are equipped with three tanks for ADF Type I / IV / hot water, mixture of ADF Type I with hot water is done on the truck during the spraying action.

Departure Rate

A departure rate may be issued by ATC if any restriction exists for departing traffic.

ETD

Estimated Time of Departure shown to passengers on public information boards and screens in the airport. Is considered as a TOBT.

Staff ETD

ETD published for airport staff only, not shown on public information boards and screens in the airport. Is considered as a TOBT. As soon the flight is ‘closed’ a regular’ ETD is considered in the Departure Control System. SED shall not be used for A-CDM sequencing issues, neither for delayed onstand deicings.

Freezing Fog:

Used to describe the phenomena when fog is present and the air temperature is below 0°C. With freezing fog present during deicing, a two-step (de- and anti-icing) procedure MUST be applied.

Freezing Rain:
Rain that falls through a shallow layer of freezing temperatures at the surface and freezes upon impact to form a coating of glaze upon the ground and on exposed surface. Normally no take-offs allowed during Freezing Rain.

Friction Coefficient / Reibungskoeffizient (sorry no translation)

Der Reibungskoeffizient μ entspricht dem numerischen Verhältnis zwischen Bremskraft und Radlast, bei einem gebremsten Messrad eines Messgerätes, welches mit ca. 15 % der Vor-wärtsgeschwindigkeit geleistet wird (Bremsschlupf).

General Deicing

Most or all departing aircraft require deicing. Status disseminated by ATIS and in AIMS.

Influences of the status ‘General Deicing’:

- Most aircraft will need deicing, crews/airlines/Handling agents have to contact Deicing Coordinator latest 15 Mins. before TOBT.
- special ATS procedures enforced

Holdover Time

Estimated time for which an anti-ice fluid will prevent the formation of frost or ice and the accumulation of snow on the protected surfaces of an aircraft on the ground before commencing take-off roll. The protection ends when commencing the take-off roll and there is no protection from the fluid during the flight.

One step / Two step procedure

one step: is performed with aDn anti-icing fluid. The heated fluid used to de-ice the aircraft remains on aircraft surface to provide limited anti-icing capability.

two step consists of two distinct steps: deicing procedure and anti-icing procedure

On-stand Deicing (Standplatzenteisung)

Aircraft are de-iced on their parking position after loading and boarding is completed.

Pre-Deicing / Vorenteisung (VOR)

An aircraft receives a Pre-Deicing treatment if the corresponding weather forecasts does not forecast any precipitation/freezing fog, until the take-off time.
A two-step procedure (De- & Anti-icing fluid) is applied.

After the end of the process, until the start of any handling activity, a minium dwell time of 60 minutes should be observed.
Remote deicing / Remote Deicing Pad (RDP)

Deicing of aircraft is executed on specially designed and equipped places, so called Remote Deicing Pads. These RDP are located on the way from parking position to the take-off runway.

STD - Scheduled Time of Departure

Departure time of a flight published in the time tables and tickets of the passengers. Is considered as a TOBT

TOBT - Target Off Block Time

Time at which the aircraft is expected to be ready for departure if not coinciding with SOBT – Scheduled Off Block Time. TOBT is set by airline or handling agent. An TOBT is also set if an aircraft is ready to depart but other reasons (such as ATC delay / start-up delay / deicing) delay the departure.

Trunked Radio System

„Betriebsfunksystem‘ at Zurich Airport (Bündelfunk)
12. Distribution

12.1. FZAG
   o O / OG / OF / OM / ON / Airport Authority / Corporate Communications
     Terminal Management

12.2. SR Technics
   o TEMA

12.3. Handling Agents
   o Swissport          Deicing Coordinator
   o dnata              Station Control
   o AAS                Station Control
   o Aviapartner       Dispatch
   o Cargologic        Operations
   o Jet Aviation      Operations
   o Execujet          Operations
   o Cat Air Service   Operations

12.4. Swiss
   o NOC / Ops Engineering / Flight Ops / Quality Assurance
     Ground Operation Switzerland

12.5. Local Carriers
   o Edelweiss          Operations (via AOC)
   o Helvetic           Flight Operations
   o Chair              Flight Operations
   o REGA               Operations

12.6. Airlines
   o AOC
   o Airlines represented at ZRH Airport

12.7. SKYGUIDE
   o Tower
   o FMP – Flow Management

12.8. External
   o BAZL Zürich
   o BAZL Bern
Distribution method:

Email is sent by Head Deicing Coordination to members on contact list "Winter Operation" (update by Head Deicing Coordination; available with Airport Steering/Deicing Coordination -> Outlook -> Kontakte) notifying all members, that the updated manual is available on the Internet

(Link: http://www.zurich-airport.com/business-and-partners/flight-operations/winter-operation-at-zrh/)

No paper edition is sent out anymore since Nov'07.