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INTRODUCTION
THE AIRSIDE SAFETY SURVEY 2013

The ACI annual Airside Safety Survey provides an in-depth and indispensible guide to the airside operations and safety measures of ACI EUROPE member airports. Featuring contributions ranging from regional airports to major international hubs, this survey incorporates practices integral to the operations of every commercial airport, including winter services, friction testing, runway incursion prevention, crash fire rescue procedures, wildlife control, and FOD detection. In order to maintain the highest level of accuracy, responses remain unedited. The submission of each airport highlights its own operational priorities, as well as building a comprehensive picture of the varying conditions and diverse challenges to safety that confront the key players in the European aviation industry.

The multiplicity of issues facing airports is evident in the effects of winter conditions in different locations. Keflavik International Airport, for example, can expect up to 80 days of snowfall a year, while Pula Airport experiences one or two days of snow on average. Similarly, while Lennart Meri Tallinn Airport must prepare for a typical snow depth of 28cm, Split Airport anticipates an average of less than 2cm of snow during the winter period.



INTRODUCTION



INCREASING CAPABILITY

The Airside Safety Survey highlights airports that intend to purchase new equipment or modify existing airside methods, and also plots emerging industry trends. The increasing stringency of airside safety guidelines has seen a number of respondents plan to expand the scope of their safety measures, with a focus on enhancing the capacity and capability of winter services for coming years. Budapest Airport is currently analysing the market for a series of new runway spreaders that spray liquid de-icers. "Budapest Airport has a project to change the technologies of surface de-icing and snow melting, including the changing of chemicals that are used, spreaders and storage technologies as well." Amsterdam Airport Schiphol said: "We started a more selective spraying method more based on runway usage. Plus we are adjusting the spraying vehicles so they use less KAc and this has already led to a reduction of 200,000 litres of KAc."

It is also in the process of acquiring a new runway sprayer for more accurate dosing and less usage of chemicals with better results.

The majority of participating airports expressed a dedication to economic levels of chemical use and employment of environmentally efficient means of maintenance in winter months and all year round. Frankfurt Airport has "installed a GPS based Surface Management System in order to document all activities and gain live operational control over vehicle movements and chemical application. We are also restricted to 25g/m^2 by our Environmental Authority. We also utilise an Ice Early Warning System, friction measuring results and weather forecasts from the German Weather Service to optimise the use of surface de-icing chemicals".

FRICTION INDEXES

The Airside Safety Survey also examines developments in friction testing, and received a mixed reception from respondents on the reliability of friction indexes. Though most were satisfied with the current industry-wide indicators, some voiced concerns. Riga Airport and Brussels Airport were supportive of a global precedent, as was Frankfurt: "An international standard for friction indexes and reporting of such would be invaluable for the Aviation Industry." Stavanger Airport said: "Based on experience, the index is useful and reliable. However the operator must be able to evaluate the significance of the result, based on actual conditions and possible failure of friction tester."

While Airport Joze Pucnik Ljubljana commented: "For some carriers the friction index is relevant just in the case of ice or compacted snow. For slush or standing water, wet snow and dry snow, the measured friction index is for them unreliable."



WILDLIFE DISPERSAL

Control and restriction techniques for birds and wildlife are also covered in the survey, and further demonstrate the different approaches that European airports take in tackling everyday incidents.

At Prague Ruzyne Airport "the main method of bird control is falconry. The airport has employed a group of falconers who protect the movement area with specially trained falcons, hawks and eagles. The method is based not only on the fact that the falconers hunt the wild birds but also on the fact that the birds feel threatened and choose not to remain in the airport area."

Meanwhile, Genève Aéroport utilises weapons such as whistling cartridges (6mm and 9mm), mid-range exploding cartridges (26.5mm), long range silent – then exploding – rockets discharged from revolvers and a fully equipped bird strike prevention vehicle.

Athens International Airport has implemented a number of audio-harassment measures to deter birds, bats, rodents and animals from lingering on airport grounds, including 13 self-made sound devices based on car CD players and installed in airport vehicles, which broadcast distress calls developed in co-operation with university specialists.

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THE AIRSIDE SAFETY SURVEY 2013

ABERDEEN

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Aberdeen Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWYs: 1,949x46m. No shoulders available. Apron area 3,500sqm.

2.2 Landing aids for each RWY (e.g. CAT II): CAT 1 ILS for 16 and 34.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:

a) Training: FOD is part of Basic Airside Safety training that all airside personnel must complete.

b) Inspection by airline, airport, and airplane handling agency personnel: 24/7 patrols by Airside Ops staff. FOD check by ground handler prior to aircraft docking on stand.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Beam sweeper and FOD Boss.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): FOD is a standing agenda on a number of safety forums.

4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? ATC ground frequency.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Enhanced paint markings on 'hot spots'. West side of airfield now has LED stop bars.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: As above.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Basic Airside Safety Training and various safety forums (FLOSPC, Ramp Safety, Incident Prevention Forum). All airport Airside Operations staff undertake enhanced modules and training.

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes. We have Near Miss cards and confidential email addresses.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:

AAL has adopted the 'Long Grass Regime' policy as described in CAP 772, as it is considered the single most effective habitat management technique as a bird deterrent on the airfield. Maintaining long grass is a practical means of deterring many species of birds that are attracted to short grass to rest or feed. Short mown grass makes available an abundant food supply of earthworms and other soil-dwelling invertebrates.

By allowing the grass to grow to a height of 200-250 mm (8-10 inches), resting and feeding birds are denied good visibility, making them feel less secure and more vulnerable to predators. Feeding birds are denied access to the soil and ground surface making it more difficult to locate their invertebrate prey. The deterrent effect of long grass is excellent against gulls, lapwing and golden plovers, but less so against corvids, starlings and pigeons. It is probable that long grass also interferes with walking, landing and take-off for some species.

Grassland management also requires the control of broad-leaved weeds that may provide a source of green food for pigeons, seeds for finches and insects for other species.

The 'long grass regime' places considerable demands on the grass plants themselves and in turn its management. Poor soil quality, inadequate drainage or low nutrient levels all impede grass growth and may make the provision of bird deterrent grass difficult. Management techniques should ensure good conditions exist for grass growth, especially close to the runways and taxiways where the presence of birds is most hazardous, and where stress to the grass from jet blast is greatest. Loose soil in these areas is also a threat to aircraft, when sucked into engine intakes.

In the winter months, driving on the grass will flatten the sward and reduce the deterrent effect of the grass, and may cause rutting, resulting in small areas of standing water. All vehicles should, where possible, drive on hard surface and access tracks. If vehicles must access the grass areas, drivers should go slowly and carefully at all times and under no circumstances spin the wheels.

6.1 Do your staff attend recognised bird control training courses? Yes.

6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Bird Patrol operates 24/7.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Scarecrow digi-scare, Lethal Control shotgun and rifle.

6.4 Do you carry out a bird strike risk assessment?

Yes, done by FERA. AAL's Bird Hazard risk assessment carried out by FERA (Food and Environment Research Agency) is designed to evaluate the current risk with existing bird control measures in place at Aberdeen Airport (i.e. the residual risk). Those species where the residual risk is assessed as level 1 require no further action other than to maintain the current levels of bird hazard management on the airfield. For those species where the residual risk is assessed as level 2, options for risk management should be reviewed. For species that are assessed as level 3, a management action plan will be developed detailing the measures to be taken to bring the level of risk down.

As part of AAL's commitment to continuous improvement through Safety Management Systems, where possible AAL will improve its Bird Hazard Control. The 3 levels of risk identified in this risk assessment will be used to prioritise where action is required, however, Bird Hazard Control for all species frequenting Aberdeen Airport will be reviewed, even those species not included in this risk assessment or where it has been assessed no action is required.

The risk assessment will be reviewed annually, based on additional information available concerning bird strikes, damage levels etc. The action plan will also be reviewed at this time on the basis of the success of work undertaken in the year and any changes in risk categories that have occurred for the different species involved.

As well as the annual review of the residual risk levels, there is a need for a short-term evaluation of changes in risk that may occur due to factors such as seasonal changes, local agricultural activity, works in progress on the airfield etc. To this end, a live risk register will also be maintained, detailing short-term changes in risk levels and their causes, recent bird strikes etc. and the actions taken to control those risks.

6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. The intelligent use of information and profiting from past experience, makes the difference between bird scaring - reacting to events as (or after) they occur - and bird control, where knowledge of the aerodrome avian environment forms the basis of the organisation to counter the hazard. Information is gathered and communicated by record keeping and provision of trend analysis.

Bird Control Log: Central to risk identification is the need for staff to maintain a comprehensive electronic log. The log should provide an accurate record of bird control activities carried out during each shift period. It should be initialled by the Duty Bird Controller at the start for every area that is checked and any activity, dispersal method and result should be recorded including nil activity. Any issues are passed to the succeeding Duty Bird Controller during the hand over process.

The following will be recorded in the Bird log during each shift: Start of shift entry i.e. vehicle/gun/equipment serviceability/sign in; Confirmation the shotgun or pistol has been handed over for safe and suitable use; Weather conditions e.g. wind, precipitation and cloud coverage; A summary of the bird activity and bird control duties throughout each shift period; Diversions to other tasks that affected bird control capability (escorting/marshalling etc.); Any transfer or acceptance of responsibility for the bird control task.

As well as detailing an overview of the weather, bird activity and bird control the Bird Controller will record the following events if they occur during the watch period: Details of any bird strike that occurs either on or off the airfield and subsequent action taken; Record of grass maintenance activities in progress; Record of





bird culling or eggs/nests destroyed; Equipment failures; Details of other relevant duties (e.g. weapon cleaning); Environmental changes which might affect the local bird behaviour patterns, (e.g. agricultural activity in surrounding farmland); Field tasks undertaken by staff at local feeding, breeding or roosting sites and any off airfield observations.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? A contractor carries out wildlife culls twice a year – of rabbits, foxes etc.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture:
2 x MAN 4x4 hose layer/equipment carrier, manufactured in 2006;
2 x Carmichael Cobra 1 6x6 major foam tenders (10,500l water, 1700l foam, 50kg BCF, 100kg dry powder), manufactured in 1993 and 1994;
2 x Carmichael Cobra 2 6x6 major foam tenders (11,000l water, 1700l foam, 50kg BCF, 50kg dry powder), manufactured in 2000 and 2009;
1 x Rosenbauer Panther 6x6 major foam tender (11,400l water, 170l foam, 250kg dry powder), manufactured in 2012; 2 x Mitsubishi Shogan 4x4 command and control vehicles, manufactured in 2006.
7.2 Future developments – are there plans to purchase or dispose of any equipment?
2 x Rosenbauer Panther major foam tenders within Capital Plan for delivery within 2013 and 2015, discussion ongoing for disposal, possibly of two removed from fleet list and sold to external companies.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Fire Training Simulators (737 Aircraft Type, S61 Helicopter Type, both commensurate with A/C that use airfield) are available for other airports' use but we have no customers at this time.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 October - 31 March.
8.2 Average annual days of snow: 30 days.
8.3 Average snow depth: 4cm.
8.4 Maximum snow in 24 hours: 12cm – 20cm.
8.5 Annual number of days of de-icing activities: 60 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 10 people.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Runway Sweepers: Schorling P17A x 5, Schorling P21 x 2. Apron Sweepers: Holmes Brushes x 2, Mikro Brush/Plough x 1, Kubota 1m Plough/De-icer x 2. De-icers: BVE 24m x 1, BVE 15m x 1. Gritters: Epoke x 2.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runways, taxiways, passenger areas, roadways, apron areas.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: 5 Runway Sweepers available at all times. Taxiways: 2 Runway Sweepers available at all times, additional sweepers when runways cleared. Passenger areas: Kubotas x 2. Access Roads: Holmes Brushes. Apron: Mikro and Holmes Brushes and Runway Sweepers when runway/taxiway cleared.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 45 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Konsin used for very low temperatures – up to 24 hours holdover time. Safegrip also used – 4-hour holdover time.
12.2 Comment on storage capabilities of the chemicals that you use: 4 x 50,000l tanks, plus small tanks on apron areas.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: N/A.
12.5 Have you employed any special means to economise on chemical use? GPS in all de-icing vehicles to ensure nothing is sprayed onto grass areas or re-applied to already treated areas.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Ice Alert.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: One of many forecasting tools.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: N/A.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Done on parking stands.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Mk6 Mu-meter.
15.2 Have you any comments on the reliability of friction indexes? N/A.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? N/A.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: N/A
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: N/A

AMSTERDAM

Schiphol Group

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME:

Amsterdam Airport Schiphol

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway 04: TORA – 2,014m x 60m, width – 45m, LDA – 2,014m. Runway 22: TORA – 2,014m x 60m, width – 45m, LDA – 2,014m, ILS – CAT I/B/1, PAPI – Y. Runway 06: TORA – 3,500m x 60m, width – 45m, LDA – 3,250m, ILS – CAT III/E/4, PAPI – Y. Runway 24: TORA – 3,500m x 60m, width – 45m, LDA – 3,500m, PAPI – Y. Runway 09: TORA – 3,453m x 60m, width – 45m, LDA – 3,453m. Runway 27: TORA – 3,453m x 60m, width – 45m, LDA – 3,453m, ILS – CAT III/E/4, PAPI – Y. Runway 18C: TORA – 3,300m x 60m, width – 45m, LDA – 3,300m, ILS – CAT III/E/4, PAPI – Y. Runway 36C: TORA – 3,300m x 60m, width – 45m, LDA – 2,850m, ILS – CAT III/E/4, PAPI – Y. Runway 18L: TORA – 3,400m x 60m, width – 45m, LDA – 2,850m. Runway 36R: TORA – 3,400m x 60m, width – 45m, LDA – 2,850m, ILS – CAT III/E/4, PAPI – Y. Runway 18R: Width – 60m, LDA – 3,530m, ILS – CAT III/E/4, PAPI – Y. Runway 36L: TORA – 3,800m x 75m, width – 60m. Taxiways: Total length: 49 km, from which 43 km suited for CAT III operations. Aprons/ramps: Total number: 228, from which 100 are equipped with boarding bridges and 21 are solely for freight handling. The other ramps are in use for remote passenger handling, aircraft buffering and parking.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 22: CAT/I/B/1; RWY 06: CAT/III/E/4; RWY 27: CAT/III/E/4; RWY 18C: CAT/III/E/4; RWY 36C: CAT/III/E/4; RWY 36R: CAT/III/E/4; RWY 18R: CAT/III/E/4.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits?
Yes, we continuously improve safety at the airport and in our processes. Of course, this means we sometimes must reappraise some parts of the safety management system.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Regulations surrounding FOD are described in our Handbook of Safety and Security. Every employee is tested upon his/her knowledge of this handbook before he is allowed to work airside. Authority personnel are trained in recognizing FOD and removal of dangerous objects (such as dead birds) and dirt on taxi and runways.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport Authority Officers see to it that employees on roads and ramps stick to the regulations surrounding FOD. Before the docking of an airplane the ramp is inspected by the handler. Before ATC is going to use a runway, it is inspected for dangerous objects by the Bird Controller on duty.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Ramps, taxiways and runways are frequently swept.
After maintenance extra sweeping takes place. Schiphol has a special rubbish dump for damaged and discarded ULD's, which can be dangerous FODs. Pack up activities of freight must be done within the perimeter of the freight service to prevent packing materials flying around and thus form a FOD danger. These perimeters are surrounded by fences, which among other reasons are placed to "catch" this flying material.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): We are plan-





ning to combine effort in the prevention of FOD by creating more awareness among multiple agencies. This combined effort will be coordinated within the Safety Platform Schiphol (VpS).
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Since 2003 monthly inspections for debris takes place. These inspections lead to trend reports. When necessary action is taken, for instance the campaign "Clean Schiphol".
Low fences are placed in the vicinity of taxiways and runways, again to catch debris, which is flying around in the wind. Obviously these fences are regularly cleaned. We are still looking and following the developments around FOD-radar. At the same time we are active in the process of purchasing a new software system to have inspections more up to date and more direct.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? By sight, radio communication and radar/MLAT (every vehicle in the manoeuvring area has an ADS-B transponder).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes. At Schiphol we have a zero tolerance for runway incursions of cat. A. Next to that we are trying to decrease the overall number of incursions by investigation to find out the root cause. After investigation there could be recommendations to take infrastructural measures (fillets, lighting, markings, etc) or changes in procedures/communication.
On a more structural basis, AMS is installing Runway Guard Lights where extra conspicuousness is needed and implement special switchable signs for the coordination of tow-traffic.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): All runways are protected by RIASS (Runway Incursion Alert System Schiphol). RIASS is ASMGCS level 2 and will sound an alert in the control tower to warn ATC that a RI might occur (RIMCAS, but specially developed by LVNL. Based on MLAT and enhanced with ADS-B signals where available).
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies:
Any measure that could prevent a pilot or vehicle driver to make a runway incursion should be used. No matter if it is high or low tech.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport?
Training for all vehicle drivers who operate in the manoeuvring area, extra training for those who have to cross runways. Recurrent training after a period of 1 year for those who drive in the manoeuvring area. Apron controllers are certified.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting?
All organizations at Schiphol Airport have their own responsibilities for reporting incursions and investigation. There is not a specific reporting tool. Every runway incursion gets discussed in the Runway Safety Team. Most investigations are jointly done. Investigations are to learn and not to punish. At Schiphol we strive to become a High Reliability Organization and becoming more aware of the potential dangers surrounding us combined with a Just Culture.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Long grass policy, with grass species developed by scientific research; Long grass policy is, in general over the year, unattractive for all bird species (and especially gulls and lapwing).
6.1 Do your staff attend recognised bird control training courses? Yes, for example hunting courses and "quality training days".
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously (24/7).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Green laser equipment, distress calls, pyrotechnics, Falconer, shotguns.
6.4 Do you carry out a bird strike risk assessment? At the moment we are doing a risk assessment about the presence of geese; Risk assessments are performed in cooperation with our home carrier AF-KLM; We are audited every year by several organisations. Recently we have made a very detailed bow-tie to point out what barriers are in place and who is responsible for what.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Hare (wild), we have 10 regular hunting days to control the population.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 7 x E-one Titan HPR 8 x 8. Year of manufacture 2002 - 2004
2 x E-one Titan HPR 8x 8 with Boom. Year of manufacture 2002 - 2004
2 x Mercedes Atego, Year of manufacture 2007/2008
7.2 Future developments – are there plans to purchase or dispose of any equipment? There are no plans to dispose any equipment.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Amsterdam Airport possesses fire Training simulator that is available to other airports for training purposes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From October until May for de-icing aircraft and from November until April for de-icing RWY.
8.2 Average annual days of snow: 7 days per snow season.
8.3 Average snow depth: Less than 1 cm.
8.4 Maximum snow in 24 hours: N/A
8.5 Annual number of days of de-icing activities: N/A

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? Per shift maximum 100.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 18 truck, plough and blowsweepers; 12 truck and blowsweepers; 5 truck and ploughs; 3 snowblowers; 9 salt sprinkle devices; 5 KAc spraying devices; 3 runway de-icing vehicles; 1 frontloader; 14 wheeled shovel-loaders; 20 trucks for snow transportation.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway-Taxiways-Aprons
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: We spray chemicals to prevent icing and snow building. For the RWY we use the sprinkle-devices of 33 mtrs width and for TWY and Aprons 16 mtrs width.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? On average it takes 30 minutes to clear the RWY that is including the exits.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: KHCO2, NAAC.
12.2 Comment on storage capabilities of the chemicals that you use: We store up to 480.000 litres of KHCO2.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: We use solid de-icers NAAC granules with glazed frost.
12.4 Have you experienced any corrosion problems with de-icers? Yes, but it is hard to measure the influence of de-icers and prevent corrosion. All vehicles are coated to minimize the effect of the de-icing materials.
12.5 Have you employed any special means to economise on chemical use? The usage of weather-stations and sensors for precise temperature readings to decrease the amount of used chemicals.
12.6 Do you have any other comments on experience with chemicals? No, but the environmental issues will become even sharper in the near future.
12.7 Do you use other chemicals or sand on operational areas? At this moment we only use KHCO2 and we are using more sand as well.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Every RWY has its own weather-station with sensors. With these sensors it is possible to measure the surface temperature, ground temperature at -30cms, dew point and the amount of liquids still available. This helps to determine the use of spraying or not.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Due to the information gained from the weather-station-sensors it is far more accurate to determine the necessity and amount of surface de-icing chemicals. This enables us to reduce the costs for winter operation.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We use dedicated de-icing positions primarily. This so we can manage the spills and glycol on the parking area.
14.3 Is glycol recovered? If so,





please state methods:
It is separated, and transported to a third party.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? We have 2 VW Sharan's with Airport Surface Friction Tester from Sweden.
15.2 Have you any comments on the reliability of friction indexes? No comment.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes, we started a more selective spraying method more based on RWY usage. Plus we are adjusting the spraying vehicles so they use less KAC and this has already led to a reduction of 200.000 ltrs of KAC.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes a new RWY-sprayer with more accurate dosing and less usage of chemicals with better results.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

ANTWERP

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Antwerp Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Dimension Rwy11/29 (m) 1510x45 TORA 11 (m) 1510 TORA 29 (m) 1510 TODA 11 (m) 1510 TODA 29 (m) 1510 ASDA 11 (m) 1510 ASDA 29 (m) 1510 LDA 11 (m) 1366 LDA 29 (m) 1510 Totale concrete 154310 square meter.
2.2 Landing aids for each RWY (e.g. CAT II): CAT 1 ILS and papis on Rwy 29. VOR/DME procedure and papis on 11 (see AIP Belgium).

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? For info about safety management contact Mrs. Sophie Velders, Deputy Airport Commander (= Safety Manager) at 003232856504 or sophie.velders@mow.vlaanderen.be.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training "Safety on the ramp" and prevention campaigns.
b) Inspection by airline, airport, and airplane handling agency personnel: There is constant FOD control by inspection (=operations) and people working on EBAW.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping and magnetic bar use. Special FOD containers available.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Poster campaigns.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Regular control of the bins and specification of the found FOD.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Monitoring done by ATC.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? When visibility is low, we start LVP procedures.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Guard lights on the TWYs.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Every person working on airside must follow a special training concerning safety on the ramp.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Fake birds, no attraction of food and scare them with noise.
6.1 Do your staff attend recognised bird control training courses? Training courses for Inspection by the Belgian Army.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Very regular control by Inspection.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Noise Scare Crow, gunfire and birdscare cartridges.
6.4 Do you carry out a bird strike risk assessment? N/A.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: PANTER 6X6 12000 liter water 1500 liter foam product 500 kg extinguish powder (year 2008); SIDES 6x6 9000 liter water 1100 liter foam product 250 kg extinguish powder; Mercedes 4X4 fire and rescue equipment. FAUN 6x6 12000 liter water 1500 liter foam product (year 1977).
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 November - 31 March.
8.2 Average annual days of snow: 2 days.
8.3 Average snow depth: 2cm.
8.4 Maximum snow in 24 hours: 3cm.
8.5 Annual number of days of de-icing activities: 7 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 6 persons per shift, no sub-contracted winter service.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow plough MB, 3 Towed snow blowers Shorling, Mercedes de-icing vehicle 4000 litre potasiumacetaat.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: First RWY 11 then TWYs and apron 1 and 2.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Start sweeping on the Rwy axis with 2 snow-blowers in close formation. The first on the axis the second 3 m out of the axis in the back of the first, then working the snow out to the edges in the same formation taking care not to cover the RWY light systems. When ready and after Mu measure, stabilisation of the RWY surface with kalium acetate. A "winter operations" manual is available for special weather conditions.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Between 30 minutes and 1 hour.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: 20,000 litres used Cryotech. Holdover times good. Potasium acetate, effectiveness - good.
12.2 Comment on storage capabilities of the chemicals that you use: Tanks in stainless steel for 30,000 litres kalium acetate storage. No special comment.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: In case we need a strong reaction (black ice) we spread prilled Sodium acetate and moisten the product with kalium acetate.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? Previous use of the liquid de-icer and close control of the physical action of the chemicals by the mu indications of the Rwy. Close follow up of the meteorological conditions.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: 2 sensors on the RWY.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: The warning system is for us a second help, in the first place personal control of the pavements is necessary.





14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Done by a private company.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? No.
14.3 Is glycol recovered? If so, please state methods: No.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Saab friction tester.
15.2 Have you any comments on the reliability of friction indexes? Reliability is good.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

ATHENS

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Athens International Airport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): There are two (2) runways the design of which complies with ICAO Aerodrome Reference Code 4E, approved for aircraft types Airbus A380-800 and Boeing 747-800, with a width of 45 meters, plus shoulders of 7.5 meters on each side. The runways are designated as follows:Runway 03R/21L with physical length 4000 meters; Runway 03L/21R with physical length of 3800 meters. The runways are parallel and the distance between their centrelines is 1575 meters. According to the physical characteristics as published in the AIP Greece the declared distances are: Runway 03R TORA (m): 4000 meters; Runway 21L TORA (m): 4000 meters; Runway 03L TORA (m): 3800 meters; Runway 21R TORA (m): 3800 meters. Ramp area: 45975 sq. meters and Non effective areas: 11853 sq. meters. Total apron area: 57828 sq. meters.
2.2 Landing aids for each RWY (e.g. CAT II): The RWYs landing aids are able to serve CAT II approaches. Approach lighting: Precision approach CAT II; Lighting system, 900M, all RWYs; PAPI, left side / 3q MEHT 18 M, all RWYs; Runway Lighting: (CAT II); RWY C/L lights: 15m spacing (White/Red- White/Red); RWY edge lights: 60m spacing (White, LIH); RWY end: (Red); THR lights: (Green); TDZ lights: (White).
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Changes have been made following the amendment of ICAO Doc. 9859. Moreover within 2012 was completed the revision of the Aerodrome Operations Manual (including SMS manual).
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Airport provided training to ground handling personnel. Also in Airside Driving Permit (ADP) training.
b) Inspection by airline, airport, and airplane handling agency personnel: Ramp monitoring performed by Athens International Airport S.A (AIA S.A) company's staff: Ground Handling Services Dpt personnel, Airside Monitoring & Inspection Unit (AMI Unit) and Airside Sweepers. There is an external contractor which provides scheduled and ad-hoc FOD control upon AIA S.A's request. Aircraft parking position pre-use/post-use check by AMI Unit's staff and Ground Handlers' ramp staff.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Daily apron sweeping, FOD – boss blanket, magnet bar, FOD bins and special containers for toxic and hazardous waste.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Through the Airside Safety Committee, Safety Awareness meetings with stakeholders, brochures, apron banners, incident reporting/investigation with the involved entities, "FOD Collection Days" at the airside, management of FODs meetings, Aviation Safety Newsletters, Airside Safety Campaigns etc. Moreover special care is pointed out regarding safety issues such as the proper chocking of aircraft especially during adverse weather conditions environment etc.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Ground and Tower ATC control.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Ground Radar, magnetic loops, stop bars.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Enhanced TWY centreline warning and additional RWY holding positions plus RWY guard lights, retro reflective taxiway end signs as well as lead-in marking enhancements on taxiway guidance on a large number of aircraft parking stands.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? There is an Airside Driving Permit procedure directed by Athens International Airport with theoretical and practical examinations either for apron movement as well as for the manoeuvring area.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? A Local Runway Safety team has been established dealing with those issues.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: All habitats inside the airport fence are treated in a way to minimize wildlife attraction. Food, water, and roosting/resting/nesting places are minimised either applying the proper designs at the initial master plan of the airport (e.g. buildings without roosting places, drainage system with fast discharge, landscaping with effective ground cover and fruitless shrubs and trees, collection of residual and organic waste in closed bins, etc.) or with the application of various long-term measures if new attractants are detected (e.g. drainage of seasonal water pools). All the airport areas are monitored daily. The natural habitats outside the airport are subject to periodic monitoring recording of the wildlife they sustain together with other components of the ecosystems like flora and vegetation. University institutions and the Hellenic Ornithological Society are cooperating with the airport for this task.
6.1 Do your staff attend recognised bird control training courses? The members of the Wildlife Control Team (all with university degree in life sciences) have been trained by the German Bird Strike Committee and the Food and Environment Research Agency (Bird strike Avoidance Team) of U.K. Continuous training includes participation at ACI training courses (e.g. March 2010), regular visits to major International Airports abroad for on the job training and participation in the meetings of the International Bird Strike Committee in order to enhance their knowledge on problem solving. These members organise and provide training on annual basis to other airport personnel that supports wildlife management.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? At least one dedicated person, member of the Wildlife Control Team, monitors and records the wildlife activities on the airfields from the first to the last light, in frequent intervals according to the wild strike risks posed and applies measures whenever necessary. Additional personnel from the Airfield Services Department trained for applying wildlife measures is supporting the Wildlife Control Team 24 hours, when necessary.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Equipment includes: Sound devices installed at 13 airport vehicles. They are self made based on car CD players and they broadcast recorded distress or alarm calls recorded in cooperation with university specialists, and also digital loud sounds; 2 portable sound devices broadcasting distress calls purchase from SCARECROW BIO-ACOUSTIC SYSTEMS LIMITED (U.K.); 4 shotguns firing both blank and live ammunition; 1 laser pistol AVIAN DISSUADER purchased from SEA TECH (U.S.A.)
6.4 Do you carry out a bird strike risk assessment? Wildlife Strike Risk Assessment and Management procedures have been incorporated in the Aviation Safety Management Plan of the airport. Periodical wildlife strike risk assessments are performed monthly and the results are presented at the monthly meetings of the Airside Safety Committee. Full scale wildlife strike risk assessment is performed annually and the results are communicated to the Hellenic Civil Aviation Authority.





6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? The personnel dedicated to the monitoring of wildlife activities at the airport keeps an electronic Wildlife Control Log with all the details regarding wildlife activities, measures applied and the effectiveness of the measures, airport habitat conditions and weather data in the database specially designed for the purposes of monitoring and managing fauna, flora and vegetation at and around the airport.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? There are manageable problems with insects, and small and medium mammals like rodents and foxes. Insecticides are applied at least once per year to reduce the populations of insects during the most critical period of their life cycle, rodenticide bait stations are used for rodents (further to the reduction of the populations of the insects), while trapping and relocation is used for foxes.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: AIR CRASH TENDER – ROSENBAUER PANTHER 8x8. CHASSIS: Type: MAN 38.1000 VFAEG/8x8, Engine: MAN V12 diesel engine, Euro 2, Output: 735 kW (1,000 HP) at 2,300 min-1, Capacity: Water tank capacity, material: 12,500 l, GFP, Foam tank capacity, material: 2 x 750 l, GFP, HP powder unit: 1,000 kg, Year of manufacture: 2000.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Not in the near future.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Period: 15 December – 15 March annually.
8.2 Average annual days of snow: Not Available (Snowing average every 2 years).
8.3 Average snow depth: Not Available.
8.4 Maximum snow in 24 hours: Not Available.
8.5 Annual number of days of de-icing activities: Average 3-5 days monthly between December and March annually.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? For the airside and landside areas approximately 65 employees per shift.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Airport Equipment: Schmidt TJS 630 4 units; Schmidt CJS 4 units; Vehicle ACTROS MB2640 with Schmidt Airport Sprayer (ASP) 2 units; Vehicle ACTROS MB2640 with Schmidt plough and spreader 1 unit; Vehicle UNIMOG Schmidt plough and spreader 2 units / Schmidt Large Snow Cutter (optional); Vehicle Atego 1823 Schmidt brush 2 units; Vehicle Tractor John Deere Schmidt plough 1 unit; Vehicle Kramer Schmidt plough 1unit; Vehicle Sk151 Schmidt plough 2 units.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: According to prevailing weather conditions, ILS operation status priority as follows: RWY, adjacent TWY, at least three high speed exits and a taxi lane towards MTB and STB. Simultaneously apron taxiways by different teams.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Vehicles as above with external company assistance (Unimog, 3 units, 2 Tractors), Formation according to wind direction (mainly echelon).
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Approximately 45 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Clariant SAFEWAY KA HOT (liquid), and Safeway SF (solid) as pre-wet.
12.2 Comment on storage capabilities of the chemicals that you use: Inside warehouses.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Mainly liquids are used.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: No such system is installed. Met. info by National Meteorological Service.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? N/A.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Athens International Airport S.A, (the Airport Company) does not provide aircraft de/anti-icing operations. There are 3 Ground Handling companies with relevant equipment. Total number of de/anti-icing trucks 5. De/anti-icing truck types: 3 trucks FMC Tempest II; 1 truck Ford Trump 2000; 1 truck Vestergaard.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De/anti-icing operations take place on each aircraft parking stand.
14.3 Is glycol recovered? If so, please state methods: The glycol is not recovered.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS FrictionTester, SAAB 9-5 Wagon Surface Friction Tester (SFT), 2 units.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

BARCELONA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Barcelona El Prat

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 02: TORA 2528m, TODA 2600m, ASDA 2528m, LDA 2528m; RWY 20: TORA 2528m, TODA 2588m, ASDA 2528m; RWY 07L: TORA 3352m, TODA 3412m, ASDA 3352m, LDA 2922; RWY 25R: TORA 3352m, TODA 3412m, ASDA 3352m, LDA 3352m; RWY 07R: TORA 2660m, TODA 2720m, ASDA 2660m, LDA 2660m; RWY 25L: TORA 2660m, TODA 2720m, ASDA 2660m, LDA 2660m. Taxiways: Width 25m: EXC BA, GA, HA, KA, P1, S5 to S11, S13, UB, U1, U2, U3R, U4, U5, U6; 23m: Y3; 30m: T4 to T13; 45m N2 to N13.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 25R: CATII/III; RWY 07L: CAT I; RWY 25L: CAT II/III; RWY 07R: CATII/III; RWY 02: CAT I; RWY 20: not available for landings.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? The airport has been recognised by the Spanish Aeronautical Authority (AESA) as a certified airport. The airport has undergone external audits of AESA, verifying that the airport meets national standards RD862/09, and therefore the SMS of Barcelona-El Prat complies with ICAO Annex 14 standards. In addition, the SMS's main premise is continuous improvement. The internal procedure BCN-PGS01 "Risk Management System" requires a semi-annual monitoring of all identified situations, facilitating the control of hazards at the airport and which are specific operations. Also, the above procedure has an associated operational instruction: ITS01 "Change Management", each unit responsible for risk management enabled with the following events: Changes in operating procedures, implementation of new procedures, infrastructure projects in movement area, commissioning of new infrastructure, organisational changes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The learning programme of the Handling Agents, Airlines and Companies that work at the airport includes FOD Control awareness.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspection by handling agent and activity control by the airport management.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The airport uses FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Safety level agreements between airlines and handling agents.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of moni-





toring vehicle and aircraft movements on the ground? A-SMGCS, MLAT.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Nowadays, there are not.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS, MLAT.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: According ICAO Annex 14.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Safety training, maps in vehicles, local safety committees,
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The Safety Management Department collects all the information under the premise of 'no penalty' reporting.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: For all actions that are performed, performance cards attached. They explain the actions carried out to minimize bird hazards.
6.1 Do your staff attend recognised bird control training courses? Continuous training at the airfield in all components of Animal Control Service. Specific formations are considered in case of need.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? The Wildlife Control Service that consists of three prevention teams performs continuously on the airfield during daylight hours. That is from sunrise to sunset.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Hawks Team (14 in each team), blank pistols, bird frightening systems utilising screams of panic in vehicles.
6.4 Do you carry out a bird strike risk assessment? Risk index: A risk index is calculated for each species that is involved in bird strikes. This index takes into account the number of collisions registered for each species and the probability of the collision causing damage (its severity). It is based on the indices recommended by international organisations, with minor changes to adapt it to the local context of Barcelona Airport.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All incidents are recorded daily by the Animal Control Service. They also receive reports from airlines and the tower. With all this data, statistics and indicators, the department is able to log all their bird control activities successfully. Analysis on bird strikes are also carried out when it is required by the severity of the case.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Dogs and cats. Cat trapping is done when they are detected on the airfield. The dogs that enter in the airport grounds escaping from hold's aircrafts are captured by the Animal Control Service and are returned to their owners.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2 Sides - Chassis Renault - 6x6, water 10,000l, polyester foam 1,200l (2004).4 Rosenbauer Panther - Chassis MAN - 8x8, water 13,500l, polyester foam 1,620l (2006). 2 Rosenbauer Panther HRET - Chassis MAN - 8x8, water 12,000l, polyester foam 1,500l (2011).
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 December to 15 March.
8.2 Average annual days of snow: 0-1 days.
8.3 Average snow depth: 5mm.
8.4 Maximum snow in 24 hours: 7mm
8.5 Annual number of days of de-icing activities: 1 day.

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? The handling operators have the necessary employees to operate their de-icing equipment.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Urea spreader: 2 Maquiasfalt; Snowplough trucks: 2 Maquiasfalt; Road Sweeper: 1 Schmidt; Friction Tester: Sarsys SAAB.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority: RWY, TWY, Apron, service roads, entries. RWY: Preventive treatment: Urea Spreader in parallel (50m wide back); corrective treatment: Snowplough trucks in parallel (50m wide go). TWY: Preventive treatment: Urea Spreader in parallel (25m wide go); corrective treatment: Snowplough trucks (25m wide go). Apron: Urea Spreader. Service Roads: Urea Spreader. Entries: Urea Spreader.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The vehicles work in tandem along the track and parallel to the centreline. Tandem works behind the Snowplough trucks and a marshal vehicle supervises all work.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 24 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Currently used for preventative treatment. Solid urea (dampened with potassium acetate) and liquid potassium acetate corrective treatment.
12.2 Comment on storage capabilities of the chemicals that you use: At present, 20 tonnes of solid urea, and 25 tonnes of liquid potassium acetate.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Solid de-icers are effective if they are humidified, and mainly for preventive treatments. The time it takes to start acting is too high at 30 minutes.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? Measuring surface temperature, the friction meter and the meteorological service, economise on chemical use.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: The Airport Meteorological Office issues forecasts for the possibility of frost and snow, and tracks of the meteorological parameters (Aerodrome Advisory Bulletin, TAFOR, TREND, METAR, SPECI). The marshal has two laser surface thermometers.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Able to implement effective preventative treatment.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: The aircraft anti/de-icing operations are provided by handling agents.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? There are four de-icing positions to provide de-icing services for aircrafts until D category. For aircraft category E and F the de-icing service is provided on the parking area.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS SaaB-95 Nº874.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

BREMEN

CITY AIRPORT BREMEN

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Bremen Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 09/27: 126,772m^2; RWY length: 2040m; RWY width: 45m; TWYs A, B, C, D, E, F, G, H, K, L: 82,712m^2; Aprons: 155,670m^2
2.2 Landing aids for each RWY (e.g. CAT II): RWY 09, CAT IIIb; RWY 27, CATIIIb.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management





System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? SMS is an integral part of the company operations manual.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Staff concerned with removal of FOD objects as well as inspecting the movement areas are trained on the job (on the job training).
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections are done.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airport uses sweepers and magnetic bars.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination and reporting done by airport duty manager at airport traffic center and SMS-Safety Office
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No special software in use for FOD control. SMS-Software will be in use in early 2013 as control system ('A-SMS', manufacturer: Airsight, Berlin).

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements are controlled and coordinated by local ATC (TWR) governed by memorandum containing applicable process instructions for airside of airport.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Apron parking-positions and taxiway-markings to eliminate potential pilot confusion about taxi directions. Follow me-vehicles used also.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Aircraft movement control during low visibility operations (CAT II / CAT III) is accomplished by an active taxiway lighting guidance system with intermediate holding position markings and lights, stop bars and induction queues.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Markings, signage and lighting installed iaw. ICAO ANNEX 14. RWY guard lights will be installed in 2013.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Yearly Training for mechanics, airport vehicle operators, and other people who work at the airport (instructions, wireless-communications etc.). Airport duty manager at airport traffic center perform yearly training sessions about airport movement areas for authorities like police, MET service personnel and other service personnels etc.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Daily-general-reports. Daily-general-reporting procedures are used.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes, internal training (on the job training).
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes. All bird control staff is employed by the airport and familiar with the area and airport procedures.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird control is using by approximately 48 stationary shotguns and auxiliary pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? Once a year, audited by the DAVVL organization. If no immediate ID is possible, pictures are taken and sent together with bird strike report and the remains of the birds to the German Bird Strike Committee (GBSC) DAVVL and the LBA (Luftfahrtbundesamt).
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. Every bird control activity is recorded in a report and available to the responsible bird strike manager.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Wild rabbits. Control by state approved hunting on a yearly basis.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: ELW Toyota RAV 4 4x4, 2006; TroFL 2000, 2000 kg powder MAN 6x6, 1996; Flughafen-Hubrettungs-TroLF, 2000 kg powder MAN 8X8, 1993; FLF 60/90 I, 9000l water/1000l AFFF MAN 8x8, 1988; FLF 60/90 I, 9000l water/1000l AFFF MAN 8x8, 1989; FLF 60/90 I, 9000l water/1000l AFFF MAN 8x8, 1998; FLF 6000l water/600l AFFF MAN 6x6, 1984.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Fire Training Simulator Training procedere externe in Rotterdam and FRA.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 October until 15 April.
8.2 Average annual days of snow: 20 days.
8.3 Average snow depth: 2-5cm.
8.4 Maximum snow in 24 hours: 25cm.
8.5 Annual number of days of deicing activities: 30-50 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? 15. Sub-contracted winter services personnel on request only.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, deicing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): BRE – Equipment: 5 Airblast-Snow-Sweepers (Schörling P17B) towed by 4 Trucks (Mercedes-Benz, Typ 1928, 4x4)- and 1 Truck (MAN TGA 18.350 4x4 BLS, with Snow Ploughs (Schmidt SM) each; 3 Trucks with Snow Ploughs (Unimog 4x4, Mercedes-Benz 4x4, Mercedes-Benz 4x4); 1 Snow-Blower (Unimog1300 4x4 / Schmidt Turbostream T5); 1 De-/Anti-Icing-Units (Iveco 330-30H, 6x6 / Küpper-Weisser Multi-De-Anti-Icer, 9m³ Fluid, 6m³ Solid); 1 De-/Anti-Icer –Unit (Iveco 330-30, 6x6 / Küpper-Weisser , 14m³ Fluid); 1 Double-Rotation-Solid-Spreader 4,6 m³ (MAN TGM 18.250, 4x4 / Epoke4,6m³); 1 Single -Rotation-Solid-Spreader 0,5 m³ (MB 300GD, 4x4); 1 Single-Rotation-Solid-Spreader (MB UX100, 4x4 / Küpper-Weisser Typ SDA 95, 1,3m³); 1 Singel-Rotation-Sprayer (MB 300GD, 4x4 / Küpper-Weisser Typ SDA 95, 1,3m³); 2 SKH, Skiddometer BV 12 with Computer MI 90; 1 TAP.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: RWY 09/27; TWYs A, F, C (CATIII-TWYs); Aprons (Ramp 1, Ramp 2) ; Other TWYs; Other Movement areas.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow Plough + Snow-Sweeper - Formation, first snow removal, second De-/Anti-Icing-Fluid. General prefer De-Icing-Procedures in Prevention , for all movement areas.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Maximum 30 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: YARA Aviform L50, YARA Aviform S Solid. Very good effectiveness (low temperature and holdover time). Very effective with short reaction time (holdover time is weather dependent after application).
12.2 Comment on storage capabilities of the chemicals that you use: Max. 80 m³ Fluid (L50) and 5 – 20 to Solid.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Mixing – Rate 80% Solid + 20% Fluid.
12.4 Have you experienced any corrosion problems with de-icers? No, we have not.
12.5 Have you employed any special means to economise on chemical use? Yes, we have, user information how to handle anti-/de-icing procedures in the BRE Winteroperation Handbook. Personnel trained yearly on handling and economic usage of fluids and solids.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? Sand in extreme situations only, but not for the runway.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: In BRE not available.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? N/A.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 3 Units Vestergaard Elephant.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-ice on the parking area only.
14.3 Is glycol recovered? If so, please state methods: Compact-Sweeper in Pickup-Operation only.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SKH (Skiddometer High Pres-





sure) BV 11 with Computer MI 90.
15.2 Have you any comments on the reliability of friction indexes? Friktioncoefficient – Reporting in conditions like especially under wet conditions, which means when the runway is contaminated with wet ice, wet snow or slush: Under such conditions, to be reported to ATC / pilots using only the terms GOOD, MEDIUM or POOR, corresponding to the figures 5, 3 and 1 in the SNOWTAM item H.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No changes intended for now.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Airport operations is always evaluating potential for new vehicles and equipment.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No comment.
16.4 Do you have any winter services equipment that you would like to sell? No, we have not.

BRUSSELS

Brussels Airport
Welcome to Europe

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Brussels Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 02: Width 50m. RWY 20: Width 50m. RWY 07L: Width 45m. RWY 07R: Width 45m. RWY 25L: Width 45m. RWY 25R: Width 45m. TWYs: Width 30m with 10m shoulders. Main Apron: 1,660,000 m^2. Cargo apron: 170,000 m^2. General Aviation apron : 21,000 m^2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 02, CAT 1; RWY 20, CAT 1; RWY 25L, CAT 111b; RWY 25R, CAT 111b.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Up and Running 3-yearly recurrent Safety Audit program (about 100 internal & external safety audits). Updated training curriculum for vehicle drivers on the manoeuvring area. Reviewed and redefined Terms of Ref Apron Safety Committee. Reviewed SMS procedures. SMS introduction training via e-learning for new hires (airport wide) and all internal operational services

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Promotion and prevention campaigns, safety newsletters including lessons learnt and safety performance indicators, SMS introduction courses for all personnel.
b) Inspection by airline, airport, and airplane handling agency personnel: 4 daily inspections by airport operator personnel, FOD inspection before arrival and after departure by handling personnel on aircraft stands.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping program by vehicles equipped with magnetic bars, new FOD bins installed near each aircraft stand and prevention on tool management for our partners available.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Apron Safety Committee and Local Runway Safety Team.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Brussels Airport has developed an internal procedural Tool Management system to avoid tools from becoming hazardous when lost or forgotten. SMU is co-operating with Line maintenance and vehicle and equipment maintenance companies to organize a robust and adequate tool management system and monitors KPIs like eg. Tool FOD reported on RWYs and TWYs.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Visual observation, SMR, Multilateration, Radio contact. Brussels Airport inspection vehicles will be transponder equipped. Brussels airport has developed and implemented a definition for the protected area of a runway and has made a specific chart of this area available to all users via courses and documentation.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? 24 hour use of stopbars, training program for situational awareness and runway incursion prevention.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A vehicle tracking system and RIMCAS are about to be implemented. Brussels Airport operational vehicles will be transponder equipped.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Additional painted markings and signs to avoid Rwy line-up confusion between RWY 25R and RWY 20. 24 hour use of stopbars. TORA indications on TWY used for intersection takeoff.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? R/T and standard ICAO phraseology course in aviation English for vehicle drivers. Procedure: Driving on the manoeuvring area – take a safe start. Refresher courses and awareness campaigns, safety newsletters, implementation of the "European Guidelines for the Prevention of RWY Incursions", regular Local RWY Safety Team meetings.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The Civil Aviation Safety Occurrence Reporting is regulated by the Belgian CAA Circular CIR/INS/01, covered by a Royal Decree of 22/04/2005. The "just culture" concept has been adopted by the "Independent Investigation Cell for Air Accidents and Incidents" of the Ministry of Transportation. Brussels Airport has implemented a voluntary reporting system, available online via www.brusafety.be.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Long grass policy, no agriculture or vegetation that can attract birds.
6.1 Do your staff attend recognised bird control training courses? Courses started in 2011 (end foreseen in 2012).
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously: Daily between 6am and 10pm.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded distress calls (Scarecrow), pyrotechnics (Primetake), shotguns (12G Browning), trapping cages, bird balls on ponds, spikes on signalisation and gas canon (Purivox).
6.4 Do you carry out a bird strike risk assessment? Implemented within SMS.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Rabbits, regular hunting is organised.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: CFR VEHICLES INVENTORY STATING : FGK 4105, Kronenburg chassis, 8x8 axles, 16.000 litre water ; 3.000 litre foam, Monitor-output : 4.000 – 7.000 L./min, bumper turret-output: 2.000 L./min, 1997. KR50.1100.60.8x8, Kronenburg chassis, 16.000 litre water ; 1.000 litre foam, 500 kg. powder, Monitor-output : 3.000 – 6.000 L./min, bumper turret-output: 1.000 L./min, Monitor-output powder : 15 – 30 kg.sec, 1999. Z8 FLF 80/125-10 snozzle, MAN 8x8 axle, 12.500 litre water ; 1.000 litre foam, 500 kg powder, Monitor –output : 2.000 – 4.000 L/min (snozzle), powder output: 300kg/min (snozzle), 2007. KR50.1100.60.8x8, Kronenburg chassis, 16.000 litre water ; 1.000 litre foam, 500 kg. powder, Monitor-output : 3.000 – 6.000 L./min, bumper turret-output: 1.000 L./min, Monitor output powder : 15 – 30 kg./sec, 2000. TM 19 FA off-road, MAN chassis, 4x4 axles, 4.000 litre water ; 250 litre foam, 500 kg. powder, Monitor-output : 2.500 L./min, bumper turret-output: 1.000 L./min, Monitor-output powder : 15 – 30 kg./sec, 2000. FLF 80/125-15+250P Z6 "Advancer"; Thomas chassis; 6x6; 12.500 litre water; 1.500 litre foam; 250 kg powder; Monitor-output : 3.000 – 6.000 L./min, bumper turret-output: 1.200 L./min; 2010.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Second fire pumper, hazmat-rescue vehicle, spare water tank truck, replacement second command car.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No Fire Training Simulator.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness?
Winter teams: 15 November - 31 March.
De-icing of aircraft: 15 October – 15 April.
8.2 Average annual days of snow: 7 days.
8.3 Average snow depth: 3 cm.
8.4 Maximum snow in 24 hours: 15cm.
8.5 Annual number of days of de-icing activities: 14 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-con-





tracted winter services personnel are available per shift? Winter teams: 35, de-icing of aircraft performed by ground handling companies.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Compact jet sweeper Schmidt TJS-C560, 4 units; Schmidt Supra 5000 snow blower/cutter, 2 units; Sprayer, Nido Schmidt ASP12000 on Actros, 2 units; Compact jet sweeper, Schmidt CJS914, 2 units; Compact jet sweeper, Schörling P21C, 1 unit; Sprayer, Nido Schmidt RSP6000 on Atego, 1 unit; Compact jet sweeper, Schmidt CJS720, 2 units; Towed blower sweeper , Schörling P17, 1 unit; Towed blower sweeper, Overaasen SB90, 3 units; Sprayer, Nido Schmidt RSP6000 on Actros, 2 units; Multipurpose vehicles, LAD0G, 4 units; Sprayer, Nido Schmidt RSP3000 on Unimog, 1 unit; Spreader, Nido Ardenna on Mercedes, 1 unit; Spreader, Nido Ardenna on Renault, 1 unit; Spreader, Nido Baby on Multicar, 1 unit; Spreader, Nido Stratos on Atego, 1 unit; Spreader, Acometis on Man, 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:
Snow clearing according to one of two predefined minimum airport scenarios: Minimum airport 25R / 07L: RWY : 25R / 07L; Entries : A1, A3, A7, B1, E6, F5, W41; Exits : B7, B9, P1; TWY : OUT1, INN2-10, OUT6, Z. Intersections between RWY, exits, entries and TWY listed above. Minimum airport 02 / 20; RWY : 02 / 20; Entries : P7, C6, D2; Exits : B1, E6, E5; TWY : INN3-10, Z. Intersections between RWY, exits, entries and TWY listed above
In parallel with the cleaning of the minimum airport, one convoy (5 vehicles) focuses on individual stand cleaning, priorities defined according to stand allocation planning. After cleaning of minimum airport main aprons, cargo apron and other TWY are cleaned in function of priority and needs (defined with ATC and Airport Inspection).
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow removal is performed according to standard minimum airport scenarios. The choice in scenario is based on weather conditions, priorities and the status of the airport. Each team consists of 6 convoys (composition see question 10.1). Each convoy carries its own particular tasks within the scenarios, matching their capacities and limitations. On top of the scenarios, standard procedures have been developed for snow removal on each part of the airport (RWY, TWY, exits, TWY intersections, RWY intersections and apron).
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? One RWY is cleaned in 35-40 min.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Liquid: CRYOTECH E36: 240.000 litres - effectiveness is very good but not with extreme low temperatures. Solid: NAAC: 30 tonnes - effectiveness when used on individual stands applied by hand for local ice patches is good. Application method, quantities and mixing ratios in combination with liquids for use on larger surfaces remains trial and error.
12.2 Comment on storage capabilities of the chemicals that you use: Liquids: 220.000l. Solids: No critical limitations. Bought in bulk and stored in hangar. Road salt (applied landside and to service drives airside): 264 tonnes.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Last year was only used on local ice patches (on stands).
12.4 Have you experienced any corrosion problems with de-icers? Only on galvanised equipment, not on aircraft.
12.5 Have you employed any special means to economise on chemical use? GPS is used to economise on liquids. Discussions with supplier are ongoing to fine-tune concentration politic.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Vaisala Icecast Viewer; 13 warning sensors.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Yes. Model not yet specified.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: It is helpful as an indicator.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No. It is done by handling companies.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? It is done on both, on a dedicated de-icing area and on aircraft stands.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? riction tester SFH, ASFT on Saab 9.5, 1 unit, Friction tester SFH, ASFT on Saab 9000, 1 unit, Friction tester Trailer T5 , ASFT, 1 unit.
15.2 Have you any comments on the reliability of friction indexes?
Worldwide standardization of RWY friction values is necessary.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Scenarios and working methods are under continuous review (workshops and SMS).
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Four tractors with shovel, brush and liquid spreader.
16.4 Do you have any winter services equipment that you would like to sell? No.

BUDAPEST

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Budapest Ferenc Liszt International Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 13L/31R: TORA/LDA: 3707 m, Width: 45 m + 7,5 m shoulders on both side; RWY 13R/31L: TORA/LDA: 3010 m, Width: 45 m + 7,5 m shoulder on both side; TWY system: Width: 23 m, except A1 is 19 m. All taxiways have paved shoulder with 3,5 m width. Apron 1, Apron 2 GA apron, and maintenance areas are 695.000 sqm.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 13L/31R: CAT II operations are available on 13L and CAT III/a on 31R. The upgrading process from CAT III/a to CAT III/b is on going. RWY 13R/31L: CAT II operations are available on both directions.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? The first edition of the SMS manual for Budapest Airport was published in January 2010, following the structure recommended by the ICAO. From this time all relevant process is following the SMS system included construction works and new procedures. The system running well, no recent changes are planned.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD awareness campaigns periodically, FOD leaflets are circulated periodically also. The FOD is a part of all kind of movement area safety trainings included handling companies, airport operator and subcontracted partners as well.
b) Inspection by airline, airport, and airplane handling agency personnel: The FOD is a relevant part of the daily inspection routine of Airfield staff. Every month an FOD collection is organized by the Airside Management together with the EHS team. Before and after the winter season an overall FOD-Fishing 2 is organised.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Two Apron Sweepers are in operations following a daily routine. These sweepers are equipped with magnetic bars. There is weekly taxiway cleaning program using the Schmidt Jetsweepers without plough. All defined parking positions are equipped with FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The FOD is a topic of monthly Airside Safety meetings, defining the results and informing all relevant airside users.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Magnetic collectors for the sweepers.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS was implemented and used by the ANSP to monitor all kind of traffic. All vehicles on the manoeuvring area equipped with Squid by ERA system.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All runway-holding





points are indicated by Runway guard lights, and stop bars. The RETs are equipped with permanent stop bars. The safety strips of runways are marked by retroflective poles.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS and continuous radio communications between tower and vehicle drivers.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Airfield safety publications; High visible signs; NO ENTRY markings; H24 operations of RGLs; Permanent stop bars on RETs. A RWY AHEAD sign was painted at the most critical RWY holding point (A1).
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All relevant companies included ANSP, Handling companies underline the importance of runway safety. Manoeuvring area inspections and maintenance procedures are in force published and defined in the manuals. Awareness campaigns, trainings for mechanics and maintenance workers regularly organised.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The data sharing and a joint investigation process are established. The information is continuously shared between partners as part of the regular LRST meetings.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: The airport has an own Bird and wildlife management, with detailed manual which contains all procedures, and data collecting methods. Habitat management includes: tree and bush cuttings on the airside, bird nest removals, spikes on ground lights and signs long grass policy.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? During operational hours a dedicated staff is on duty, paralleled with a Falconry team. At night the Airfield team is responsible for monitoring and taking actions.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Pyrotechnics, falcons, a Border Collie, recorded distress and bird alarm cries (Scarecrow), gas cannons (Zon Mark4). Traps and shotguns with pyrotechnics and normal ammo.
6.4 Do you carry out a bird strike risk assessment? Twice a year by internal audit.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, dedicated bird log is in used, including all kinds of actions.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes, the rabbit population is controlled, mainly between sunset and sunrise. The bird team is using traps and guns, and the population of rabbits was dramatically reduced in the year 2012.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Rosenbauer-Titan 5000l/min foam, 1984; Rosenbauer-MAN 6000l/min foam, 1986; Protector-Simon 7250 l/min foam, 1993; Rosenbauer-Frietliner 6200l/min foam, 2004; Mercedes-Rosenbauer 7000l/min foam, 2007; Rosenbauer- Rosenbauer 6000l/min foam, 2001; Rosenbauer- Rosenbauer 6000l/min foam; 2011; Rosenbauer-Mercedes 3000l/min water, 2011; Rosenbauer-Actross 10,000l/min squad, 2005; Rosenbauer-Mercedes 2400l/min water, 2001; Rosenbauer-Mercedes 2400l/min water, 2001.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Due to new CFR vehicles in short-term no plans, but renewing the old ones the mid-term plan, including purchasing new equipment.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? At this point two old non-used ACFTs serve for training, and a new training fire fighter container has been built this year. There is a mid-term plan to purchase a new "mock-up".

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? According to the Winter Services Manual the designated period is between 1 November and 30 March.
8.2 Average annual days of snow: 25-30 days.
8.3 Average snow depth: 8-12cm
8.4 Maximum snow in 24 hours: 25cm
8.5 Annual number of days of de-icing activities: 65-75 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Three different levels of winter service are defined. In Green level: 8 staff, in Orange level: 32 staff, in Red level: 48 staff.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 10 Schmidt-Mercedes Compact Jet Sweeper; 5 Boschung T-Broom tow behind runway sweepers; 1 Oschkosh Blower; 5 SUPRA 4000 blowers; 9 UNIMOG compact units; 2 NIDO sprayers.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Generally the basic concept is to maintain the limited but continuous operations from the barriers of car parking areas to the runways, but in severe weather the Duty Airside Manager will decide the priorities following the list below: Active RWY (13L/31R), belonging connection TWYs of the RWY; Aprons 2AB/Apron 1; Other TWYs; Maintenance area, Landside areas and car parks have separate dedicated equipments/staff
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The "conga-line" with 5 runway-sweepers is opening the cleaning procedures on the designated RWY and on the TWYs. The snow is pushed from the centreline to the edge of the surface with respect for the elevated edge-light system. Since the runways are 45m wide, two turns are required in order to clear the entire surface. At the same time 3-5 Jet Sweepers clean the designated blocks of the apron area and the preferred TWYs. Closing the cleaning procedure, NIDO sprayers are rolled out if necessary. The final step is the friction measuring process before reopening runways or taxiways.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 30-35 minutes, depending on snow depth and how many snow cleaning units are in working order.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Urea (566,3t) and Clearway-1 (5220 l) on the airside. CaCl2 (117,2 t) sand on the landside and other non-airfield areas. Last season the most important thing highlighted was that the Urea was uneffective below -6-8°c, resulting in an extremely high quantity of Clearway being used.
12.2 Comment on storage capabilities of the chemicals that you use: No comment.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Above -6°c we are using Urea only. Below this temperature or in the case of heavy ice a mixture of Urea and Clearway must be used.
12.4 Have you experienced any corrosion problems with de-icers? No corrosion problems were detected with Urea. The CaCl2 is aggressive and corrosive, meaning that use of it on the airside is strictly prohibited.
12.5 Have you employed any special means to economise on chemical use? No. 12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? Sand is used at maintenance hangars only.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Meteorological observer on duty, Almos System, Sensors: Air temperature: two/runway at 2m from the ground, RWY temperature: two/runway flush with surface.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No comment.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No, the handling agents take care of the aircraft de-icing on the airport.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing is done on stands. In the interest of reducing holdover times, de-icing procedures are relocated close to the runways.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT-CFME (SAAB wagon), ASFT-CFME (SAAB sedan).
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Budapest Airport has a project to change the technologies of surface de-icing and snow melting, including the changing of chemicals that are used,





spreaders, and storage technologies as well.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes. The Budapest Airport is just analysing the market to buy new spreaders that spray liquid based de-icing materials.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? There are plans to sell our existing Schorling P-17 (10 fleet) in 2013.

CHISINAU

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Chisinau International Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY Designator – 08/26; Total RWY length 3590m x 45m, 51 R/C/W/T Concrete; Strip dimensions – 3710m x 234.5m ; TORA / TODA / ASDA / LDA for RWY 08/26 – 3590m; Taxiways – 8 and apron taxiway; Total apron and ramp area – 110000 m2; Stands – 30; Rescue and fire fighting service – cat VI; CHISINAU Apron – 131,700 MHZ.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 08, CAT II 870M LIH; RWY 26, CAT-I 899M LIH.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training of personnel every six months.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections by airport personnel every three hours.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Twice daily cleaning by compact jet sweeper, Schmidt, CJS 914, (4 units); Twice weekly use of magnetic bar; FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Markings - signs and lights on site.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? New markings "RUNWAY AHEAD" on TWYs A1, B1 and C1; New marking of the transport roads on the apron; New apron guard light.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): SQMS and SMGCS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Permanent improving of Standard Operational Procedures, installation of additional signs and lights.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Annual programme to upgrade airport staff's professional skills, training and testing of aerodrome users and drivers twice a year.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, according to Chapter 5 of Aerodrome Manual and the recommendations of Doc. 9859.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird Gard Super Pro AMP – 7 units; Bird Gard PA4 – 8 units; Smooth-bore guns and pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Our airport also has problems with dogs, rabbits and foxes (RWY, TWY and apron incursions). Garden Protector 2 is used against them.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2 Mercedes Benz 3350 6x6, 9000 litres of water and 1200 litres of foam solution, 500 kg dry chemical powders (2008).
7.2 Future developments – are there plans to purchase or dispose of any equipment? Rapid response vehicle 4x4.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? LUKK doesn't possess a FTS.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November – April.
8.2 Average annual days of snow: 15-20 days.
8.3 Average snow depth: 4-6cm.
8.4 Maximum snow in 24 hours: 20cm.
8.5 Annual number of days of de-icing activities: 15-25 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Aerodrome division - 16 persons, drivers - up to 22 persons.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Compact Jet Sweeper, Schmidt, CJS 914 Super II MB, 4 units; Snow Clearing Schmidt Supra – 4001, 1 unit; Snow Clearing Valtra N141h and T171h, 2 units; Snow ploughs DE – 224A, 1 units; Thermal machine TM – 59, 1 unit; Spreaders for solid de-icers, 2 units; Combined liquid and solid spreader, 1 unit; Scrappers RMG-4B, 2 units; Front loaders, 2 units; Graders, 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Clearance priorities: 1. RWY, TWY's B1, B2, C1, D (between TWY's C1 and E), E, Apron TWY, Apron and parking positions, ILS Zone and access road from fire station. 2. TWY D (between TWY's E and B1), TWYs A2 and A1, road to the fuel storage. 3. TWY C2, cargo apron, roads.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: From centre line (around the RWY, TWY, aprons) to edges, depending on direction and intensity of wind.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Three and a half hours.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Traditionally we use effective solid, HKMM (Russia), and liquid, Nordiks -P, de-icers.
12.2 Comment on storage capabilities of the chemicals that you use:
According to manufacturer recommendations.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc:
No experience in this field.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: None.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No experience.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? On the parking area.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT, AFM-2, skiddometer BV11.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment





or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

COPENHAGEN

Copenhagen Airports CPH

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Copenhagen Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 04L-22R, asphalt, 216.000m^2; RWY 04R-22L, asphalt, 198.000m^2; RWY 12-30, asphalt, 192,000m^2; Taxiways, asphalt, 1,500,000m^2; Aprons, concrete, 1,200,000m^2; Transport roads, asphalt, 290,000m^2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 04L, CAT II; RWY 04R, CAT I; RWY 12, CAT I; RWY 22L, CAT III; RWY 22R, CAT I; RWY 30, CAT I.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The danger of Foreign Object Damage, and how to prevent FOD being a safety hazard, is an integrated element in CPH's Apron training.
b) Inspection by airline, airport, and airplane handling agency personnel: This is done repeatedly 4 to 5 times every 24 hours by personnel from the Airports Traffic Department.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): This is done by sweepers, magnetic bars and FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): This is done by the "Airside, Safety, Operational & Technical Committee".
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): CPH uses GIS (Geographical Information System) to provide documentation of what kind of FOD and where it is found. This database is also used for producing statistics and trend analyses.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The usage of ASMGCS and visual observations.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? New design of taxiway V, V2 and T. The implementation of H24 stop bars, instruction markings/enhanced TWY centre line at holding positions and enhanced runway guard lights.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Provision of H24 stop bars supplemented with instruction markings/enhanced TWY centre lines have made holding positions visible with a noticeable potential to reduce the number of runway incursion. More visible runway guard lights, i.e. based on high power LED technology will complete the achievements related to runway incursions.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All persons who wish to operate on their own outdoors on airside must pass the theory course and test as well as the subsequent practical test required in order to obtain an Airside Traffic Permit. Every person holding an Airside Traffic Permit must pass the refresher training required at least every 3rd year in order to have the permit renewed.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, in 2011 Copenhagen Airport established a mandatory, non-punitive / Just Culture and confidential reporting system with an incident reporting deadline of 24 hours.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: CPH retain the main grass areas with tall grass (above 50 cm) in periods with high numbers of Gulls and Lapwings. In the rest of the year, the grass length is between 21 and 30 cm. CPH is covering permanent water areas with nets, and works towards a reduction of any temporary fresh water pools. Additionally CPH wants to reduce the wooded areas known to attract Wood Pigeons, Magpies and Crows.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Pyrotechnics, shotguns, dogs, green lasers, traps for Crows and distress calls.
6.4 Do you carry out a bird strike risk assessment? Yes, monthly, and a revision of the risk values for the birds is carried out once a year.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes and the bird controllers log their activities at least twice an hour.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes with hares and they are being reduced to the lowest possible number by a regular hare shooting.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2 Rosenbauer Panther 6x6, 11.000l water, 225 kg dry powder, HRET nozzle (2008); 1 Rosenbauer Panther 6x6, 12,500l water, CAFS (2007); 2 Volvo FM 12 6x6, 12.000l water (2003 & 2004).
7.2 Future developments – are there plans to purchase or dispose of any equipment? Purchase a Rosenbauer Panther 6x6, 12,500l water, CAFS. Dispose of 1 Volvo FM 12 6x6, 12,000l water.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November – April.
8.2 Average annual days of snow: 11 days.
8.3 Average snow depth: 10cm.
8.4 Maximum snow in 24 hours: 42cm.
8.5 Annual number of days of de-icing activities: 91 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 50 airport employees and no sub-contractors.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Sweepers: 8 units Øvreaasen RS400, 8 units Øvreaasen SB470 and 7 units Øvreaasen RS200; Snow blowers: 1units Schmidt slynge TS5, 1units Øveraasen TV 110- 150- 825S, 2 units Oshkosh H2718B, Highspeed, 1 units Viking UTV; Tractors: 4 units John Deere, 2 units Lundberg Hymas 7200 LSE, 2 units Caterpillar, 5 units Lundberg Hymas 4200 LS, 5 units Kubota 135 hk, 9 units Kubota 95 hk, 4 units Holder/Kubota; Friction tester: 2 units SAAB Friction tester; Anti-icer spreader: 2 units anti-icer Damman spreader (40 meter) and 1 unit Epoke 1520/SW5015, 3 units NIDO Stratos spreaders.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:
Number one priority: Primary runway and deicing platforms expected to be used, as well as adjoining holding positions and taxiways. Access road for deicing vehicles between the fluid tanks and the platforms; Access roads from fire stations to the runway system (including rescue road Sandumsvej); Aircraft stands (including bus-served stands and stands without air bridges), apron taxiways and areas where airline passengers walk on the apron. Note, the exact clearing order will be arranged between the Snow Superintendent and the Stand Allocation Unit, and subsequently coordinated with Naviair/Apron during the snow clearing process. On Apron East the clearing process will be arranged based upon the actual traffic information available. The operational area on each aircraft stand, i.e. an elongated area along the stand centerline which must be swept and cleared in order to ensure that the aircraft and the pushback tug can manoeuver, and that ground handling can take place securely.
Number two priority: Secondary runway with adjoining holding positions and taxiways; Access road to collecting tanks at Deicing Platforms A, B and V.
Number three priority: Third runway; Remaining taxiways; Secondary aprons and maintenance areas; Other areas for pedestrians.





11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Field Service and TOWER will make mutually arrangements when inspections, friction measuring, and the initiating of winter services are required on the Maneuvering Area. A column of snow clearing equipment typically consists of a foreman in a leading car (Friction-tester, 12 sweepers, 2 blowers and 1 de-icer Damman (40 m). This makes it possible to clear a runway in "one run" in 15 minutes. During snowfall and sleet, Field Service will usually arrange with TOWER if Runway 12/30 should not be used for taxiing until swept and cleared. This helps to prevent the formation of frozen ruts and ridges on the runway surface which usually proves very hard to remove afterwards. Braking action is measured by a SAAB Friction Tester vehicle using high-pressure measuring wheel. The measuring equipment is calibrated for a full runway length, and if the measuring process is interrupted, it must start again from the beginning. In a normal snow clearing process Runway 04R/22L and Runway 04L/22R can be cleared to a width of 55 - 60 meters. Whereas Runway 12/30 can "only" be cleared to a width of 45 meters (i.e. full runway width, excluding shoulders). Typically, the shoulders of Runway 12/30 will not be cleared until later when time is available. The clearing process will continue until all ice deposits are removed on the Runways. Following each snow clearing, ETG will inspect the lights on the particular runway, before it is released by ETG. Field Service must, as far as possible, take care that snow is not thrown into the ILS critical areas, and that visual aids (signs) are not covered by snow. If this cannot be avoided, clearing or leveling of the particular areas will be initiated immediately afterwards. When passing the deicing platforms, the driver of the snow thrower must take care that snow is not thrown onto the platform surfaces, as large quantities of melt water may cause the fluid collection tanks to run over, thereby closing the platform. The Snow Superintendent arranges with Naviair/APRON and the Stand Allocation Unit when inspection, friction measuring and snow clearing is required on the aprons. Arrangement of the order in which snow clearing takes place on aircraft stands is normally coordinated between the Snow Superintendent and the Stand Allocation Unit. Special requests should be directed to the Stand Allocation Unit, which then will forward them to the Snow Superintendent. Use of apron sections for temporary storage of snow or equipment is arranged between the Stand Allocation Unit and Field Service. Depositing of snow must not take place on the deicing platforms. Communication on FM Channel 3 is managed by Naviair/APRON. When required due to the weather conditions the ground handlers and airline operators must make arrangements to ensure that necessary staff will be available for removal of the aircraft and tidying up of stands. If this is not possible, the Stand Allocation Unit must be notified immediately. Ground handling crews must tidy up the stands to prevent cables, wheel chocks or tipcones from being left behind. Such objects are likely to cause a major breakdown of a snow sweeper or snow blower, if ingested during the clearing process. The users may be notified via SMS in case Field Service expects an increased winter service readiness level, which may require extraordinary summoning of ground staff. User registration to the SMS-notification service can be achieved by e-mailing the Traffic Manager. As the SMS system may be unreliable at times, the users are reminded that they are still responsible themselves for keeping updated on current weather forecasts via the medias.

11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 15-20 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Primarily formiate-based thawing agents are used for combating snow and ice on runways and taxiways. This includes: Aviform L50, a liquid potassium-formiate product which is used for deicing of runway, taxiway, and apron surfaces, as well as humidifying of granulates. CAS-No. 590-29-4; Aviform S–Solid, a granulated sodium-formiate product which is used for deicing of runway and taxiway surfaces, and which is humidified with Aviform L50. CAS-No. 141-53-7. Both agents comply with the international SAE AMS 1431B/1435A standard. For the record the CPH practice regarding use of Aviform L50 takes fully into account the potential risk of reduced holdover time for aircraft anti-icing agents when mixed with runway deicing fluids, as discussed in EASA Safety Bulletin No. 2010-26R1, dated 23.02.2011. Quantities used last year: Aviform L50 = 500.000 L; Aviform S-Solid 100.000 kg.

12.2 Comment on storage capabilities of the chemicals that you use: Liquid de-icer is stored in 2 x 55.000 litres tanks; S-Solid in stock 30.000 kg.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Aviform S-Solid is mixed in ratio 1:1 with Aviform L50 to avoid "blow-away" and thereby provide high efficiency.

12.4 Have you experienced any corrosion problems with de-icers? No - CPH has not experienced corrosion problems above normal, when performing corrosion control programs.

12.5 Have you employed any special means to economise on chemical use? Yes – CPH can keep the use of chemical down to a minimum, due to the very good weather forecasts from our "Forecast module", which makes it possible to economise on chemical use.

12.6 Do you have any other comments on experience with chemicals? Yes - We are testing the use of Aviform L25 and a mix of Aviform L50 with 50% water for use in non-Aircraft zones.

12.7 Do you use other chemicals or sand on operational areas? The following can be used: Quartz sand (in accordance with the national snow plan in AIP Denmark, the grain size of the sand used must not exceed 0,4 millimetres); Sand containers for common use are distributed all over the apron area; Ordinary road salt (sodium chloride) may still be used on some isolated parts of the airport which are properly screened-off from areas with aircraft traffic. Note, road salt must not be used on airside roads and open spaces situated within 50 meters from the edge of areas with aircraft operations, and where there is an obvious risk that vehicles may drag saline particles onto aircraft stands, taxiways, or runways.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: The Ice Warning System is a Vaisala system. The system consists of 28 surface sensors. Data is collected via a TCP/IP network. It is implemented in the national system for Road authorities in Denmark and can be seen via the internet.

13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.

13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No comment.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No, aircraft de-icing is provided by handling agents.

14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We have dedicated de-ice positions.

14.3 Is glycol recovered? If so, please state methods: The de-icing platforms are connected to a drainage system, from where the used glycol is collected in tanks and transported for use in a local wastewater treatment plant. No re-use at the airport.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? 2 units of the SFH Saab friction tester.

15.2 Have you any comments on the reliability of friction indexes? Full reliability.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? New methods and patterns in the column of sweepers / snow blowers are continuously tested to obtain more effective results.

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No comment.

16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No comment.

16.4 Do you have any winter services equipment that you would like to sell? No comment.

DUBROVNIK

DUBROVNIK AIRPORT
ZRAČNA LUKA DUBROVNIK

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Dubrovnik Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY12: 3300mx45m, TORA 3300m, TODA 3300m, ASDA 3300m, LDA 3150m; RWY30: 3300mx45m, TORA 3300m, TODA 3300m, ASDA 3300m, LDA 3300m.

2.2 Landing aids for each RWY (e.g. CAT II): RWY12: CAT I 900m W VRB LIH, PAPI 3 L/R; RWY30: SALS 420m R VRB LIL, PAPI 3.2 L/R.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following





the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, risk and hazard identification is preventive part of our SMS and it is under constant improvement also, according to the reappraisal of risks and hazards identified by internal/external SMS audits.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All airside pass holders have FOD awareness training as a part of Airside Safety course.
b) Inspection by airline, airport, and airplane handling agency personnel: Regularly, two times per day (before airport opening and immediately after sundown) and before any movement of aircraft in case of absence of movements for more than one hour. In case of bad weather conditions checks are performed more often. Also, parking stands are checked every time before parking of aircraft is performed and before aircraft engine starts.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping, carpets, FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Safety promotion/FOD awareness is discussed on ASC meetings.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): All data related to FOD control is recorded in internal software on which analysis is conducted.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Visual and radio communication method.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: None.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airside Safety training is mandatory for all airside pass holders.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Due to increased herring gull-activity on and in the vicinity of aerodrome, we have short and long-term measures and procedures defined in the Aerodrome Manual, chapter 4.12.
6.1 Do your staff attend recognised bird control training courses? No.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? They are working continuously as a part of the Rescue and Firefighting brigade.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): 1 rocket pistol (Pistolet lanceur calibre 18.6mm, multi-propulsion), 3 gas cannons (Guardian 2), pyrotechnics, shotguns.
6.4 Do you carry out a bird strike risk assessment? Yes, according to the data collected during daily monitoring activities and bird strikes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: ZIEGLR MAN (FLF 60/91-11), 6x6, 9100 L/water, 1100 L/foam (2002). ROSENBAUER – OSKHOSH (FLF 10000), 6X6, 9000L/water, 1000 L/foam, 250 kg/powder (1982). ROSENBAUER – TITAN (SIMBA), 8X8, 11600 L/water, 1200 L/foam, 2000 KG/powder (1985). MAZDA – ZIEGLER PICKUP, 4x4, 200 L/water, 10 L/foam (2009).
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No FTS available.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 31 October – 31 March.
8.2 Average annual days of snow: 1-2 days.
8.3 Average snow depth: 1-2cm.
8.4 Maximum snow in 24 hours: 5cm.
8.5 Annual number of days of deicing activities: 1-2 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? No dedicated winter service personnel available. In case that some are needed, GHA ground support equipment drivers and RFF staff form a winter service unit.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow plug 3 units; sweeper truck 1 unit; urea spreader 2 units.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1-RWY (12-30), 2-TWY (B, C), 3-APRON (STANDS P8-P12)
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: They are not defined.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Since we have snow very rarely we do not have exact information but we expect to achieve it in 3-5 hours.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Urea, 1000 kg.
12.2 Comment on storage capabilities of the chemicals that you use: None.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: None.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? Yes, sometimes we use sand or salt on apron area.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: None.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes, IVECO – BLUMENBECKER 100E15, 1 unit.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We do de-ice the parking area.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? AEC AB SYSTEM BV-11 Skiddometer.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

DÜSSELDORF

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Flughafen Düsseldorf

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surfaceareas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway System: Southern Runway: 05R/23L, 3,000m; Northern Runway: 05L/23R, 2,700m; Apron: 722,329m^2.
2.2 Landing aids for each RWY (e.g. CAT II): CATI/ II/ IIIa-b-c.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, the Airport Safety Management team is permanently involved in risk Monitoring internally and externally.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Licence to drive and work in security area required, with special consideration of FOD awareness.
b) Inspection by airline, airport, and airplane handling agency personnel: Everyone has the duty to prevent FOD.





c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): sweeping, magnetic bars, FOD Containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airport Control Centre.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Traffic is controlled by marshals and the Traffic Manager, with the ability to eliminate driving licences and advise a second driving test.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Traffic Control weeks with flyers and posters.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS and AMASS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Painted signs, lighting and low cost facilities.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Refresher courses in first aid and fire protection, and special licences for security personnel.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, incidents are filed in the Safety Management system.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: A professional hunter has his own station near runways. Flocks of birds are chased off by the marshal.
6.1 Do your staff attend recognised bird control training courses? No.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Ammunition with calibre 4/26, five shoot by signal pistols manufactured by Heckler & Koch, pyroacoustic technology.
6.4 Do you carry out a bird strike risk assessment? No.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? A hunter report.

7. CRASH FIRE RESCUE

7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? It starts with the first winter operating and ends with the last, usually from November to March, though there may be exceptions.
8.2 Average annual days of snow: 5 days.
8.3 Average snow depth: 2cm.
8.4 Maximum snow in 24 hours: 2cm.
8.5 Annual number of days of de-icing activities: 90 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 33 people.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 14 sweeping blowing equipment, 5 spraying vehicles, 2 snow blowers and 3 celebration substance straw vehicles are available for snow and ice clearing at Düsseldorf airport for winter 2012/13, as well as 14 pieces of sweeping and blowing equipment, 5 spraying vehicles, 2 snow blowers and 3 substance vehicles. 200,000 litres of Aviform L50 of Addcon Nordic will be used.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1.RWY; 2.TWY; 3.Aircraft de-icing areas; 4.Apron; 5.GAT.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: 200,000l Aviform L50 by Addcon Nordic, then 200,000l Clearway F1 by Kemira used as a de-icing remedy for taxi and runways. After that de-icing, Aviform L50 by Addcon Nordic will be used again.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Not available.
12.2 Comment on storage capabilities of the chemicals that you use: More than 200,000 litres.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: No comment.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: None.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: None.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 10 Vestergaard "Elephant Beta" vehicles with 8,000 litres capacity.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? There are dedicated de-icing areas east to west, depending on runway direction.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SAAB Friction tester and VOLVO Friction tester by Sarsyss and DC.
15.2 Have you any comments on the reliability of friction indexes? Yes, please contact Conrad Thätner on thaetner@adv.aero.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

EXETER

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Exeter International Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 08: 2076x46m, TORA 2037m, TODA 2255m, ASDA 2037m, LDA 2037m; RWY 26: 2076x46m, TORA 2076m, TODA 2657m, ADSA 2073m, LDA 2037m.
2.2 Landing aids for each RWY (e.g. CAT II): CAT I for both runways.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Airport SMS began in 2002 and is reviewed annually. Following audit, changes in procedures may occur. Exeter also holds ISO 9001, 14001 and 18001 accreditation.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All Airfield Operations & Bird Control staff trained as required, and assessed annually. A member of the Airfield Operations team holds the role of FOD Officer to monitor FOD found, investigate and stop source and raise general FOD awareness across the airport.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport personnel.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD Boss and mechanical sweeper on an ad-hoc requirement basis. FOD bins across airfield.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Quarterly Airfield Users and Apron Users Safety Committees.
4.2 General: Are there any special systems or software solutions you employ





for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? VCR.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): N/A.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: All runway hold points have Designator, Enhanced Centreline and Runway Ahead markings installed as per CAP168.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airfield training and campaign awareness to all airside users. A two-tier airfield driver permit scheme is also in place.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes via the Local Runway Safety Team and promotion of a "no-blame" safety culture.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Long grass policy employed, consultation with local landowners and general wildlife management.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously during daylight hours.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded distress calls from Scarecrow Bio-acoustic Systems, pyrotechnics and shotguns.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Combined wildlife management programme.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 3 Cobra major fire appliances.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? N/A.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November – March.
8.2 Average annual days of snow: 2 days.
8.3 Average snow depth: 4mm.
8.4 Maximum snow in 24 hours: 17mm.
8.5 Annual number of days of de-icing activities: 7 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 8 people.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 4 ploughs, 1 Sicard snow blower, 1 CJS 720 and 2 Runway de-icers.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runways 08 and 26, Taxiway Bravo, main Apron, Taxiway Charlie, Taxiway Echo, Taxiway Alpha, Taxiway Golf.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 2-6 hours.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Konsin and Isomex.
12.2 Comment on storage capabilities of the chemicals that you use: As required.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: No comment.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? Improved metering.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: N/A.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Provided by Flybe Engineering.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Parking areas.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? N/A.
15.2 Have you any comments on the reliability of friction indexes? N/A.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

FARO

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Faro Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY: 2490X45m, TORA 2490m; TWY A/B/C1/C2/D/E/F/P/RD/RG: 23m; Main apron: 271,061m2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 28 – CAT II – (Waiting for INAC - Portuguese Authority approval).

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No. New reporting system implemented.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: No stand-alone training program. FOD training is included in the Airport Rules and Regulations Training.
b) Inspection by airline, airport, and airplane handling agency personnel: Permanent inspections by airport operations.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airport uses sweepers with FOD bins at all parking positions.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination and reporting done by airport operations.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements in maneuvering area are controlled and coordinated by local ATS (TWR). ATS (TWR) and Airport Operations have a local protocol to regulate the remaining airside of airport.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Apron breakaway points to clear aircraft taxi in and out of parking positions.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Aircraft movement control during low visibility operations (CAT II), with an active taxiway lighting guidance system and intermediate holding position lights, stop bars and microwave beams.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: ICAO - Annex 14: Markings, signage and lighting installed. Runway guard lights are also installed.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All drivers have an initial training program, with yearly safety campaigns involving major handlers and all drivers.
5.6 Have the reporting procedures for runway





safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Reporting procedures according National Law and the EU Directive 2003/42.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Habitat management policy includes: Drainage of accumulated rainwater; vegetation maintenance (to maintain height the trees are cut back near the runway or taxiway centre line); priority given to unattractive vegetation species and minimising of shelter points (holes in walls are covered, application of measures to avoid nesting).
6.1 Do your staff attend recognised bird control training courses? The environmental department issues seminars integrated in safety campaigns.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes. Dedicated bird control staff operate from sunrise till sunset.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird control uses gas canons, falconers, recorded distress calls and pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. The bird strike database and census for species, bird movements and bird flocks is lead by Faro Airport Environment Department.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2 Oshkosh Strikers: 12,000l water, 1,500l foam, 250kg dry chemical powders; Oshkosh T1500: 6,000l water, 776l foam, 320kg dry chemical powders 68 halon; Titan E-One: 120,000l water, 1,500l foam, 230kg dry chemical powders.
7.2 Future developments – are there plans to purchase or dispose of any equipment? 1 CFR vehicle by the end of 2017.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? N/A.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? N/A.
8.2 Average annual days of snow: N/A.
8.3 Average snow depth: N/A.
8.4 Maximum snow in 24 hours: N/A.
8.5 Annual number of days of de-icing activities: N/A.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? N/A.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): N/A.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: N/A.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: N/A.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? N/A.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: N/A.
12.2 Comment on storage capabilities of the chemicals that you use: N/A.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: N/A.
12.4 Have you experienced any corrosion problems with de-icers? N/A.
12.5 Have you employed any special means to economise on chemical use? N/A.
12.6 Do you have any other comments on experience with chemicals? N/A.
12.7 Do you use other chemicals or sand on operational areas? N/A.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: N/A.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? N/A.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: N/A.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? N/A.
14.3 Is glycol recovered? If so, please state methods: N/A.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? 1 Mu-Meter and 1 ASFT.
15.2 Have you any comments on the reliability of friction indexes? No comment.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? N/A.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: N/A.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: N/A.
16.4 Do you have any winter services equipment that you would like to sell? N/A.

FRANKFURT

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME:

Frankfurt Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY 07L/25R – 2800m x 45m LDA 2800m
RWY 07C/25C – 4000m x 60m TORA 4000m
RWY 07R/25L – 4000m x 45m TORA 4000m
RWY 18W – 4000m x 45m TORA 3970m
Total RWY surface area: 726,000 m2
Total apron surface area: circa 2,000,000 m2
2.2 Landing aids for each RWY (e.g. CAT II): ILS, PAPI and CAT I – II/III

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? The Safety Management System (SMS) for the Frankfurt Airport is being continuously developed and includes the results of our Risks and Hazards Identification Process determined by our SMS audits and risk analysis.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Removal and prevention of FOD is a theme that is communicated to all persons trained or in training for work in the movement area as well as all other participants.
b) Inspection by airline, airport, and airplane handling agency personnel: All parties operating in the movement area are responsible, per Airport User Regulations, for the prevention and removal of FOD. Ground servicing companies and airline personnel are directly responsible for the prevention and removal of FOD on the aircraft positions they service. Frankfurt Apron Supervision inspects apron areas continuously 24 hours a day and orders clean up details as needed. Fraport Apron Control conducts regular inspections of the manoeuvring area conducted on a 24 hour basis at least every 4 hours and when necessary. Additionally inspections and observation are conducted by the Airport Duty Manager.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The movement area is serviced at regular intervals and when required by surface sweeper vehicles with magnet bars. Other apron areas are continuously cleaned with surface sweeper vehicles. Hot Spots in the movement area and apron (e.g. equipment parking areas) are cleaned manually. Additionally a FOD*BOSS duplex system is utilised by our Apron Supervision in the apron areas.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airside Operations is responsible for the daily operational safety of the movement area and guarantees the cleaning of surfaces per company contract with our Facility Management Dept. and initiates immediate remedial action when necessary. Additionally FOD is a constant theme at the AOC level communicated by Airside Operations to participating airlines and ground handling companies.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No. Fraport AG is interested in installing an FOD detection system.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Primary methods consist of traffic control conducted continuously by Apron Supervision (Follow-me) in the movement area





and Airport Security conducting vehicle traffic control in the apron area. ACFT ground traffic is controlled visually and per radio guidance. Additionally, ACFT ground traffic is controlled utilizing system described in section 5.3.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Changes in the traffic scheme such as markings, signs and lighting are made when real or perceived hazards exist or to improve vehicle and aircraft traffic flow.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): FRA Apron Control and German ATC Tower utilises a combined SMR and multilateration radar system for tracking aircraft and vehicle movements in the manoeuvring area. FRA requires all vehicles that are designated to drive in the manoeuvring area to be equipped with Mode-S Transponders.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Frankfurt Airport constantly upgrades infrastructure such as lighting, stop bars and markings designed in part to prevent runway incursions and increase safety. FRA has installed RWY vacated signs at the RWY turn offs that illuminate when aircraft have vacated the RWY and are a visual for the pilots.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Frankfurt Airport Airside Operations regularly reviews standard operating procedures and conducts runway safety workshops with German ATC and airlines to find solutions designed to reduce the risk of runway incursions.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Frankfurt Airport Airside Operations has a good working relationship with German ATC and airlines concerning reporting procedures and finding solutions. FRA in general cultivates a "No Blame" culture unless naturally the incursion or incident demands disciplinary action.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: The bird control program at Frankfurt Airport is carried out by the airport operator Fraport AG in accordance with national laws and International practises for aerodromes and based on recommendations of the German Airports Association (ADV). One of our main policies is to manage habitat conditions to influence the bird population in a qualitative and quantitative way within the area critical to air safety around the airport. One practice is to replace large birds with smaller birds and manage plant life so as to discourage bird populations. Direct dispelling measures (e. g. Pyroacoustics) are only applied if there is possible danger or in cases of explicit danger leading to calamities.
6.1 Do your staff attend recognised bird control training courses? We have company staff that are trained and responsible for dealing with bird and animal control, work out operational procedures, and keep operational staff informed.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Our staff conduct continuous monitoring of the airfield and initiate action when necessary.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Frankfurt Airport utilises pyroacoustic equipment and controlled hunting.
6.4 Do you carry out a bird strike risk assessment? At the national level a Bird Strike Risk Forecast System has been established and provides our Bird Control Officer with useful information. Furthermore risk assessment for our aerodrome is carried out by our Bird Control Officer according to experience gathered.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All aspects of bird control are documented in detail.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Frankfurt Airport has modified the perimeter fencing to minimise wildlife entering the movement area and is inspected regularly. This has eliminated past difficulties with wildlife.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2x Z8XXL, 5x Simba 6x6, 5x Simba 8x8 plus a multitude of CFR vehicles and equipment for fire fighting, salvage, power generation, mobile emergency operations coordination, HAZMAT Controll etc.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Additional crash trucks for our new fire station that will service the new runway are to be delivered this year.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Our Fire Brigade has a Fire Training Simulator and does offer training to other airports.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November 15 to March 31.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 105 plus depending on actual weather conditions. Number of personnel includes airport- employed and contracted.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, deicing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Compact Jet Sweepers/ co. Schmidt: Jet Sweepers RS200/400/ co. Overaasen, Snow Blowers/co. Schmidt , Overaasen and Kuepper-Weisser: Diverse deicing vehicles for spreading sand, solid and fluid deicing materials/co. Schmidt, Iveco and Kuepper-Weisser. Diverse trucks, tractors, fuelling vehicles, plows/ Schmidt, Kuepper-Weisser and Iveco, 4X Surface Friction Tester (SAAB).

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Following information states facility and priority respectively:
Active runways and main taxiways in the manoeuvring area
ATC landing aid sender areas
Taxiway centre lines
Aircraft servicing areas
Passenger bridge manoeuvring areas
Areas used for parking ground servicing vehicles, equipment and transfer cargo and post
Main apron roads
Public roads, pedestrian paths, and parking areas
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY clearing convoy consisting of 9-14 snow sweeper-plough vehicles, 1- 2 snow blowers, 2 de-icers and 2 guidance vehicles (back and front). Vehicles lined up diagonally to clear the runway in one run. After Vehicles have vacated the RWY a Friction Measurement run is conducted. Smaller convoys and flexible vehicle combinations for clearing and de-icing taxiways and apron areas.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? We have set average clearing times for closing and clearing the runways. We generally get the job finished in the allotted time frame unless we experience severe weather conditions (e.g. continuous heavy snowfall).

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: AVIFORM L50 and AVIFORM S-Solid, Clearway F1 and Clearway SF3, Safeway KF-Hot. Holdover times generally vary according to temperatures and snowfall intensity und can only be quantified after operations are complete.
12.2 Comment on storage capabilities of the chemicals that you use: Our operational capacity is 700,000 litres with 1.9 million litres in reserve, stored at the aerodrome. The chemicals are stored in tanks that meet German environmental and safety regulations.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: We only use solid deicing chemicals in extreme weather conditions because of the so called "blow-away factor" and environmental restrictions. If we use solids then it is pre-wetted before application. Our goal is always to use the optimal mixing ratios adapted to prevailing surface conditions when we have to use them. We only use solely solid chemicals in emergencies (ice build-up).
12.4 Have you experienced any corrosion problems with de-icers? We generally experience the usual problems that every airport has with GSE etc. To minimise corrosion we paint and wax our winter service vehicles. The products we use have corrosion inhibitor additives.
12.5 Have you employed any special means to economise on chemical use? We have installed a GPS based Surface Management System in order to document all activities and gain live operational control over vehicle movements and chemical application. We are also restricted to 25gr m^2 by our Environmental Authority. We also utilise an Ice Early Warning System, friction measuring results and weather forecasts from the German Weather Service to optimize the use of surface de-icing chemicals.
12.6 Do you have any other comments on experience with chemicals? As other airports we experience a manageable level of corrosion and naturally innovate as much as possible to reduce amounts of chemicals used.
12.7 Do you use other chemicals or sand on operational areas? Due to environmental issues some sections of the Movement area are sanded. We use only the chemicals mentioned above.





13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: VAISALA ROSA system "Ice View" and is installed in the manoeuvring area and taxiway bridges. System consists of weather stations and surface sensors.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: It is a good tool for assessing the condition of RWY surfaces but is only secondary information for decision making. We still depend primarily on weather forecasts and actual assessment of surface conditions.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Aircraft de-icing is carried out by our service provider N*ICE. N*ICE can conduct aircraft de-icing operations up to A380 aircraft. 58 vehicles are available for operations.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Frankfurt Airport has 2 active De-icing Pads and 2 dedicated de-icing surfaces with no towing required. Due to traffic flow control aircraft de-icing is carried out on aircraft parking areas if necessary.
14.3 Is glycol recovered? If so, please state methods: To the most part glycol is captured along with drainage run-off and retained in special reservoirs, treated on site before being released to the city sewage plant. Position areas are cleaned of glycol using surface sweeper vehicles and is considered to be chemical waste and treated accordingly.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? SAAB 9.5 "SarSys" Surface Friction Tester (SFT) vehicles.
15.2 Have you any comments on the reliability of friction indexes? An international standard for Friction Indexes and reporting of such would be invaluable for the Aviation Industry.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? FRA is continuously working on reducing clearing and de-icing times by improving and setting standard driving routes used in the manoeuvring area and grouping of vehicles in the convoys.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

GENEVA

GENÈVE AÉROPORT

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Genève Aéroport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway 05/23: Concrete 190'000m2. Taxiways: Concrete 190'557m2. Apron: Concrete 596'100m2. Parking: Asphalt 107'835m2.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 23 is equipped for approaches in CAT I/II/III; Runway 05 is equipped for approaches in CAT I; the missed approach procedure use the VOR/DME of SPR and GVA.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Genève Aéroport (GA) is implementing a SMS in several phases. This phased approach is in line with the ICAO guidance as well as requirements defined by the Swiss Federal Office for Civil Aviation. A full scale SMS is currently implemented including all key processes. These include reporting, hazard identification and risk management, change management, safety promotion and training activities and audit process. The SMS undergoes continuous improvement and modifications in order to become more efficient and proactive. The aerodrome manual of GA, which contains over 180 operational procedures, has been accepted and certified by the Swiss Federal Office for Civil Aviation (FOCA). GA received its initial Aerodrome Certificate in December 2006 and underwent recertification, according to ICAO standards, in November 2010. The aerodrome certificate is now valid for 3 years with a recertification audit planned for 2013. EASA certification standards, according to the new EASA rules for aerodromes, are currently under study in order to be ready for the future processes.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: N/A.
b) Inspection by airline, airport, and airplane handling agency personnel: Runway inspections are carried out six times a day. All aircraft positions are swept once a day. The Apron is swept two times a week. The Links are swept two times a week. The Taxiways are swept once a week and the Runway is swept once a month, or on request.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): All positions are checked for FOD before arrival and on departure of the aircraft. Sweepers and FOD containers are used.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The FOD inspection is carried out in coordination with multiple airport users.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No special systems or software are used.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The primary method of monitoring vehicle and aircraft movements on the ground is visual observation.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Runway incursion protection equipment currently installed: Alternating yellow lights installed at CAT I holding point (A, G); "Mandatory RWY markings (23-05) are painted at all CAT I holding points, in accordance with FOCA guidance; Wig-wag lights are installed at all CAT I holding points; Lighted red stop bars are installed at all CAT II/III holding points (used only in LVC); ICAO standard signage and markings at all RWY entrances.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): An A-SMGCS (level 1 and 2) based on Park-Air with a Sensis multi-lateration system and Terma SMR is used as an additional monitoring tool.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: On the two north taxiways (Y, Z), wig-wags have been installed. Due to proximity between the runway and the apron, stop bars on taxiways C, D, E are always illuminated. A-SMGCS level 2 is implemented.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Two specific programs for drivers are in place (apron and maneuvering area).
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? All incidents on the maneuvering area are reported and analysed by the Safety Office according to the directives of the Swiss regulatory authority (Federal Office of Civil Aviation) based on ESARR.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: At GA the following ecological measures are predominate: Grass cut to a height between 15 and 20 cm; Elimination of trees and bushes along runways; The use of liquid or solid manure or residues from waste treatment plants is prohibited; Tilling of the soil and cultivation of cereal crops is not permitted; Presence of stagnant or exposed water avoided (drainage); Nesting control; Building and infrastructure adaptation.
6.1 Do your staff attend recognised bird control training courses? Yes, the staff attends specific courses but also provides special wildlife management training courses trough the "Airtrace" training centre: International master's programme for Wildlife Hazard Prevention Specialists; International bachelor's programme for Wildlife Hazard Prevention Agents; Introduction to Wildlife Hazard Prevention Course; Informational seminars on wildlife hazard prevention;
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? The wildlife hazard prevention unit works from dawn till dusk every day of the year. Bird watching and daily reports of species present in the airport enclosure take up most of the daily activity. All collected data is recorded electronically.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Exploding cartridges (6 and 9 mm); Whistling cartridges (6 and 9 mm); Mid-range exploding cartridges (26.5 mm); Long range silent - then exploding - rockets (Lacroix Capa) discharged from Revolvers; Bird scaring laser (handheld); Acoustic broadcasting of natural and synthesized distress calls (mobile recorder and speaker, in the car); 30 stationary





units of electronic generators Efbitech 300W and 2 units mobile, fixed on a trailer; Bird strike prevention vehicle fully equipped with different net, cage, disinfectant, insecticide.
6.4 Do you carry out a bird strike risk assessment? Activities are saved in real-time in the prevention vehicle thanks to a database system specially dedicated to wildlife hazard management (software called AWHM : Airport Wildlife Hazard Management). A general report including all the activities of the wildlife hazard prevention unit is published every two years. In addition, statistics are published which include precise records of bird strikes and wildlife observations. The wildlife hazard prevention unit is audited several times a year according to the environmental, quality and safety system, certified ISO 9001, ISO 14001 and OHSAS 18001.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All the activities, bird strikes, bird watching activities and works undertaken in the airport enclosure are centralized and recorded electronically in a daily report. All data is available at any time. Once a week, the environmental engineer in charge of Wildlife Management Unit examines the daily reports and inscribes the specifics activities of the agents (time, person, radio calls, intervention, solution) in a special log report.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Exceptionally an animal succeeds in forcing the fence and creating a hazard for the aeronautical traffic. For this type of intervention, special procedures are in place with the local authorities to assure the capture and the elimination (if necessary) of the animal (department for the protection of nature and landscapes).

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Subaru command vehicle 4x4 (2003); Subaru headquarters vehicle 4x4 (2004); Ford Duty Officers vehicle 4x4 (2011); Mercedes PCI Transmission vehicle (1992); Mercedes Fire Duty Officer's vehicle 4x4 (1997); Ford Transport and escort vehicle (2006); Smart Escort vehicle (2004); Opel Transport and escort vehicle (2007), Suzuki Head quarters vehicle 4x4 (2006), Smart Infirmary vehicle (2003); Toyota Auris Escort vehicle (2011); Toyota Aygo Escort vehicle (2011); Rosenbauer MAN Extinguishing vehicle, 12,500l water, 1,500l extract (2005); Rosenbauer MAN Extinguishing vehicle, 12,500l water, (2000); Rosenbauer MAN Extinguishing vehicle, 11,000l water, 1,500 extract (2008); Iveco Bridge, 1,500l extract, (2006); Vogt Mercedes Extingushing vehicle, 4,000l water, 500l extract, (2004); Mercedes Rosebauer MAN loading vehicle for extinguishing vehicle, 12,500l water, 1,500l extract (2003).
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Geneva International Airport currently does not use a fire-training simulator, but its installation is foreseen.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 November to 15 April.
8.2 Average annual days of snow: 16 days.
8.3 Average snow depth: 14cm.
8.4 Maximum snow in 24 hours: 5cm.
8.5 Annual number of days of de-icing activities: 119 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Command personnel x3, Command vehicles x3, Snow removal Runway + Twys x16, Snow removal Apron x16, Snow removal line x4, Friction measurement x2, Maintenance (2 stand by) x4, Snow removal access roads x4.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 1 4x4 Mercedes Unimog truck; 2 4x4 Mercedes 360cv trucks; 2 6x4 Mercedes 400cv trucks, 7 Bucher P21 sweeper blowers; 5 Boschung (Jet Broom) Runway sweeper blowers with snow blades (8m); 2 Boschung (Jet Broom) with Sprayer sweeper blowers with snow blades (6m); 5 Rolba rotary plows; 11 Zaugg 66 snow blades; 2 Peter 6m snow blades; 2 Zaugg 4.25m snow blades; 1 Zaugg 3.6m snow blade; 2 Boschung sprayers.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority 1: Runway, Priority 2: Taxiways, Priority 3: Apron South and Apron North "General aviation", Priority 4: Parking area and hangars.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Runway: Vehicles are aligned diagonally; Snow is pushed to both edges of the runway by trucks equipped with snow-blades and sweeper-blowers. The operation of snow sweeping including friction measurement takes 30 minutes. The duty officer coordinates the operation with the ANSP. Taxiways: Vehicles are aligned diagonally. Trucks equipped with snow blade and sweeper-blower push the snow to the edge of the taxiway. Apron: Vehicles are aligned diagonally; Trucks equipped with snow blade and sweeper-blower push the snow from the edges to the center of the Apron, loaders load the snow on trucks which evacuate it to the designated location.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? After moderate snow, the "black top" of the Runway is usually achieved in 15 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: De-icers quantities use during winter season 2011-2012: For RWY and TWY: Safeway KF Hot, 90 Tons; Safeway SF, 30 Tons. For Aircraft: Glycol type 1, 313'100l; Glycol type 2, 183'234l; Glycol type 4, 445'603l.
12.2 Comment on storage capabilities of the chemicals that you use: 75,000 litres of Safeway KF Hot in tank, 40 tonnes of Safeway SF.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: GA has reliable experience with solid de-icers or mixing ratios with liquids.
12.4 Have you experienced any corrosion problems with de-icers? GA has experienced some corrosion problems with de-icers.
12.5 Have you employed any special means to economise on chemical use? For three seasons, the quantities of product applied are optimised according to the weather (temperature, humidity). Each sprayer is equipped with the Boschung Thermomat system that spreads the chemical after defined curve and the pavement temperature. In 2012-2013, handling agents will also use pulsed air for de-icing in order to save litres of fluid.
12.6 Do you have any other comments on experience with chemicals? Safeway KF Hot is used since 2010 and Safeway SF since 1999.
12.7 Do you use other chemicals or sand on operational areas? GA does not use sand.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: We have sensors (active sensors to simulate freezing point and passive sensors for pavement temperature and humidity) that are installed on the Runway in 3 locations, coupled with two weather stations on each end of the runway. Those sensors and weather stations are reported to an airfield services supervisor who is also always informed about weather forecasts and levels of runway de-icing fluids. The sensor and the weather station equipment is from Boschung Switzerland. We have also equipped one of our ASFT friction testers with two freezing point active sensors.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: We have little experience due to the mild winter of 2011-2012. From what we could see, the system provides decision support.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: The Handling Agents carry out the aircraft anti/de-icing operations using special de-icing trucks.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We de-ice only on the parking area.
14.3 Is glycol recovered? If so, please state methods: Glycol is recovered by a truck which absorbs it on the apron. After use, glycol is put into a circuit where it is treated (no recycling).

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Two ASFT friction tester vehicles.
15.2 Have you any comments on the reliability of friction indexes? No comment is made on the reliability of GVA's friction index.
The two ASFT friction testers are certified before each winter season and the service reports sent to FOCA.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Currently no major changes are planned in the airport's winter operations and procedures. We introduce the electronic Snowtam to send information directly from the friction tester to the Airport AIS Unit (AAU).
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: GA has decided to buy 3 Boschung Jetbroom Sweeper blower with snow blade and 1 extra rotary snow plow .We also bought two GPS to





guide the snow plow during the cleaning of the Runway and Runway edge lights.
16.4 Do you have any winter services equipment that you would like to sell? No winter equipment is currently for sale.

GLASGOW PRESTWICK

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Glasgow Prestwick Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Dimensions: RWYs 13 and 31: 2986x46m; RWYs 03 and 21: 1825x45m. RWY 13: TORA 2986m, TODA 3170m, ASDA 2986m, LDA 2743m; RWY 31: TORA 2986m, TODA 3075m, ASDA 2986m, LDA 2986m; RWY 03: TORA 1905m, TODA 1999m, ASDA 1905m, LDA 1825m; RWY 21: TORA 1905m, TODA 2147m, ASDA 1991m, LDA 1905m.
2.2 Landing aids for each RWY (e.g. CAT II): RWYs 13 and 31: Code 4E, Precision Instrument Cat I; RWYs 03 and 21: Code 4E, Visual.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? The SMS at GPA is based on the HSE 'POPMAR' model and was written using guidance from ICAO SMS Manual and UK CAA guidance. It encompasses: Statements of Policy; Defined Safety Principles; Explicit Accountabilities; and Documented Procedures. The SMS policies and principles are laid out within the Aerodrome Manual and cascaded throughout individual departmental instruction manuals. The SMS is a continually evolving process and internal audits ensure that improvements are made where necessary.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD awareness and training on the cause and effects is included within the Airside Safety Training package, which is mandatory for all airside personnel.
b) Inspection by airline, airport, and airplane handling agency personnel: Airfield Operations staff carries out apron inspections. All staff are informed of their responsibility to pick up FOD where found.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): GPA utilises the following to mitigate against potential issues with FOD: Sweeping of all areas carried out regularly and when required with sweepers and FODBOS. The availability and requirement of sweepers during Surface or other works is identified during the risk assessment process; FOD bins in place at strategic locations; Staff trained (as highlighted in (a)).
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): All Handling agents receive training by GPA (as highlighted in (a)).
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): N/A.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements are controlled by GPA's Air Traffic Control unit, enhanced taxiway markings are used at some hold points (see item 5.4).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Continual pavement maintenance work to ensure surface PCN and friction values are satisfactory.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): N/A.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Markings, signage and AGL (including hold-stop bars and wigwags) installed as per Annex 14,'Runway Ahead' markings at strategic positions.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Training on risks included within driver training program; Airside Safety Awareness Training as a requirement prior to issue of a security pass and part of the induction process; Standing agenda item at relevant safety related committees.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Mandatory Occurrence Reports filed as per UK CAA requirements. An airport-wide incident and occurrence reporting scheme is being widened to contain more input and scope as part of SMS. Principles based on post-incident investigation, learning and education.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Long grass policy and grass management; Testing and spaying of Leatherjacket Lava; Weed Killing; Constant monitoring and disturbance; Reduction of wet areas; Culling; Education of staff and stakeholders; Working with adjacent Property and Land owners.
6.1 Do your staff attend recognised bird control training courses? All Airfield Ops staff are trained by an industry specialist and in house training is provided. (The UK CAA do not recognise individual training providers).
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Airfield Operations are continuously on the airfield performing inspections.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded digital audio distress calls (Scarecrow Bio-Acoustics); Firearms/culling; Signal pistol; Human dispersal (arms); Rockets (North West Bird Control); Shotgun shells (Game Sport, Ayr); Bird scaring cartridges (Prime Take).
6.4 Do you carry out a bird strike risk assessment? GPA operates the hazard system around the following policy documents: Bird & Wildlife Hazard Control Plan, Bird & Wildlife Hazard Risk Assessment, 13km survey document.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, in an official log book and on various reporting forms.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: We have 3 Appliances 6x6 Carmichael Cobra, 2 Detroit diesel 8 V92 2002, 10000l water, 1400 litres foam. Also have three 4x4 pick up vehicles, which carry no media.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Not at the moment.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No simulator for realistic fire fighting but have 747 aircraft which could be used.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 October – 1 April.
8.2 Average annual days of snow: Long-term average is very low. On a normal year less than 7 days, however, 2009 saw multiple weeks.
8.3 Average snow depth: Less than 1cm.
8.4 Maximum snow in 24 hours: 25cm.
8.5 Annual number of days of de-icing activities: 44 days in 2009, 16 days in 2010, 7 days in 2011.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? All Fire Station operational watches have personnel trained to carry out snow and ice duties, and the Fire Station staff cover the runway & taxi-way areas. The Ground services department carry out snow and ice duties within the Apron & walkway area, they have trained persons on shift at any time with the exception of nightshift operations when they have three trained personnel on shift.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Six Sicard – high speed brushers, five dedicated airport owned county tractors, three leased tractors for snow clearing, two runway surface de-icing rigs one drivable, one towed by tractor, one multi-car de-icing motorised vehicle, two snow blowers, two aircraft de-icing units.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Main RWY, TWYs, Aprons Alpha and Bravo.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Head vehicle – three Sicard snow blade brushers driven in echelon fashion.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? One or two hours.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season.





Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safegrip+ / ECO 2. Good performance if applied at the correct temperature, works as an anti-icing fluid.
12.2 Comment on storage capabilities of the chemicals that you use: 45,000 litre capacity pump-feed calibrated tank.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: No comment.
12.4 Have you experienced any corrosion problems with de-icers? Yes, the de-icing vehicles suffer if they are not regularly cleaned.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Pilot brief warning system, airport subscribes on annual basis – computerised system linked to national weather forecasting and met office reporting.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? GPA is currently investigating possible options.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes, two type 2 de-icing platforms fed by hot mixing tank.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? No comment.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Mu-metre.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes, our Runway de-icing formation has changed to improve efficiencies in time and performance.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

GOTHENBURG

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Goteborg Landvetter Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): TORA: 3299m, width: 45m, shoulder: 2x7,5m, total apron/ramp area: 100sqm.
2.2 Landing aids for each RWY (e.g. CAT II): CAT II - RWY03/21.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, a Safety Management System is clearly worded in the Airport Operations Manual - Chapter 6. Due to implementation of IAPPRI - and via the forum Flight Safety Group (Flygsakerhetsgruppen (4 meetings/year)) with representation/members from airline pilots, ATS, mechanics, airport vehicle operators and airport authorities - identification and action takes place on "hot spots" on airport manoeuvering areas and, should the occasion arise, the apron area.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Airside safety introduction training and airside driver licence training.
b) Inspection by airline, airport, and airplane handling agency personnel: Due current audits.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Yes, regularly.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes, forum Ramp Safety Group at the airport, which has four meetings a year.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? SMR Surface Movement Radar.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): New grade/version of SMR – Surface Movement Radar.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: No comment.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Integrated training on LVO/LVP situations, incorporating occupational groups with missions in the manoeuvering area, including identification of "hot spots". Implementation of EAPPRI - European Action Plan for Prevention of Runway Incursions.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? No.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes, as part of the Airfield Supervisor Assignments. Hourly and less than hourly, according to need.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded distress calls (mobile and fixed), laser (test), shotguns, warning-shots via gas cannon. Inflatable scarecrow called "the Hulk". Use of pyrotechnical equipments.
6.4 Do you carry out a bird strike risk assessment? According to need, in times of high activity, especially during early springtime, during bird migration.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, regular documentation.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Hares, foxes and badgers from time to time - we catch them in traps.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 2 Volvo F12s, 6x6, water 9200l, foam 540l. 2 A-Triple F (93/95).
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, we are to soon start a process to replace the old Volvo F12s with 2 new vehicles (Rosenbauer Panthers) in early 2013.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Not at the moment.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 October – 15 April.
8.2 Average annual days of snow: The days of snow were more than normal last year, but the average is approximately 50 days.
8.3 Average snow depth: 5cm.
8.4 Maximum snow in 24 hours: 40cm.
8.5 Annual number of days of de-icing activities: 60-70cm.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 9.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow sweepers: TJS (Towed Jet Sweepers): 5 Schmidt -TJS 560 D, 2 PSB 4500 H Vammas, 2 PSB 5500 H Vammas, 1 Schmidt / Broddway SCL Runway Light Sweeper; Snow blowers: Rahtikone 381-S, Schmidt - Supra 5001, 2 Overaasen – 430; De-icers: 2 Schmidt ASP – liquid, Falkoping CL 5 - sand/granulate solid de-icing, Epoke SH 3500 -sand/granulate solid de-icing.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway, roads for fire rescue, ILS area, taxiways, apron.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Five to nine vehicles (each giving one or two sweep(s) to clear the runway).
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Five vehicles - 20 minutes/nine vehicles - 10 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use,





along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Formiate, Aviform L50, 444 m3. Good, but need a higher quantity of liquid (change to Clearway from Winter 2012/13).
12.2 Comment on storage capabilities of the chemicals that you use: No problems.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Mixed is faster and more effective.
12.4 Have you experienced any corrosion problems with de-icers? Yes.
12.5 Have you employed any special means to economise on chemical use? Not in use.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No other chemicals, but sometimes we use sand.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Vaisala Ice Warning and Prediction System.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Not for the moment.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Not always reliable.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No. External ground-handling companies provide aircraft anti/de-icing operations.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Gate/parking area de-icing.
14.3 Is glycol recovered? If so, please state methods: Airport use two vacuum-cleaner vehicles to soak up liquid and deliver it into a new structure, following a system for reprocessing and cleaning.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? 2 SFH Surface Friction High Pressure.
15.2 Have you any comments on the reliability of friction indexes? They are in general credible.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: New order of one snowblower and one wheel-loader.
16.4 Do you have any winter services equipment that you would like to sell? Not for the moment.

GRAZ

FLUGHAFEN GRAZ
- und so nah ist die Welt.

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Flughafen Graz.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway: Dimensions 3000x45 m (left and right 7.5 m shoulders). (17C / 35C) with shoulders 3000x60 m, TORA 17C: 3000m; TODA 17C: 3060m; TORA 35C: 3000m; TODA 35C: 3000m. Grasrunway : 17L/35R and 17R/35L, Taxiways: A width 23m, B width 23m, C width 23m, D width 23m, X width 10m, Y width 15m, Gras Runway: S1, S2, S3, S4, G1, G2, G3, Aircraft Parking: 13 Positions for A/C Kat.C, other 4 Pos. Kat. D and 4 Pos. Kat. C, 2 Positions A/C Kat. E, 20 General Aviation Postions, 12 Positions for Kat. A, 6 Positions for Helicopter.
2.2 Landing aids for each RWY (e.g. CAT II): 35C: 35 C Cat II/III ILS
17C: 17 C NInst.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No. We have external audits from the BMVIT (Austria) concerning the SMS.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: N/A.
b) Inspection by airline, airport, and airplane handling agency personnel: The control of FOD is done by the Deputy Operations Officer. He arranges cleaning of the runway and taxiways with airblast sweepers.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The apron is cleaned by means of a cleansing mat.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): N/A.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? None.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Marks, stoppers and rolling hold.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Functioning very well, very few incidents.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Training of airside users.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? ANSB internal Occurense Reporting system, SMS Safety Management System.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: We write announcements about birds or the presence of other animals near planes and file this. We send them also to the authorities.
6.1 Do your staff attend recognised bird control training courses? No.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Shotguns and pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? No.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? No.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: OAF 6x6 (1993), 9000l water, 1000l foam; Panther 8x8 (2004), 12,500l water, 2000l foam, 500kg powder; OAF 4x4 (1998), 5000l water, 500l foam; OAF 4x4 (1990), 2000kg powder; Z8 (2010), 13,500l water, 1650l foam, 500kg powder, 180kg CO2.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We have no Fire Training Simulator.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From 1 October to 31 March.
8.2 Average annual days of snow: 12 days of aircraft de-icing.
8.3 Average snow depth: 10cm.
8.4 Maximum snow in 24 hours: 30cm.
8.5 Annual number of days of de-icing activities: 90 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 8 people.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 5 units airblast sweepers Bucher Schörling P17, 4 units airblast sweepers Överaasen RS 400, 1 unit snow blower Steyr TK 93 +Kahlbacher, 1 unit snow blower Bucher Guyer, 1 unit snow blower Grizzly Dt 52 + Kahlbacher, 3 units tractor with snow ploughs Steyr, 1 unit spreader for chemical de-icing Schmidt, 1 unit spreader for chemical de-icing Küpper Weisser.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway (17/35), Taxiway A,B,C,D, Apron, Taxiway X, Y.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Five airblast sweepers for runways.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 12 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Runway de-icer: 60.000 kg Harnstoff





Urea, 7000 kg Safeway KA Hot (Fa, Clariant).
12.2 Comment on storage capabilities of the chemicals that you use: For Runway de-icer we have niroster tanks with 12,000l capacity. For aircraft de-icer we have niroster tanks with 24,000l capacity. Harnstoff (solid de-icer) 60 tonnes.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Urea is effective to -6°c. -6 ° and below it must be mixed with liquids (Safeway KA).
12.4 Have you experienced any corrosion problems with de-icers? Urea and the Safeway KA is very aggressive on metals.
12.5 Have you employed any special means to economise on chemical use? Ice warning system.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Boschung SCU 2002 and GFS 2000 with 4 measuring-action ions.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Ice warning system help to control economical use.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 1 Stalder Mercedes 1820, 1 Stalder Mercedes Atego 18, 1 Eisbär Steyr 19S24.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-ice on the parking area.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? 2 Skidometer BV 11.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes, we would change our small airblast sweepers for larger ones, so we need less time for the clearing of the runway.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, we are changing the airblast sweepers (Buch Schörling P17) with 3m working width to airblast sweepers with 5.5 m working width.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

HAMBURG

Hamburg Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Hamburg Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWYs: 315,800m2 (RWY 05/23 and RWY15/33); TWYs: 320,600m2; Aprons: 491,300m2; RWY-Shoulders: 92,000m2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 05: ILS CAT I, PAPI; RWY 23: ILS CAT II/IIIb, PAPI; RWY 15: ILS CAT I, PAPI; RWY 33: LLZ / DME, PAPI.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Mandatory basics for a Safety Management System according to ICAO Annex 14 are established. Safety Manager has been nominated; Aerodrome Manual is available; Safety relevant processes have been identified and documented; Additional Runway Guard Lights have been installed at critical intersections; Additional Runway designator markings on floor at critical intersections; Authority audit conducted; Established ICAO conformity for "single runway operation". The following subcommittees are working for the Airport Safety Committee: Apron committee – regular meetings every month, Adverse weather conditions committee – regular meetings every 2 weeks during the winter period, Runway Safety Team – 4 times a year. Runway inspections carried out in opposite direction. All staff involved use the phraseology agreed on by ADV - airports for ground vehicles operating on runway systems.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Part of regular training for all people designated to work on ramps before they start to work.
b) Inspection by airline, airport, and airplane handling agency personnel: Regular inspections are carried out as part of the mandatory ICAO airfield inspection requirements - at least four times a day. Inspections are carried out by the airport. Aircraft stands are inspected before and after each usage by airport and ground handling staff.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Routine maintenance on a daily basis and on special request using Sweepers and/or Magnetic bars.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination and information via AOC (Airlines Operators Committee), Airport Users Committee, the Airport Safety Committee (ASC) and bilateral.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Guidance by means of RT (Apron Control, ATM) - Traffic Supervisors and Follow Me vehicles.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Installation of Runway Guard Lights, regular quality checks on signage and markings.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): ASDE-X, A-SMGCS Level I and II including Sensor Techniques (Multilateration).
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Anything in addition to a single solution, e.g. A-SMGCS, is helpful, but it should be kept in mind that cockpit crews must not be overburdened, and should have a chance to recognise and interpret signs, lights and markings during taxi. Hamburg Airport and the Deutsche Flugsicherung GmbH (DFS), ATM – provider for Germany, have signed a contract on establishing an A-SMGCS at Hamburg. The system is installed and has been fully operable since May 2010.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Regular awareness training for all employees acting as Traffic Supervisors – basic training for all people working on ramp areas.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? All activities are based on the European Action Plan for the Prevention of Runway Incursion, and carried out jointly with Deutsche Flugsicherung and pilots (runway safety team Hamburg). Regular meetings (four times a year) take place. A "Hot Spot" map is also published.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Keep the grass high where possible; avoid clusters of bushes or hedges; destroy nests of crows and other so-called blackbirds, coverage of waste water reservoirs to water birds away, counting/statistical records every fortnight.
6.1 Do your staff attend recognised bird control training courses? Yes, every two years.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Pyrotechnics, shotguns.
6.4 Do you carry out a bird strike risk assessment? At least twice a year (spring and autumn), counting/statistical records every fortnight.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Wildlife such as rabbits, foxes and occasionally deer. We use the same procedure as with birds.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 4 Ziegler Z8, 8x8, water: 12,400l, foam: 2x400l, engine: MAN classic 12cyl, year of manufacture: 2008; 2 Mercedes H.L.F M200, water: 4000l, foam: 400l, year of manufacture: 2006; 1 Rescue Staircase TECHÜNERT 7.1817-01/ HBG, M.A.N FE 27.410, year of manufacture: 2005.
7.2 Future developments – are there plans to purchase or dispose of any equipment? MAN HLF M2000, water: 4000l, foam: 400l in 2011.





7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? For training purposes the Fire Training Simulator is shifted from Frankfurt Airport to Hamburg Airport once a year for 8 days.
PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? 1 November – 31 March.
8.2 Average annual days of snow: 20-25 days.
8.3 Average snow depth: 4-6cm.
8.4 Maximum snow in 24 hours: 12-15cm.
8.5 Annual number of days of de-icing activities: 30-35 days.
9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Duty roster is based on 16 persons per shift.
10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 11 snow ploughs, 11 air blast sweeper's, 1 rotary snow ploughs, 3 front loaders, 1 turbine snow loaders, 1 spreaders for solid substances, 3 spreaders for mixed substances (solid /liquid), 1 liquid de-icer, 3 tractors with front sweeper, 1 spreader for solid substances with front sweeper, 1 spreader for solid and liquid substances with front sweeper.
11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: First: runways, Second: main taxiways according to runway in use, Third: apron, then all other areas.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Depending on current weather situation, wind direction and velocity up to ten snow ploughs and sweepers will clear the RWY in one direction forming a diagonal line. Firstly the mainly used TWYs connected to the RWY in use will be cleared in the same way. At the same time Taxi lanes on the Aprons and A/C-stands are swept in sequence.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 25-30 minutes for each runway.
12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Liquid: SAFEWAY KF Hot 250m3; Solid: SAFEWAY SF 180t, sand 700m3. Good results at temperatures up to -15° c, three days in dry weather conditions.
12.2 Comment on storage capabilities of the chemicals that you use: Sand-silo: 320m3.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Good results were achieved by mixing SAFEWAY solid and liquid as well as sand and SAFEWAY liquid depending on temperature and fall-out.
12.4 Have you experienced any corrosion problems with de-icers? No, but aircraft manufacturers spoke about a suspicion that the chemicals used might have a negative impact on carbon brakes.
12.5 Have you employed any special means to economise on chemical use? Good results achieved using "multi-de-icing vehicles". Spreading is not related to speed, no wasting
12.6 Do you have any other comments on experience with chemicals? None.
12.7 Do you use other chemicals or sand on operational areas? No.
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: N/A.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes. 8 units, Vestergaard.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing is permitted on the aprons only (on stand).
14.3 Is glycol recovered? If so, please state methods: No.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? 2 VW SHARAN Friction Testers (ASFT).
15.2 Have you any comments on the reliability of friction indexes? Higher liability of ASFT compared to SFT.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: N/A.
16.4 Do you have any winter services equipment that you would like to sell? No.

KATOWICE

Katowice AIRPORT

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Katowice Airport.
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Designations RWY: 09/27; Dimensions of RWY: 2800x60; TORA: 09 – 2800M; TORA: 27 – 2800M; Total apron's area: 175 095 M2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 09: Simplified approach lighting system "cross" with axis length 420m and bar 300m from THR. RWY 27: Precision approach category I lighting system – Calvert system. Flashing lights (30 lamps): 0-900m FM THR 27.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes. Changes concerning low visibility procedures, animal control, signage/marking of aprons and taxiways have been done after internal and CAA audits. A new SMS manual is being prepared (only in Polish).
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of
a) Training: Training mandatory for all employees and valid for two years.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspection of RWY and TWYs four times a day. Inspection of parking position is performed before every flight by the marshal and ramp agent.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance performed by sweeping and FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Described in Airport Operational Instruction approved by Civil Aviation Authority.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The primary method is the controlling by TWR, supported by observation and monitoring.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Follow-me cars equipped with TWR-radio receivers.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Nothing new.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Training with test mandatory for all employees and valid for two years.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Mowing the grass to the right height, secure buildings in the winter before the setting up of bird nests.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Bird-controlling staff work 24 hours a day.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Electronic startling device, type ZON EL08 x3; Stun guns, type Baflo 9 x11; Sound device BG Super Pro AMP; Portable sound devicec by Scarecrow x1.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.





7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Panther 4x4 (2009) r.6,200l/ Rosenbauer; Panther 6x6 (2009) r. 12,500l/ Rosenbauer; Barracuda 4x4 (1990) r. 5,500l/ Boughton; Barracuda 6x6 (1990) r. 10,000l water/Boughton; Barracuda 6x6 (1994) r. 12,000l water/Boughton; Barracuda 6x6 (1994) r. 12,000l water/Boughton.
7.2 Future developments – are there plans to purchase or dispose of any equipment? We plan to purchase two cars 8x8 Panther, 16,000l water, in 2014.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not have simulators for training, we send rescuers to England.
PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? 15 October – 15 April.
8.2 Average annual days of snow: 60-70.
8.3 Average snow depth: No data.
8.4 Maximum snow in 24 hours: 14cm.
8.5 Annual number of days of de-icing activities: 65 days.
9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 12 people per shift.
10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Runway snow plough 6m – 7 units; Runway snow plough 8m – 3 units; Road snow plough 3m – 2 units; Runway sweepers: QLH-4500 "Madro" – 7 units, OVERAASEN 5500 – 3 units; Rotor snow blower – 3 units; Spreader – 1 unit; De-icing sprayer 7000l – 2 units.
11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway 09-27, Taxiways B,E3,E2,E1,F,D,A, Apron I, Apron III.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: According to the Winter Season Manual.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 15 minutes.
12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: KCH S-Solid – flowing product; Aviform L50 – liquid product. Response time – 5 minutes, holdover time – 6 hours.
In the last season, we have used 140 tons Aviform and 10 tons KCH S-Solid
12.2 Comment on storage capabilities of the chemicals that you use: Liquids are stored in containers of 60,000l; liquid products are stored in bags with a capacity of 25kg.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Increasing the effectiveness of action.
12.4 Have you experienced any corrosion problems with de-icers? Corrosion occurs slightly.
12.5 Have you employed any special means to economise on chemical use? Application of control of the amount of fluid on the surface.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: None.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: De-icing provided by handling company GTL-LOT. Number of vehicles: 2, KIITOKORI.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? TWY Foxtrot or parking area.
14.3 Is glycol recovered? If so, please state methods: No.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? SFH SAAB 95, BOWMONK AFM 2- Airfield Friction Tester, GRIPTESTER 210.
15.2 Have you any comments on the reliability of friction indexes? No.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? Introducing sanding on new concrete apron.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: We plan to purchase two cars - 8x8 Panther, 16,000l water - in 2014.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Tender for one grass cutter, 8-9m width, and one tractor in progress.
16.4 Do you have any winter services equipment that you would like to sell? No.

KEFLAVIK

KEF KEFLAVIK INTERNATIONAL AIRPORT

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Keflavik International Airport.
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 02/20 length 3054m, RWY 11/29 length 3065m, both 60m wide. RESA 90x120m for all RWYs. All approaches obstacle free. Terminal Apron 120,695 m^2. East Apron 443,270 m^2. Taxiways 475,198 m^2.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 11 & 20 Cat II, RWY 02 & 29 Cat I.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, risk analysis and methodology in risk mitigation has caused minor changes in operational procedures to better allow the acceptable level of safety to develop at KEF.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All airside personnel receive mandatory safety training in which FOD awareness is included. KEF Airfield Services operators are trained in FOD inspections as well as FOD removal procedures.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections are performed by KEF Airfield Services inspectors, by regulation at least three times a day. In addition, the most critical areas are inspected at the beginning of each shift, three times a day also.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Dedicated suction sweepers with magnetic bars are used for routine FOD cleaning, but snow sweepers are also available for major clean-up. FOD containers are positioned in strategic places.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): By regulation, all airport users are a part of the FOD prevention effort. All agencies are encouraged to implement a FOD conscious culture within their work force. Systematic "FOD walks" are used to motivate people.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): The Opscom Aerodrome Operations system is utilized for managing FOD control.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? All vehicle and aircraft movements are monitored visually by KEF ATC TWR, rules apply for the use of yellow beacons and anti-collision lights, radio contact and permission for movements are required from KEF ATC TWR.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Additional service roads around the airfield will reduce vehicular traffic on runways and taxiways.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None of the above, but future plans include A-SMGCS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Special emphasis on non-metallic signs, using quality computer print-outs placed on water resistant wooden hardboard as well as plastic.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Special training is a mandatory requirement for all individuals permitted to handle any movements on the ground. In order to gain access permit to the airport, all employees at the airport must pass a test following a localized safety and security training, including ICAO and EUROCONTROL stipulations and recommendations. The Keflavik Airport Aviation Safety Committee, with members representing the aviation community utilising the aerodrome, meets quarterly. The committee was established in accordance with the recommendations of the European Action Plan for Prevention of Runway Incursions published in 2003 by EUROCONTROL. The role





of the committee is to advise the appropriate management on potential aviation safety issues at KEF and recommend mitigation measures.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Diverse measures are made to change and keep the habitat to make it as unattractive to birds as possible. This includes landscaping, sowing of grass seed, planting of lupine, draining of water, covering water basins and closing of nearby garbage dump sites.
6.1 Do your staff attend recognised bird control training courses? An annual training session is performed at the beginning of the bird migrating season in April. The course is locally developed and tailored to local circumstances.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously from April to September.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Our BASH team uses recorded distress calls (home-made), pyrotechnics (crackers), shotguns and dogs. Lasers are also being considered.
6.4 Do you carry out a bird strike risk assessment? A risk assessment model is a part of the BASH regulation. The assessment is carried out as often as iscdictated by circumstances, often many times a day. The process is audited twice a year.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All activities are accounted for in daily log books and fed into the Opscom Aerodrome Operations system.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 4 Oshkosh TA-3000, 6x6, 1,590l AFFF, 11,356l water, 2270kg Halon 1211. All vehicles are manufactured in 1992.
7.2 Future developments – are there plans to purchase or dispose of any equipment? The purchase of three CFR vehicles is planned within the next four years.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? It is used by other airports in Iceland.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 October – 30 April.
8.2 Average annual days of snow: 80 days.
8.3 Average snow depth: 290cm (accumulated snow through one winter).
8.4 Maximum snow in 24 hours: 34cm.
8.5 Annual number of days of de-icing activities: 36 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Total 37 employees. 25 are on five 8 hours shifts (five men on each shift) and 12 on a regular day shift with stand-by responsibilities at nights and weekends. No personnel are sub-contracted.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow sweeper, towed, Schmidt, TJS 560, 7 units; Snow sweeper, towed, Danline, 450, 4 units; Snow sweeper, towed, Schörling, P-17H, 2 units; Truck, towing, Scania, P400 with Schmidt MS 72.1 snowblade and Monroe SCPR 12ft underbody scraper, 7 units; Truck, towing, Oshkosh, P series with Schmidt MF 9.3 snowblades, 4 units; Snow blower ,Oshkosh, HB 2518-MP-3, 2 units; Snow blower, Oshkosh, H 2218, 1 unit; Snow blower, Rolba 3000, 1 unit; Front end loader, Hough, H-100-C, 3 units; Front end loader, Caterpillar CAT 972H, 1 unit Front end loader, John Deere,744/844, 2 units; Front end loader, Komatsu, 540, 1 unit; Front endloader, Case, W20C/W24C, 2 units; Front end loader, IHC, H-65-C, 1 unit; Snowploughs, Frink/Ramphog, 6.1 meters, 4 units; Snowploughs, Gjersrad, H.S.V. IV, 2 units; Runway de-icer, Batts, 2000 gal, 2 units; Sand/solid de-icer spreader, Nido Stratos, 4 units, Nido Traxos, spreader, 1 unit; Tractor, New Holland, T6060, 1 unit; Tractor, JCB, Sitemaster 4CX, 1 unit; Multi function snowblade, Gradmeko, VP-360, 2 units; Snowblade, Schmidt, M-33, 2 units; Truck, DAF, FASCF 75, 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority One: Runway in use, minimum 45 m wide and braking action 38 MU or better. Priority Two: Taxiways to and from the active runway from and to the main terminal. Priority Three: Apron and aircraft stands at the main terminal (Terminal Apron). Priority Four: The East Apron and associated taxiways. Priority Five: The runway not in use and remaining taxiways/aprons.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Runway: At least four and up to six "snow-combinations" (ploughs towing sweepers) in a tandem working out from the centerline if wind allows. One plough pushing snow from the edge lights and one or two blowers to blow windrows out on the shoulders. Taxiway: Same as on the runway with three snow combinations. Apron: Snow is accumulated in windrows with all available snow combinations and then pushed into piles in designated locations with ramp hogs. No truck transport of snow.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20-30 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Clearway F1 (potassium formate) from Kemira. Average annual usage is 80,000l. Clearway SF3 (sodium formate, solid) from Kemira. Average annual usage is 80 tonnes. Clearway F1 is very effective at low temperatures as anti-icer and has a long holdover time if not diluted with perticipation. Clearway SF3 is a good de-icer with a very acceptable holdover time, even at low temperatures. Best results if pre-wetted with Clearway F1.
12.2 Comment on storage capabilities of the chemicals that you use: We have 280,000l storage capacity for liquids and a heated warehouse for the solids.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: In most cases solid de-icers are very ineffective and slow acting if used dry. Therefore we pre-wet the Clearway SF3 with Clearway F1 in the ratio 25% liquid to 75% solid. In this way the solid sticks better to the surface, the melting action begins earlier and is faster.
12.4 Have you experienced any corrosion problems with de-icers? Because of rumours we have checked this thoroughly, but haven't discovered any problems yet.
12.5 Have you employed any special means to economise on chemical use? Yes. 1. By using an ice warning system. 2. By maximizing mechanical methods. 3. By using black sand as much as possible where it is allowed.
12.6 Do you have any other comments on experience with chemicals? Fluid chemicals are effective anti-icers but poor de-icers. Solids are much better de-icers but very expensive. Therefore we are constantly experimenting in the use of these chemicals and their mixtures
12.7 Do you use other chemicals or sand on operational areas? Yes, we use black sand, pre-wetted with de-icing fluid on taxiways and aprons.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: SCAN, system 16 EF from Surface Systems Inc. USA. Nine surface sensors and two atmospheric sensors.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? no, not in the near future.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Such a system is a very vital part of our operations. It helps us to manage the use of de-icers and monitor the frequent weather changes in Iceland. No disadvantages.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: The airport does not provide aircraft anti/de-icing.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We de-ice on the parking area.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? The MK6 MU Meter (2) and the KJ Law T6810 friction tester.
15.2 Have you any comments on the reliability of friction indexes? We have been using friction testers since the early seventies with very good results. As long as the equipment is well maintained, properly calibrated and the operators thoroughly trained the use of such tools is by far the best way to derive the friction characteristics of runways and taxiways.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? We are constantly trying to improve our methods in snow/ice control.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: 60% of our equipment is overage. Following a worldwide tender the airport authority has purchased seven new "snow combinations" (a Scania P400 ploughing truck towing a Schmidt TJS 560 sweeper).





16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

LIMOGES

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Limoges International Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
a) Descriptive of the track 1:
Orientation: 034° 214°
Identification Number: 03 21
The track length: 2440 m &
The track width: 45 m
Track Type: Clothed more precisely "concrete bitumineux" to allow the execution of automatic landings.
This track is used for:
The approach precision of Category II or III
The approach precision of Category I
The classical approaches
The approaches to seen day and of night
The take-offs by RVR < 150 m
Descriptive of the track 2:
Orientation: 034° 214°
Identification Number: 03 21
The track length: 800 m &
The track width: 80 m
Track Type: Her Be
b) Declared distance:
Track 03:
Distance of usable rumble to the take-off (TORA): 2440 m
Distance usable to the take-off (TODA): 2800 m
Distance usable for the acceleration stop (ASDA): 2440 m
Distance usable to landing (LDA): 2440 m
Track 21:
Distance of usable rumble to the take-off (TORA) : 2440m
Distance Usable to the take-off (TODA) : 2440 m
Distance usable for acceleration stop (ASDA) : 2440 m
Distance usable to landing (LDA) : 2440 m
2.2 Landing aids for each RWY (e.g. CAT II):
The different assistance radioelectriques:
LIZ (localizer) 21; Symbol: LG; Frequency: 110,1 MHz
GP 21 (glide path); Frequency: 334. 4 MHz
DME 21 = Frequency: Canal CH38X
or OM (outer marker) or equivalent
The different meteorological assistance:
three visibilimetres
pylonne anénométrique
telemetre to clouds
Other:
radiogoniometre
plan of artificial ground
night and daytime beaconing

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." The System of Management of the Security on the airport of Limoges is operational since June 30th, 2010
Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Obligatory formation "Security on the traffic area" + formation SSLIA + Raising awareness(Sensitization) of the staff and the users of the platform to the SGS
b) Inspection by airline, airport, and airplane handling agency personnel: Track inspection to the minimum 1 time a day by the SSLIA to look for the FOD
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance : use of sweeping, FOD containers
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination between the SNA and the SSLIA the time of the visit of track, Coordination with the maintenance service in a second following time the FOD discover
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No specific systems/software. The SSLIA carries out inspections of tracks several times a day.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The movement area is under the responsibility of the inspectors of the aerial navigation. Concerning the traffic area, this is the airport operations that checks and oversee through the future System of Management of the Security.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Current modification: Put in standard of the fence(close): barrier of 2m 04 with bottom-shutter(bottom-sector,stocking-shutter)
The annual recycling of the persons authorized to stream the reserved zone;
All the security measures were strengthened: compulsory accompaniment on the areas of laborer(operation), the limited(punctual) control by the agents of safety to verify the port(bearing) of the badge(swipe card), etc.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): NIL
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: NIL
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? For the staff of airport there is a radio formation for the area of labourer and a formation of driving area of traffic which are compulsory. There is an examination has to pass (theory and practice).
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? A procedure exists to go back up the incident / event by means of one form of notification of event (FNE).

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? The agent SSLIA has a basic training for birds + a recycling.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? No specific team in Limoges, it is the SSLIA which is the SPPA. Since October 1st, 2009, the SPPA is active 10 minutes before the sunset until 10 minutes after the sunset.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer):
An anti Helmet rustles;
Pistol CAPA(POSTGRADUATE LEGAL QUALIFICATION)
A hunting gun
Effaroucheur Sonore
Light gun 9 mm
Crowbar(Pliers) to reptile
Boxes(Cashdesks) of transport of animals
Glove of capture
Fused by éffarouchement
Cartridges perpendicularly
Lasso
6.4 Do you carry out a bird strike risk assessment? Last audit on Mars, 2012
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? The effarouchement to the rifle is noted on the hand running SSLIA as well as the number of pulled cartridges.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Beaten to the big animals (venison, wild boar…)
The tower and the SSLIA organize the beaten with the representative of the regional Delegation of the Civil Aviation. Beaten to the big animals (the venison, The wild boar…)
Only the persons (SSLIA) holding a hunt permit (validates) recognized by the civil aviation and the prefecture can participate beating.
All movement will be signaled to the tower.
The measures of security will be applied.
Once the killed animal, It is retrieved to the SSLIA.
The tower will be warned end by the SSLIA.
The equarrisseur is warned by fax or by telephones to resume the animal.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture:
Four vehicles of urgency: 4x4 MITSUBISHI put in service 1/09/2004; a power of 10 CH; category : VIS. Peugeot for the SPPA put in service 01/11/2010. A truck put in service 12/02/1990; mark : SIDES; category : VIM P6 1.8; a power of 26 CH.
7.2 Future developments – are there plans to purchase or dispose of any equipment? NIL
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? NIL

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? The period is November to March
8.2 Average annual days of snow: 10 days
8.3 Average snow depth: 7-10 cm
8.4 Maximum snow in 24 hours: 10-20 cm
8.5 Annual number of days of deicing activities: 50 days

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? 20 airport-employed

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-





icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Materiel of snow clearing:
Vehicle 1: 1 tractor VALTRA of 200 CH and equipped of has blade of snow and of has rotary broom.
The VALTRA will be equipped of year expander VICON.
Vehicle 2: 1 tractor KUBOTA of 130 CH and equipped of has blade of snow and of has rotary broom.
The ZETOR will be equipped of has tank of 2000 litters of product.
Vehicle 3: 1 truck UNIMOG of 80 CH at equipped of has lateral turbine ROLBA
Vehicle 4: 1 truck IVECO 4x4 of 180 CH and equipped of has blade a snows
1 tank off épandage of 2000 L of product déverglacant
1 tank off storage of 14000L of product déverglacant
Equipment used for the de-icing/anti-icing
A de-icer FMC type Tempest 2 ref: 0401 with 1 anti-icing tank of 1514lts capacity and 1 de-icing tank 50/50 of 6057lts capacity.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:
The operations of snow clearance and of déverglaçage are divided in two sectors:
Priority sectors:
Track
Way of circulation taxiway “C”
Commercial parking
Zone release service SSLIA - zone heliport French police force
Zone deposit fuel
Zone heliport gendarmerie
Non priority sectors:
Zone Public
Traffic lane of vehicles along the installations
Way of circulation taxiway 03
Entirety of the commercial parking
Entirety of the parking lot aéro-clubs, LIMA and AVGAS
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance:
a) Snow clearance on 30 meters minimum
For the snow clearance and after contact with the concerned airline companies, it suits to release a sufficient width of 30 meters minimum on the whole length of track.
The snow pads (not compact and not frozen) will be removed and pushed out track (a snow pile becomes pad when his height attains 30 cm), while avoiding the critical zones (glide, PAPI…).
Lateral fires of track
It uses the lateral ROLBA of turbine to reject the snow ropes that could mask the fires.
The sunk Fires
It will have to assure himself that the passage of the blades or ROLBA of lateral turbine on the sunk fires does not provoke any deterioration. If the need is, proceed to a new adjustability one blade.
b) Order of principle of the interventions
Total ignition of lateral and axial beaconing to a limited intensity (in case of bad forecast for the nights of during the weekend to warn the electricians beaconing so that they assure themselves placement in road of beaconing if an intervention had to be foreseen)
The vehicles of snow clearance go directly in line with the taxi way central and climb back up heading for the threshold 03.
The vehicle body must work on either side of the axis of the taxi way central, in line, in order to avoid to every passage the systematic continuation of the layer of snow.
Release the track rackets while pushing the snow towards the exterior one not to do accumulation of snow to the track extremities
After the operation of snow clearance, The track state is checked by the SSLIA under the authority of the Civil Aviation (in expectation of the signature of the protocol between the SNA and exploiting it).
c) Traffic areas
It is necessary to release the parking lot to assure the airplane departure in parking or allow moving them.
Total release of the parking lot without blocking the aircraft.
On the parking areas, the snow is repressed towards the exterior one: extremities, sides, way of the deposit of fuels. A storage zone is created to each of the extremities.
It suits equally to release the access ways between the sheds, as well as the access ramps to the terminal basement.
d) Road service and terminal pedestrian
The release is carried out according to the availability of equipment and after release of the priority zones, with if possible, the assistance of the other services (former: salting to the terminal approaches).
Equipment: tractor ZETOR with blade to snows and rotary broom truck IVECO with blade to snows épandeur manual.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? That depends on the quantity of snow on the track, the estimation is not evident! Between 3 and 4 o’clock

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: On average over the last 4 years:
Liquide = 11500 (15 T)
Solide = 2,5 T
12.2 Comment on storage capabilities of the chemicals that you use: No comment
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: That depends on the conditions forecast
12.4 Have you experienced any corrosion problems with de-icers? Corrosion of the material observed
12.5 Have you employed any special means to economise on chemical use? No
12.6 Do you have any other comments on experience with chemicals? Expensive product
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. NIL
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? NIL
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Without object

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? Yes
If so, please state vehicle or other facility manufactures, and number of units: 1 defroster FMC Tempest of a capacity of 6000 l of liquid de-icers and 1500 l of product antifreeze.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? The airplanes are defrosted on the parking area
14.3 Is glycol recovered? If so, please state methods: There is not recuperation of product for the moment at Limoges

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Measuring device of the friction of the track (runway) MK3
15.2 Have you any comments on the reliability of friction indexes? No

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: This again is not determined
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No

LJUBLJANA

Aerodrom Ljubljana

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Airport Joze Pucnik Ljubljana

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Single RWY / 3300x45 / TORA 3300 / RWY strip 4320x300.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 30/ ILS CAT II/IIIB/ 125m RVR for landing and 100m for take off.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? In the process of introduction.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of:
a) Training: FOD awareness is a part of each internal license training process (initial and recurrent).
b) Inspection by airline, airport, and airplane handling agency personnel:
Airside FOD inspections are regularly done and recorded by the airport operator.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc):
Sweeping machines and FOD carpets.
Aircraft parking positions are equipped with special FOD containers (yellow-coloured with black visible “FOD” signs).
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.





5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Radio phraseology and two-way radio communications.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Test periods for inductive loops on the TWY stop bars for movement control to and from RWY.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Standard horizontal and vertical signs and markings / ICAO Annex 15.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Pilots, controllers and airport vehicle operators on airside are obligated to act in accordance with the local standards and procedures. Special training (driving license) is essential for vehicle operators entering RWY.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: We have rising problems with birds of prey (buzzard and kestrel). The grass management inside the airport is reducing the quantity of their source of food (mice, voles on the grass land). In future this will be the most important issue for habitat management - to make the airfield less attractive for them. Airport surroundings are very rich in forests. There we have limited sources and possibility to manage such habitat. Around 8nm southwest from the airport there is a river with two artificial lakes. Around 15nm northeast there are mountains. We are in the process of airfield habitat and ecological study.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? The bird control staff work hourly. Frequently in the critical season of bird appearances and on ATC request.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Pyrotechnics, shotguns, Scarecrow (Premier). For next year we are planning the use of bird deterrent green bean laser in addition (active method).
6.4 Do you carry out a bird strike risk assessment? Once a year.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Foxes. We made constant monitoring of the critical airfield with thermo-cameras by night. And if foxes appear, we ask the hunter to kill them.

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Rosenbauer PANTHER – 8x8, year of manufacture: 1998/13,500l water, 1,500l foam, 500kg dry powder, pump: Rosenbauer R 600, capacity 6000l/min; FAUN – 6x6, year of manufacture: 1981/9,000l water, 1,000l foam, pump: Rosenbauer R480-2N, capacity 5000l/min; Rosenbauer FALCON – 4x4, year of manufacture: 1987 / 3000l water, 200l foam, pump: Rosenbauer R280 HN, capacity 3000l/min; Rosenbauer TLF3000/200 – 4x4, year of manufacture 2008 / 3000l water, 200l foam, 90kg CO2, pump: Rosenbauer NH30, capacity 3000l/min; Mercedes-Benz SPRINTER – 4x4, year of manufacture: 2001 / 400l water, 20l foam, 50kg dry powder, pump: Rosenbauer UHPS M 400, capacity 38l/min at 100 bars; Renault TRAFFIC, year of manufacture: 2006 / 200l water, 20l foam, 20kg dry powder, pump: Rosenbauer UHPS M400, capacity 38l/min at 100 bars.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Firefighter-training polygon just for internal use.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? 1 November – 30 April.
8.2 Average annual days of snow: 40 days.
8.3 Average snow depth: 20cm.
8.4 Maximum snow in 24 hours: 30cm.
8.5 Annual number of days of de-icing activities: 10 days.

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 4 to 6 employees for a/c de/anti-icing. For snow cleaning (runway, taxiways, aprons, stands and service roads), there are three groups with 12 members each. In case of heavy snow there is an use of an outsourced partner too.

10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 1x Friction tester SAAB,1x Renault Cangoo with friction tester SARSYS, 4x Blower sweeper, Scherling P17 and P17B, 6m - 30km/h, 2x Blower Sweeper, Scherling P12, 6m - 30km, 1x Snow plough, Schmit, 5.4m, 7x Snow plough, Riko, 5.2m, 1x Snow plough, Schmit, 2.5m, 3x Truck Mercedes 2031, 3x Truck Mercedes 2032, 1x Truck Mercedes 2032 with combine spreader EPOKE SH 4520 (solid and fluid), 2x Truck TAM 260 TB, 1x Snow blower Mercedse UNIMOG 1200 with spreader for solid, 2x Snow blower BUCHER ROLBA 3000, 1x spreader for solid.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:
1. Runway, 2. Emergency way for RWY, 3. Taxiways, 4. High speed intersection, 5. Navigation systems, 6. Main apron, 7. GA apron, 8. Service roads inside the airport perimeter, 9. Land side, 10. Other on request.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The number of vehicles is a standard part of the Snow Management Programme that is issued each year.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Urea (solid): approximately 45 tonnes. Effective to -5°c. Holdover time depends on the weather conditions (precipitation). Safeway KF (liquid acetate): approximately 1000l. Effective to -25°c.
12.2 Comment on storage capabilities of the chemicals that you use: Chemicals storage capabilities are suitable.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: The mixing ratio 10–15 % of Safeway and Urea respectively is shown as the most efficient.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? Use them at the right time, in relation to actual weather conditions.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: One freezing point detector on RWY 30 touchdown zone (ILS approach).
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Yes.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Comment will be made after planned upgrades.

14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 2x de/anti-icer, Vestergard, Elephant Beta; 1x de/anti-icer, TB 8000; 1 x de/anti-icer, Vestergard, Elephant Gama.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De/anti-icing is usually performed at the dedicated de/anti-icing pad. In some circumstances the de/anti-icing is performed at a/c stand.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Saab Friction Tester, SARSYS Friction Tester.
15.2 Have you any comments on the reliability of friction indexes? For some carriers the friction index is relevant just in the case of ice and compacted snow. For slush and standing water, wet snow and dry snow the measured friction index is for them, unreliable. In such cases the measured height of deposits on RWY surface are more relevant.

16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.





LONDON GATWICK

YOUR LONDON AIRPORT Gatwick

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: London Gatwick Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 08R: 3316x45m, TORA 3159m, TODA 3311m, ASDA 3233m, LDA 2766m; RWY 26L: 3316x45, TORA 3255m, TODA 3407m, ASDA 3316m, LDA 2831m; RWY 08L: 2565x45m, TORA 2565m, TODA 3040m, ASDS 2565m, LDA 2243; RWY 26R: 2565x45m, TORA 2565m, TODA 2703, ASDS 2565m, LDA 2148. 26L has a 150 m starter extension. The 26L landing threshold is displaced by 424m. The 08R landing threshold is displaced 393m. Paved shoulders extend 7.5m beyond each side of Runway 08L/26R. Paved shoulders extend 15m beyond each side of Runway 08R/26L. The 08L landing threshold is displaced by 322m. The 26R landing threshold is displaced 417m. A maximum weight limit of 562,000kg applies to landings and take-offs on Runways 08R/26L and 08L/26R. 1,900,000 sq/m of manoeuvring area.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 08R: CAT IIIb; RWY 26L: CAT IIIb.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Gatwick Airport Ltd (GAL) has a well-developed Safety Management System. The GAL board oversees this through the Managing Corporate Responsibility Board (MCR). Each department operates a risk register. Risks are identified, mitigated and reviewed at departmental levels and at the Managing Corporate Responsibility Board. They are captured on a company standard risk register.

The risk register is reviewed and updated quarterly: When there is a change in procedures/process (current and future); when new equipment or plant and or process are introduced; incident review; high level risks reviewed monthly at the Managing Corporate Responsibility Board. A CAA Audit carried out in February 2012 found no issues with the Gatwick Airfield SMS. GAL was PAS55 certified – Asset Management System – with effect from October 2012.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:

a) Training: Included as part of initial Induction Training for all staff required to work on the airfield. Also included in the airside driving syllabus. Specialist vehicle operative training for GAL staff involved in FOD removal.

b) Inspection by airline, airport, and airplane handling agency personnel: GAL requires Handling Agent Dispatchers to carry out a FOD inspection of aircraft stands, prior to each aircraft arrival. GAL has an Airfield Operations team who continually monitor the airfield for FOD and carry out removal as required. GAL issues a number of Directives covering various airfield issues, one of which is FOD prevention and the responsibility of all airfield users to minimise FOD generation and ensure that any FOD is disposed of in the correct way. Three Tier inspection process by Airfield Operations. Routine, detailed and Senior Management audit.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The GAL Airfield Support staff operate specialist sweeper vehicles, in addition to manual FOD removal. FOD bins are provided on aircraft stands for collection of small items. Strategically positioned FOD fences to catch wind blown debris. Airfield civils maintenance programme. Skips placed on the airfield must be issued with a permit and be covered with a lid. Airline cleaning contractors trailers must be totally enclosed. Airfield Projects work sites must conform with GAL fencing standards, which do not allow FOD to escape from the site. An Airport Directive requires all vehicle cabs to be free from FOD at all times.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Any FOD issues are raised at the quarterly Airside Safety Group meetings chaired by GAL and attended by third party airside companies. A programme of inspections of specific areas is undertaken by GAL Senior Airfield Management and Handling Agents.

Some joint FOD walks have been undertaken by GAL and airside operators. GAL carries out a number of third party audits each year and those being audited are required to give details of their Company FOD policy. GAL require Handling Agent Dispatchers to carry out a FOD inspection of aircraft stands, prior to each aircraft arrival. Gatwick Airport Directive (GAD) – FOD. FOD awareness posters. A 5S process has been applied to Pier 2. GAL is intending to role this out across the whole airport in due course.

4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? RTF, A-SMGCS, RIMCAS. Airfield Operations vehicles are fitted with transponders for operating on the runway.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Installation of TUBS (Taxiway Unavailable Bar System) being installed on the RETs as part of the 2012 runway rehabilitation works. LED lighting on runway 08R/26L, taxiways and hold points.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS, RIMCAS, AFDAS, controllable runway guard bars.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Runway Ahead sign at holding point Bravo 1; All runway entry points are CAP 168 compliant; The use of shutters on "Start of Roll" boards when runway 08L/26R is not active; Threshold strobe lights installed on runway 08L/26R; Holding point Alpha has red and white barriers installed to prevent vehicle induced runway incursions; Installation of TUBS; Taxiway pavement designators used at locations where issues have been identified through ATC surveys.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Driver training course, specifically for those who are required to drive on the manoeuvring area plus regular refresher training; Specialist airfield driving maps, clearly showing the manoeuvring area (maps updated every 6 months). Maps must be carried in every vehicle; Flight Ops Performance Committee, hosted by GAL, every two months.

Local Runway Safety Team, jointly hosted by GAL and National Air Traffic Services (NATS), every two months; Local Runway Safety Team airfield van tours carried out in daylight and darkness during the year; NATS delivered a number of Airfield Resource Management courses.

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Runway safety incidents are discussed jointly between GAL and NATS and shared with members of the Local Runway Safety Team, which also includes representation from Airlines, Handling Agents and the UK Flight Safety Committee. Those involved in a runway safety incident will be invited to complete a joint GAL/NATS Human Factors Questionnaire. The aim of any investigation is to promote and share learning and identify any contributory issues, ie. training, airfield infrastructure and procedures that may need to be addressed to try and prevent a recurrence. All runway incursion investigations include playback of RTF comms and ground radar image and these are shared at the Local Runway Safety Team meetings. Sharing of safety reports between third parties is positively encouraged and discussed to identify any lessons learnt and raise awareness.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:

Bird Hazard Management: The aim of bird hazard management at Gatwick is to maintain, as far as is reasonably practicable, a bird-free airfield. An Airfield Duty Manager is nominated as the Bird Co-ordinator and bird hazard management duties are carried out by the Airfield Duty Team H24. GAL uses the standards below to control birds on and around the aerodrome in accordance with CAP 772: Birdstrike Hazard Map - A bird hazard safeguarding map is maintained. This is based on an Ordnance Survey map and highlights the assessed local hazards and also shows on a wider scale such sites as landfills, gravel extraction, and water bodies; Local Bird Calendar - Gatwick Airport have an aerodrome specific bird calendar. The calendar is based on statistical data and known bird activity over a number of years. The calendar is used on a monthly basis as a predictive tool during the year to assess any likely change to the bird strike hazard; UK CAA Birdstrike Committee – Gatwick Airport has representation on this Committee; All Airfield Operations personnel who carry out bird hazard management duties are trained and hold a firearms certificate which must be revalidated every 3 years; All staff attend an approved bird hazard management





training course and to ensure competency, periodic refresher training is undertaken in the use of firearms, bird hazard management operations and local ornithology. Comprehensive records are kept of all bird control activities and firearms training and assessments; All vehicles involved in bird hazard management activities are suitably equipped and maintained. Bird Patrols are carried out to ensure that: the presence of birds on the airfield and in the surrounding area is minimised; an environment not conducive to the presence of birds is created; birds on the airfield are detected and dispersed; warning can be passed to aircraft and ATC about the presence of flocks of birds on the airfield; the formation of night roosts is prevented. Bird patrols are carried out across the active airfield. All areas are patrolled, with emphasis rather than concentration being on the active runway. Bird Hazard Assessment / Warning: Bird hazard assessment is carried out via the tactical bird patrols and strategic analysis by the Bird Co-ordinator and Operations Management. Air crew are warned whenever the presence of birds in large numbers is thought to constitute an immediate hazard. This is done by informing Operations or ATC by radio, this warning then being passed on to aircraft directly or via ATIS. In the event of a prolonged infestation of birds on or immediately adjacent to the airport NOTAM action may be taken to warn air crew of the hazard. This should only cover periods of short to medium duration and will be cancelled when the hazard ceases to exist. All wildlife strikes or suspected strikes are investigated and reported immediately by Airfield Operations or ATC. An electronic Wildlife Strike Occurrence Form (CAA Form 1282) is completed online via the CAA website by Airfield Operations on all occasions where there is a confirmed or unconfirmed strike.

6.1 Do your staff attend recognised bird control training courses? Yes.

6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Davis Pistols, Hmr Bolt Action Rifle, Umarex Magazine loaded Air Rifle, BSA Break Action Rifle, Shotguns, Larson trap, and ettings of open water such as ponds.

6.4 Do you carry out a bird strike risk assessment? Yes, via FERA (The Food and Environment Research Agency).

6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, through use of an Ultima electronic data base.

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Culling of rabbits is carried out.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Mitsubishi Shogun Fire 1; MAC 08 Fire 3: 6,000l water, 840l foam; Panther Fire 4: 12,500l water, 1,500l foam.

7.2 Future developments – are there plans to purchase or dispose of any equipment? New fire appliances being purchased over the next 12 months. A high access platform is also being purchased during 2013 for A380 operations.

7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 November – 31 March.

8.2 Average annual days of snow: 1 day.

8.3 Average snow depth: 1-2cm.

8.4 Maximum snow in 24 hours: 1-2cm.

8.5 Annual number of days of de-icing activities: 33 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? As few as 10, when no snow is forecasted for the next seven days, and more than 100 when snowfall is imminent.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Runway: 9 Overaasen RS400 – Mercedes Actros 4x4 Runway Sweepers; 2 Oshkosh Snow Cutters; 2 Liquid Anti-De-Icer Spreaders; 1 Constant Friction Measuring Equipment; ASFT. Taxiway System: 9 Schorling – Unimog 4x4 Runway/Taxiway Sweepers; 3 Liquid Anti/De-Icer Spreaders; 1 Combi Liquid/Solid Anti-De-Icer Spreaders; 1 Rolba Snow Cutter. Stands, roads and other airside areas:4 Small Liquid Anti/De-Icer Trailer Spreaders; 12 Multihog Brush/Plough/Anti-De-Icer Spreaders; 24 John Deere Tractor Brushes, John Deere Tractor 4 meter ploughs; 2 John Deere Tractor Sulky Solid Anti-De-Icer Spreaders; 4 John Deere Gator Plough/Solid Anti-De-Icer Spreaders; 4 Kabuto Plough/Solid Anti-De-Icer Spreaders; 12 Pedestrian Snow Plough & Cutters.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: a) runway(s) in use, including rapid exits and starter strips; b) all runway holding areas, taxiways and aprons that are to be used; c) all other areas and roads.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The method of clearing snow will vary in detail with the severity of the snow event. The principle will be to use the Runway Snow Sweepers in echelon formation using the wind direction and topography to help the sweeping operation. Ploughing on the runway(s) should be stopped short of the white edge marker lights and grass area with the resultant accumulations of snow being blown clear by use of a snow blower or other piece of selected equipment. Sweeping operations will where appropriate normally be followed up by a runway de-icer to apply a chemical anti-icing agent.

11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Moderate snow - visible settling up to 3 cms: Runway sweeping commences, requiring restricted runway operations and clearance on taxiways and stands. Significant delays are likely to occur and some flight cancellations will be required as a result of reduced ATC arrival and departure rates.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Clearway 3 / Brothertons Safegrip+ – Liquid acetate chemical; Clearway 6S – Solid acetate chemical; Brothertons Solid formate chemical; Konsin – Liquid Glycol chemical (will only be used at the discretion of the Airfield Duty Manager in line with London Gatwick Airport – Airfield Operations Konsin Usage Checklist.); Grit – conforming to the latest published version of BS 812, 1973, Part 3.

12.2 Comment on storage capabilities of the chemicals that you use: Clearway3/Brothertons Safegrip+: 170,000litres; Konsin: 340,000litres; Clearway 6S/Brothertons Aviform6: 25,000kg; Grit: 20,000kg.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Our solid de-icer we generally pre-wet with a liquid anti-icer because of the of the blow away factor. However, we find using it on stands that are unlikely to be used within an hour solid de-icer is great solid, as long as it is given time to work.

12.4 Have you experienced any corrosion problems with de-icers? No reported issues.

12.5 Have you employed any special means to economise on chemical use? We operate the Advance Surface Friction Tester, which has the ability to tell us when moisture is likely to freeze, this helps the decision making process as to how much chemical de-icer we use.

12.6 Do you have any other comments on experience with chemicals? None.

12.7 Do you use other chemicals or sand on operational areas? We use Grit on passenger walkways only.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Three Vaisalas.

13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? As part of the runway re-habilitation work we have installed more ice warning sensors on runway 08R/26L. The ASFT will give us this information too and we use this as an additional monitoring device.

13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: They are good as a tool to aid anti-icing / de-icing decision making.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Aircraft anti / de-icing operations are carried out by handling agents.

14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing is predominantly carried out on aircraft parking stands. For Winter 2012/2013 a dedicated area has been identified in the Snow Plan, which will be used at the discretion of the Snow Co-ordinator during adverse weather conditions.

14.3 Is glycol recovered? If so, please state methods: Yes – mechanical sweeping.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT Mark 4 Airfield Surface Friction Tester.

15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? A-CDM Implementation Programme.

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes – Fire Appliances and high access platform.

16.3 Do you currently have equipment or other





products on order? If so, please provide details including manufacturer and number of units: Fire Appliances: Rosenbauer Panthers, an additional 3 in 2013.
16.4 Do you have any winter services equipment that you would like to sell? No.

MADEIRA

Madeira Airports

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Aeroporto de Madeira
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY length 2781m, RWY 05 TORA 2631m (including 150m of pavement before threshold), RWY 23 TORA 2631m (including 150m of pavement before threshold), RWY width 45m, shoulder widths 3m, total apron area 8,248,700m2, ramp area 11,080,900m2.
2.2 Landing aids for each RWY (e.g. CAT II): Visual approach for both RWYs only. RWY 05 PAPI system with 3 degrees glide-scope on both sides of the RWY, and RWY23 PAPI system with 3 degrees glide-scope on left side of RWY.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No recent changes.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: It is mandatory to have training about this issue before starting to operate in the manoeuvring area.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport duty manager does inspections to the runways and aprons in accordance with Doc. 9137.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airport uses FOD containers at all aircraft stand positions, and sweepers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination and reporting is done by airport duty manager 24 hours a day.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No special software in use for FOD control.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements are controlled and co-ordinated by local ATS (TWR).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? The measures taken have been effective till now, currently there is no need to take other measures.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Aircraft movement control is accomplished by a taxiway lighting/marking guidance system, followed by apron lighting and marking guidance system with intermediate holding position markings/lights and stop bars.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Markings and lighting installed in accordance with ICAO Annex 14. RWY guard lights are installed.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Training sessions and meetings are done in accordance with SMS Committees (apron, runway and emergency).
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, reporting procedures were set up jointly with other parties active in this process.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: New technologies have been implemented in order to reduce the attraction of the airfield to birds, and recently we implemented a new study - Birds' Life - lasting three years, to understand the reason for the increase of birds, and act appropriately and preventatively to reduce the risk.
6.1 Do your staff attend recognised bird control training courses? Staff are concerned by the matter and aware of the risks. There is no specific course but briefings are made by airport operations and the safety office.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes. All bird control staff are employed by the airport. They are familiar with the intervention area and airport procedures. They have 8-hour shifts during the day.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Shotguns, Pyrotechnics, gas cannons and a Scarecrow distress call system.
6.4 Do you carry out a bird strike risk assessment? Every three months, and it is an audited process.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. Every bird control activity is recorded and sent to the responsible bird strike manager (safety manager).
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.
7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Vehicle: Oshkosh P 19 (4x4), 1989 – water 3,850l, foam 492l, powder 227kg, Hallon 68kg. Vehicle: Oshkosh T 1500 (6x6), 1991 – water 6,000l, foam 776l, powder 317kg, Hallon 68kg. Vehicle: Oshkosh T 3000 (6x6),1999 – water 11,356l, foam 1,590l, powder 227kg, NAF.P 100kg. Vehicle: Oshkosh Striker 3000 (6x6), 2012 – water 11,356l, foam 1,590l, powder 204kg.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Madeira Airport doesn't have a training campus.
PART 2: WINTER SERVICES QUESTIONNAIRE
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? A friction test was done by ANA, S.A in April 2012 and, to determine the coefficiency of friction testing was performed continuously at an average speed of 65km/h and 95km/h, at night time, with dry weather, and using equipment (ASFT – CFME, Airport Surface Friction Tester – Continuous Friction Measurement Equipment).
15.2 Have you any comments on the reliability of friction indexes? In the overall results of the evaluation of friction coefficiency in April 2012, the analysis by sections does not point to the need for intervention.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No changes intended for now.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Not applicable.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Not applicable.
16.4 Do you have any winter services equipment that you would like to sell? Not applicable.

MADRID-BARAJAS

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Madrid-Barajas Airport
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, we have been certificated three more times since 2011 first certificate (by Spanish Air Safety Authorities), due to new Apron Management Services in three main aprons (T4, T123 and T4Satellite). AESA oversees all certification processes and conducts periodic audits whose results are translated into a Corrective Action Plan (CAP) to run through the airport. The airport regularly reports to AESA the CAP's monitoring. In addition, the airport has made changes into the risk assessment procedure derived from AESA audits, to refine the procedure's methodology.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Continuous information campaigns for airport users and employees
b) Inspection by airline, airport, and airplane handling agency personnel: Continuous inspections by marshaller in the whole movement area and by handling agents in the aprons
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping, magnetic bars and FOD containers installed in airbridges
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Safety Apron Committee for coordination with airlines and handling agents
4.2 General: Are there any special sys-





tems or software solutions you employ for FOD control? (Please specify product name and add any comments): No

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS (SMR and Mode S Multilateration)
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Developing of an onboard airport vehicles (RFFS, Follow-me, maintenance, etc...) device with alarm of runway incursion and other sensible areas
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Each unit cares for their own training
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, we have implemented a SMS according ICAO rules.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes, as it is included in the Aerodrome Manual
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? They are working on the airfield continuously during daylight hours, from sunrise to sunset, 365 days a year.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Over 100 birds of prey to establish danger conditions to keep birds away from hazardous areas like runways and others; gas cannons to throw out perched birds at the sides of the runways; alarm calls (sirens) and devices to output electric sounds set up over Wildlife Control Service's 4x4 vehicles; nets and cages to live-capture large birds and little mammals; pyrotechnics to dissuade large birds; guns and shotguns; some ferrets to live-capturing rabbits.
6.4 Do you carry out a bird strike risk assessment? In 2010, an exhaustive study was conducted of the risks that the presences of birds represent to air navigation in Madrid-Barajas Airport. This study incorporated a working session that involving various air operators, Spanish's Aviations Safety Agency (AESA), pilots and aircraft and engine manufacturers and expert staff from AENA and SENASA. The results of this risk analysis were compiled in a tolerance matrix that classifies the risk to air navigation. From this point, the risk analysis is evaluated annually and the tolerance matrix revised. In order to reduce these risks, several mitigations measures were defined and implemented, in addition to measures already in place.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All bird control activities and all incidents are logged in a database. This database contains information about sightings, strikes, removal of bird remains, reported birds strikes and other wildlife-related incidents.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No, the airport doesn't have any important problems with other wildlife.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture:
Mercedes Atego: Water Tank 3.000,00 litres; Fire Pump 400,00 litres/minute.
Mercedes Atego: Water Tank 3.000,00 litres; Fire Pump 1.500,00 litres/minute; Foam Tank 360,00 litres.
Rosenbauer Panther 8x8: Water Tank 13.500,00 litres; Fire Pump 6.750,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,620,00 litres.
Rosenbauer Panther 8x8: Water Tank 13.500,00 litres; Fire Pump 6.750,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,620,00 litres.
Rosenbauer Panther 8x8: Water Tank 13.500,00 litres; Fire Pump 6.750,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,620,00 litres.
Rosenbauer Panther 8x8: Water Tank 13.500,00 litres; Fire Pump 6.750,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,620,00 litres.
Rosenbauer Panther 8x8 HRET: Water Tank 12.000,00 litres; Fire Pump 6.000,00 litres/minute; Foam Tank 1,500,00 litres.
Rosenbauer Panther 8x8 HRET: Water Tank 12.000,00 litres; Fire Pump 6.000,00 litres/minute; Foam Tank 1,500,00 litres.
Man Protect Fire 6x6: Water Tank 10.000,00 litres; Fire Pump 5.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Man Protect Fire 6x6: Water Tank 10.000,00 litres; Fire Pump 5.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Man Protect Fire 6x6: Water Tank 10.000,00 litres; Fire Pump 5.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Man Protect Fire 6x6: Water Tank 10.000,00 litres; Fire Pump 5.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Oshkosh Striker 3000 6x6: Water Tank 10.000,00 litres; Fire Pump 6.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Oshkosh Striker 3000 6x6: Water Tank 10.000,00 litres; Fire Pump 6.000,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Saval Kronenburg Mac-11 6x6: Water Tank 10.000,00 litres; Fire Pump 4.500,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
Saval Kronenburg Mac-11 6x6: Water Tank 10.000,00 litres; Fire Pump 4.500,00 litres/minute; Dry Chemical System (Kg PQS) 250,00; Foam Tank 1,200,00 litres.
7.2 Future developments – are there plans to purchase or dispose of any equipment? A lifting platform arriving first term 2013
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes, we have a Fire Training Simulator, nowadays only used by Barajas Fire & Rescue Service but working on making it available to other Airports and Fire Services.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Human and material resources are available permanently, however, winter conditions usually occur between 15 November and 15 March.
8.3 Average snow depth: In the period from January 1 1950 to January 1 2009 there were 14 snowfalls with an approximate depth of 10cm, in which snow covered the ground surface for about 24 hours.
8.4 Maximum snow in 24 hours: 3.1cm.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Two airport employees and up to 150 sub-contracted employees perform airport maintenance activities.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): runway sweeper, Øveraasen, RS400 MKIII, 9 units; snow blower, Rolba, Zaugg Modelo 1500, 2 units; liquid spreader, MAN, Boschung 15 M3 62037, 3 units; mini loader, Bobcat, S130, 14 units; loader, Volvo, L180, 6 units; truck, MAN, FE 40,414, 5 units; snow truck, MAN, 6x6 TGS 33,360, 9 units; all roads 4x4, Mitsubishi, L200, 2 units.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runways: the western runways, one for arrivals (14R/32L) and one for departures (18R/36L). Taxiways A, M, B, N, J3, H3 and de-icing areas. Aprons, firstly the South part of T4 and of T4S, secondly T123 and rest of T4 and T4S.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The vehicles were built in 2010 and are subject to all revisions stipulated by the manufacturer of each. There's also regular training of the personnel who operate machinery - theoretical and practical training including several drills to test the routes and machinery formations established in the airport's Winter Action Plan.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? There are three cleaning routes defined to clean up the four runways and associated taxiways, so the cleaning of each runway is done in about 30 minutes. Approximately 40 minutes in total adding the time needed for friction coefficient verification.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: De-icer used last season (there was not much adverse weather): Potassium formate, 18.000l and urea, 90.000kg.
12.2 Comment on storage capabilities of the chemicals that you use: The potassium formate is stored in four tanks of 50,000l each, and two tanks of 33,000l each, so there's a total storage capacity of 266,000l. Urea is kept in a closed vessel to be protected from adverse atmospheric conditions of temperature and humidity. The airport has storage of 150,000kg, but the storage





capacity can be expanded if necessary.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Solid urea was used, pre-moistened with potassium formate, in preventative treatments, and has been effective in every case in which it was used. The distribution of the material has worked properly because there were no extremely high winds.
12.4 Have you experienced any corrosion problems with de-icers? No accidents or corrosion problems have been detected because, as noted, they have been used sparingly in recent years.
12.5 Have you employed any special means to economise on chemical use? Preventative treatments are performed only when atmospheric conditions are such that they will cause serious problems in the airfield. Savings have been made through having effective weather forecast information.
12.6 Do you have any other comments on experience with chemicals? Preventative treatments are very effective. Acting early, before the moments of snowfall, can prevent snow settling on the ground or even forming a layer of ice, which can be more difficult to remove afterwards.
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: The Spanish State Meteorological Agency sends four temperature forecasts daily and issues aerodrome warnings for frost.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: No comments.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No, there is one de-icing handler - IBERIA. There are 18 vehicles in total, manufactured by JBT: 1 TM 1800, 4 LM 2000, 12 Tempests with enclosed cab and airfresh, 1 Tempest with open cab.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Dedicated de-icing areas.
14.3 Is glycol recovered? If so, please state methods: Yes, an authorised company manages the glycol and takes it to a treatment plant.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Mu-Meter Mk6; 2 Saab 9-5 vehicles with Norsemeter SFT.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? A-CDM is being implemented.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? Yes, 6 Øveraasen RS400 MKIII runway sweepers with Mercedes ACTROS 2041 trucks; 2 Volvo Cilette 15m3 CL10050 ABUID liquid spreaders and 4 MAN snow trucks, 6x6 TGS 33,360.

MARSEILLE PROVENCE

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Marseille Provence Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY 13L: 3500x45; TORA 3500; TODA 3500; ASDA 3500; LDA 3160.
RWY 31R: 3500x45; TORA 3500; TODA 3500; ASDA 3500; LDA 2840.
RWY 13R: 2370x45; TORA 2370; TODA 2370; ASDA 2370; LDA 2370.
RWY 31L: 2370x45; TORA 2370; TODA 2670; ASDA 2370; LDA 2265.
Apron surface: 500,000m^2 (approximately)
2.2 Landing aids for each RWY (e.g. CAT II):
RWY 13L: APCH Cat II-III-420m-LIH/LIL
RWY 31R: APCH Cat I. PAPI
RWY 13R: APCH Cat I. PAPI
RWY 31L: PAPI

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? The SMS structure is described in the chapter 6 aerodrome manual of the Marseille Provence airport. Its structure leans on the order of November 30th, 2006 (implementation of the SMS). Details of the structure – chapter 1: General arrangements, chapter 2: Implementation of the safety politics, chapter 3: Insurance of the safety system, chapter 4: safety promotion. Date implementation: December 2012. Safety certificate valid until December 2016.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training:
b) Inspection by airline, airport, and airplane handling agency personnel:
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc):
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc):
Airfield, runways and taxiways inspection are inspected by firefighting service 3 times a day (soon in the morning, midday and in the end of the afternoon). They produce a report including what they have seen (FOD, deterioration of runways or taxiways …) and its localization. If necessary, the surface identified is cleaned (oil…). Firemen in charged of inspection are trained during half a day for this operation.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Ground localisation system.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Each vehicle and aircraft in the movement area (runways / taxiways) are in contact with navigation controller which is in charge of the separation. In 2013, a ground radar will be ins service to improve the monitoring.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All markings and lighting follow ICAO recommendations to help pilots on the airport.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: In some places, signs are painted on the ground in order to show that old "taxiway" is closed.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? A specific license is mandatory to drive a vehicle in the airfield of the airport. This license need a training, each 3 years for apron, each year for movement area.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? A runway Safety team has been implemented by DGAC with airport manager, airline pilot and other users of the airport. The purpose is to check if drivers / pilots have special difficulties on the airfield and find solutions.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: CCIMP Safety service is in charged of bird and wildlife control. One person is designed to study best practices to reduce attraction of the airfields and vicinity to birds. He studies process of habitat and land management both on and in its vicinity in order to reduce the attractiveness of the area to birds/wildlife, reviews features and determinate adequate height to reduce birds hazard.
6.1 Do your staff attend recognised bird control training courses? Yes. The staff have a special training approved by the Technical Service of General Aviation (STAC).
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously. The inspection is – ½ an hour before sunrise and + ½ an hour after unset.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): The bird control vehicle is equipped with movable scare bird with sound effects (made by Sterella) lasers, shotguns, explosive cartridge pistols and CAPA. 7 scare bird had been installed in airfield between the two runways.
6.4 Do you carry out a bird strike risk assessment? The process is audited by DGAC once a year.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. A specific software is used to register observations and actions of bird controls.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No, problems are only with birds.

7. CRASH FIRE RESCUE

7.2 Future developments – are there plans to purchase or dispose of any equipment? Only for the change plan.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15th November / 15th March
8.2 Average annual days of snow: 1 day every 2 years
8.5 Annual number of days of de-icing activities: Around 10

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel





are available per shift? 20 persons
10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Clearing equipment: Snow: 6 trucks mounted clearance blade, 3 bulldozer, 1 sweeper equipped with a blade, 3 loaders, 12 trucks, 1 UNIMOG truck with snow sweepers, 1 sweeper equipped with snow sweepers.
Surface ice, black ice: 2 spreaders with a capacity of 6 000 l each. Total de-icing agent reserves: 100 000 l.
11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority of clearance:
main RWY 13L/31R over its entire length of 3500 m and width of 40 m and the taxiways connecting its ends to the main parking area and the taxiways to the ends of the secondary RWY 13R/31L
secondary RWY 13R/31L over its entire length of 3500 m and width of 40 m and the associated taxiways
taxiways associated to the main runway 13L/31R
immediate local parking areas
outlying main parking areas
other parkings (North of the airport)
12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved hold-over times etc: De-icer : SAFEGRIP FR
12.2 Comment on storage capabilities of the chemicals that you use: total de-icing agent reserves : 100 000 l
12.4 Have you experienced any corrosion problems with de-icers? No
12.5 Have you employed any special means to economise on chemical use? Not really necessary, de-icing is not performed very often in Marseille Airport
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Aircraft de-icing are performed by handling agent.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Some parkings (1 parking by handling agent) are used in winter for de-icing positions.
14.3 Is glycol recovered? If so, please state methods: Glycol is recovered with a vacuum sweeper machine.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Friction tests are performed by the airport. Equipment is: Model “MK3” built TES Limited.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport’s methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No

MILAN LINATE

AEROPORTI DI MILANO
LINATE E MALPENSA

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Milan Linate Airport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway 18-36, 256,000 sqm; Taxiway+holding bay 134,000 sqm; North Apron 322,000 sqm; West Apron 65,000 sqm; TORA: 2.442 m.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 36 CAT IIIb.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport’s programme to control FOD in terms of:
a) Training: An awareness campaign for the staff working at the airport has been carried out using posters focusing on safety issues. Information is also available on the “Airport Circulation and Safety Manual” which is at all airport operatorsodisposal.
b) Inspection by airline, airport, and airplane handling agency personnel: Once a week, in the presence of one representative of the airlines operating at LIN Airport, a SEA qualified agent inspects one stand and the FOD for that stand is collected.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance is performed using airport-sweeping equipments that operate over 16 working hours. Moreover, FOD bins have been placed on the apron.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The personnel are airport staff. In the monthly Safety Committees, all representatives of agencies using airport are informed about problems and priorities concerning FOD.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): A software is used for statistical purposes to check the stored recorded values.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Surface movement radar SMR.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? A better setting of microwaves anti-intrusion system.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Microwaves anti-intrusion system. Implementation of the A-SMGCS system.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Lighting red bars together with microwaves anti-intrusion systems are used. There are sign markings like Runway Head and No Entry in additional of anti-intrusion system (microwave) for each Taxiway serving Runway. Besides, a lighting system for pilots is under investigation.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? For airport operators a special driving license is issued by Airport Authority after training and examination.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? There is a Local Runway Safety team in charge of evaluating events/hazards. Monthly, during the Safety Committee, the reports on runway safety events are discussed with the airport operators involved. These procedures are managed by ATS.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Recurrent grass cutting, native vegetation management, use of sustainable products to minimize the presence of midges. Agreements have been defined with territorial public bodies for bird and wildlife monitoring and control.
6.1 Do your staff attend recognised bird control training courses? A dedicated unit called Bird Control Unit has been created to ensure the bird control and exclusion in the airport. The BCU is composed by a group of professional figures (biologist). The training activity refers to birds" biology and attitudes, the procedures to be carried out in order to avoid the presence of birds in airport and on the monitoring data collection. The training activity refers also on procedures of airport circulation and safety manual. Since 1 August 2010, SEA has been commissioning Bird Control Italy srl (BCI), Italy’s leader in the field, for the monitoring and bloodless removal of birds and mammals from inside the airport.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): (Spacemaster) fixed dissuasion system with 2,5 kHz to 20 kHz sounds, 2000 W power; shotguns, distress call, L-RAD and propane cannons installed near the runway.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Wild rabbits, hares, foxes and nutrias. Bloodless capture.
7. CRASH FIRE RESCUE
7.2 Future developments – are there plans to purchase or dispose of any equipment? No
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Not available.
PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? 1st November-31st March





8.2 Average annual days of snow: 5-7 days
8.3 Average snow depth: 7-10 cm
8.4 Maximum snow in 24 hours: about 20-25 cm
8.5 Annual number of days of de-icing activities: about 70 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 97 airport-employed and 85 sub-contracted.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units):
SEA supplies: n. 2 snow type Fresia F.90ST; n. 2 turbo-tillers Rolba 1000r; n.4 Fresia self-propelled polishing machines; n.2 blower driven sweeper Rolba; n. 1 spreader Omer Iveco 35 f.8; n. 1 spreader Bombelli; n. 1 crawlers Prinoth t.3 (snowmobile); n. 2 de-icing sprayers track Schmidt and Giletta; n. 2 Saab skiddometer; n. 2 Schmidt sweepers sweeping; n. 2 tractor Deutz-Fahr with front roller and back sprayer; n. 2 tractor Deutz-Fahr with back spreader.
Third parties supply: n.10 trucks for knife attack m. 4,5; n. 1 brush truck with front m. 4,5; n. 20 loading trucks for snow; n. 10 mechanical shovels hp 70/100; n. 20 tractors with blade m. 3.2 and 2.5; n. 5 tractors with frontal "V" blade; n. 8 mini excavators Bob Cat; n. 2 trucks for loading and snow removal.
Others: n. 10 blade Rolba AR 450; n. 16 blade Rolba SL25; n. 9 blade Bombelli 3.2; n. 5 blade Mainardi "V"; n. 2 blade Assaloni ATM 2 RV; n. 1 brush front Fresia; n. 4 front brush Schmidt.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority one: Runway 18-36, Taxiway "T", "G", "H, "J", "K", "N" and North Apron. Priority two: West Apron. Priority three: Land side and Air Side.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Operations on runways and taxiways are performed with sweepers, snow blowers and liquid spreaders. Operations on Aprons are performed with blades. Snow is amassed and removed; afterwards pavement is treated with glycol liquid.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes about.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safety KA; Safety SD. Safety KA has been used to prevent deposit of snow on pavement. Safeway SD has been used in case of pavement with ice and subsequently treated with liquid.
12.2 Comment on storage capabilities of the chemicals that you use: Safeway KA, 100,000 litres; Safeway SD, 10,000 KG.
12.4 Have you experienced any corrosion problems with de-icers? No problems occurred with chemical use.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: De-Icer Vestergaard Beta n. 14.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Yes, we have remote dedicated de-icing positions.
14.3 Is glycol recovered? If so, please state methods: The glycol is recovered in underground metal containers.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Runway friction tester vehicle SAAB SFT9000, 2 units.
15.2 Have you any comments on the reliability of friction indexes? No comment. Once a year, SEA performs a calibration check with ASFT technical support.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No changing in the short term.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Airside Operations Department is continuously looking at new vehicles and equipment.

MILAN MALPENSA

AEROPORTI DI MILANO
SEA LINATE E MALPENSA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Milan Malpensa Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Runway 17L-35R, 235,000sqm; Runway 17R-35L, 235,000sqm; Taxiway, 552,000sqm; Apron T1, 1,150,000sqm; Apron T2, 319,000sqm; TORA: 3,920m.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 35 R/L CAT III b, RWY 17 L CAT I.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: An awareness campaign for the staff working at the airport has been carried out using posters focusing on safety issues. Information is also available on the "Airport Circulation and Safety Manual" which is at all airport operators' disposal.
b) Inspection by airline, airport, and airplane handling agency personnel: Monthly check-up with ENAC, airlines and Handlers. Periodic inspections by airport personnel.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airport sweepers are used. Moreover, FOD bins have been placed on the apron. One FOD BOSS sweeper has been purchased in order to remove FOD from apron in order to be analysed.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The personnel are airport staff. In the monthly Safety Committees, all representatives of agencies using airport are informed about problems and priorities concerning FOD.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): A software is used for statistical purposes to check the stored recorded values.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Surface movement radar SMR.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? A better setting of microwaves anti-intrusion system.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Microwaves anti-intrusion system. Implementation of the A-SMGCS system.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Lighting red bars together with microwaves anti-intrusion systems are used. There are sign markings like Runway Head and No Entry in additional of anti-intrusion system (microwave) for each Taxiway serving Runway. Besides, a lighting system for pilots has been testing.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? For airport operators a special driving license is issued by Airport Authority after training and examination.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? There is a Local Runway Safety team in charge of evaluating events/hazards. Monthly, during the Safety Committee, the reports on runway safety events are discussed with the airport operators involved. These procedures are managed by ATS.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Recurrent grass cutting, native vegetation management, use of sustainable products to minimise the presence of midges. Agreements have been defined with territorial public bodies for bird and wildlife monitoring and control.
6.1 Do your staff attend recognised bird control training courses? A dedicated unit called Bird Control Unit has been created to ensure the bird control and exclusion in the airport. The BCU is composed by a group of professional figures (biologist). The training activity refers to birds' biology and attitudes, the procedures to be carried out in order to avoid the presence of birds in airport and on the monitoring data collection. The training activity refers also on procedures of airport circulation and safety manual. Since 1 August 2010, SEA has been commissioning Bird Control Italy srl (BCI), Italy's leader in the field, for the monitoring and bloodless removal of birds and mammals from inside the airport.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): (Spacemaster) fixed dissuasion system with 2,5 kHz to 20 kHz sounds, 2000 W power; shotguns, distress call, L-RAD and propane cannons installed near the runway.
6.4 Do you carry out a bird strike risk assessment? Yes.





6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Wild rabbits, hares and foxes. Bloodless capture.

7. CRASH FIRE RESCUE

7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes it is available to other airports for training purposes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1st November-31st March
8.2 Average annual days of snow: 4-5 days
8.3 Average snow depth: 7-10 cm
8.4 Maximum snow in 24 hours: about 30 cm
8.5 Annual number of days of de-icing activities: about 90 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 198 airport-employed and 195 sub-contracted.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units):
SEA supplies: n.5 turbo cutters Fresia F90ST; n.1 self-propelled sweeper blower Schmidt; n.3 suction sweepers with front roller; n.8 self-propelled sweeper blower Fresia F2000; n.2 self-propelled sweeper blower Schmidt; n.1 self-propelled sweeper blower Boschung; n.2 blower driven sweeper Rolba; n.25 tractor blades with support 4 mt; n. 4 tractor blades with brush; n. 1 Fresia F90ST with blade and sprinkle liquid; n.2 snow compactors; n.2 tractor with rotary brush; n.3 spreaders multi de-icing – 2 Giletta and 1 Schmidt; n.3 versatil tractor; n.3 tractor with rotary brush 2 mt; n.2 friction Tester.
Third parties supply: n.14 truck blade mt. 4 and 6 mt; n.41 dumpers; n.12 farm Tractor w / trailer not exceeding 35 cubic; n.33 wheel loader mt. 2.5; n.8 tractor with blade mt. 2.7; n.10 mini-tractors with blade.
Others: n. 21 tractor with blade; n.15 farm Tractor dump from; n.10 wheel c / cubic capacity; n.7 mini-tractors with a blade n.4 min tractors spreader.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priority one: Runway 17R-35L, Taxiway "B", Taxiway "M", part of Taxiway "A", Taxiway "C" pertaining to Apron Terminal 2, Link 7, stands area "D" and De-icing area "Z" of apron Terminal 2, Area "D" Apron Terminal 2, Taxiway "W" and "K" to the intersection with Taxiway "U"; Taxiway "U" Taxiway "Y", Taxiway "G west", Taxiway "P", Taxiway "R", Taxiway "S", Taxiway "T", Taxiway "X" and De-icing area; Link 0, 1, 2, 3, 4, 5; Stands area "A", "B", "G", "H" and "F" "X" of Apron Terminal 1; Priority two, Runway 17L-35R ; Taxiway "E", Taxiway "D" and "DA", Taxiway "C" from Link 7 to intersection Taxiway "D", Taxiway "CB", Taxiway "CA", Taxiway "G east", Taxiway "WB", Taxiway "V" and remaining Taxiway "W" e "Y", Link 6; Stands area "C" and remaining areas "A" and "B" of Apron Terminal 1; Remaining Taxiway "A", Taxiway "AA", Taxiway "AB", stands area "E" of Apron Terminal 2; Priority three; Remaining Taxiway "C", Taxiway "DB", Taxiway "CF", Taxiway "F" and Taxiway "BA".
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Operations on runways and taxiways are performed with sweepers, snow blowers and liquid spreaders. Operations on Aprons are performed with blades. Snow is amassed and removed; afterwards pavement is treated with glycol liquid.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Less than 30 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safety KA, 157.000 litres; Safety SD, 19,000 kg. Safety KA has been used to prevent deposit of snow on pavement. Safeway SD has been used in case of pavement with ice and subsequently treated with liquid.
12.2 Comment on storage capabilities of the chemicals that you use: Safeway KA, 220,000 litres; Safeway SD, 34,000 kg.
12.4 Have you experienced any corrosion problems with de-icers? No problems occurred with chemical use.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: De-Icer Vestergaard Beta n. 7, Vestergaard Beta Model 15 n. 9, JBT Tempest n. 6.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Yes, we have remote dedicated de-icing positions.
14.3 Is glycol recovered? If so, please state methods: The glycol is recovered in underground metal containers.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Runway friction tester vehicle SAAB SFT9000, 1 unit (1999) – Volkswagen SFT Sharan 2008, 1 unit (1998).
15.2 Have you any comments on the reliability of friction indexes? No comment. Once a year, SEA performs a calibration check with ASFT technical support.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No changing in the short term.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Airside Operations Department is continuously looking at new vehicles and equipment.

MUNICH

Munich Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME:

Munich Airport International

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY 08L/ 26R: 4000 x 60m
TORA: 4000m LDA: 4000m
RWY 08R/ 26L: 4000 x 60m
TORA: 4000m LDA: 4000m
Total RWY Surface Area: 612.840 sqm
Total Apron Surface Area: 2.280.000 sqm
2.2 Landing aids for each RWY (e.g. CAT II): PAPI, ILS CAT IIIb

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No recent changes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD awareness is part of ramp handling personnel /operations staff training programs. FOD awareness campaigns within framework of SMS.
b) Inspection by airline, airport, and airplane handling agency personnel: Stand Pre-use FOD inspection is part of handling agency obligation. Daily routine FOD Inspection by Airport Operations Staff every 4 hours scheduled /H24.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Continuous Sweeping Program, Dedicated FOD Bins on each stand, FOD inspections by airport operations. The movement areas are serviced daily at regular intervals and when required by surface sweeping vehicles. FODBoss in operation.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Within Safety Management System, Ramp Safety Committee.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Statistical Analysis (Database), Data Collection on Aircraft Damages.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Multilateration, Visual Surveillance, Radio Instructions, Surface Movement Guidance System with stop bars and segmented taxiway center line lighting. GPS monitoring of winter services vehicles, Supervision of contractors.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No changes
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-AMGCS, ASMR, Multilateration.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Contrasting Paint of CAT 1 Holding Point Marking (black bordering) with increased character size, Runway Guard Lights.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Establishment of a Runway & Movement Control Safety Committee within framework of SMS. Any vehicular traffic operating on the maneuvering area requires dedicated driver license and must obtain prior approval/legitimation by Airport Duty Manager before requesting ATC





clearance. Any subcontracted airside works will be guarded by airport manpost with continuous radio contact to ATC and Airport Operations. Runway Inspections are carried out on ATC frequency and using English phraseology.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'nonpunitive' principles such as 'no-penalty' reporting? Reporting System is part of the SMS. Incursion Data will be exchanged between ATC and Airport within the framework of Runway & Movement Control Safety Committee. Munich encourages a "non-punitive" culture unless the incursion or incident demands inevitably disciplinary action.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: "Long grass policy"; Elimination of attractive trees and bushes within the runway system; Reduce available nesting and rooting sites by modifying buildings to limit ledge space. Close entry holes through the use of screens and boards; Cover areas of open water with wire or netting. Habitat management according to recommendation of the national German bird strike prevention committee (DAVVL).
6.1 Do your staff attend recognised bird control training courses? Yes. The coworkers of the Airport Authority, the environment caretakers and the hunters are trained internal as well as external.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Bird control staff is working on the airfield, less than hourly.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): The use of pyrotechnics together with shotgun and air rifle. Manufacturer: Blaser/Diana/Weihrauch.
6.4 Do you carry out a bird strike risk assessment? A risk assessment is carried out once a year. Every month bird strike trend is assessed in comparison with last year situation in order to understand possible.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? There are at least two daily bird control reports.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No problems. Seasonable increase of rabbits is controlled by goal-oriented hunting.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture:
4 Command Vehicles (ELW1)
1 Command Vehicle (ELW2)
4 Airport Fire-Fighting Vehicle (FLF 80/135), MAN-Saval-Kronenburg 8x8; 13500 l water, 1600 l AFFF foam (Backup)
1 Airport Fire-Fighting Vehicle (TroFLF / Panther/ AT), MAN 8x8; 12500 l water, 1500 l foam, 1000kg powder
4 Airport Fire-Fighting Vehicles (FLF/ MAN-Ziegler with articulated snozzle) 8x8, 12500 l water, 1500 l foam
3 Airport Fire-Fighting Vehicle (FLF/ MAN-Ziegler) 8x8, 12500 l water, 1500 l foam, 1000 kg powder
2 Rescue Ladder
2 Aerial Ladder and Platform (DLK 23-12 /GL C); MAN 4x4;
4 Rescue Fire-Fighting Vehicle (HLF), MAN 4x4; 2500 l water, 300 l foam
1 MAN 4x4
1 Rescue Unit (RW) MAN 4x4
3 Interchangeable-body truck (WLF), MAN 6x6;
2 Passenger Rescue Stairs 4 x
4 Mercedes / Rosenbauer
7.2 Future developments – are there plans to purchase or dispose of any equipment? No plans
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No training to other airports available.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 01st Nov – 30th Apr
8.2 Average annual days of snow: 67 days
8.3 Average snow depth: 42.5 cm
8.4 Maximum snow in 24 hours: 52 cm
8.5 Annual number of days of de-icing activities: 67 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 80 airport-employees, 18 sub-contracted companies with a total of 370 employees.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units):
7 towed airblast sweepers Overaasen RS 400
3 towed airblast sweepers Overaasen RS 200
11 towed airblast sweepers Schörling P17H/ P17HE
1 towed airblast sweeper Vammas SP 3600
1 towed airblast sweeper in reserve Overaasen RSC 200H
6 lorries with snow ploughs Kahlbacher Vampir 360 Pro
75 towing vehicles with plough and sweeper and with plough, sweeper and sprayer
3 turbine snow loaders MAN Kahlbacher KFS12050M2
3 turbine snow loaders MAN - Kahlbacher KFS 160 Verl.
1 turbine snow loaders Doppstadt – Kahlbacher
4 turbine snow loaders Steyr + KFS 1150
1 spreader (solids)
5 multi de-icers Küpper-Weisser STA 95
2 airport sprayers of 13.000 l each Dammann
5 front loaders
1 caterpillar tractor
21 trucks for snow transport

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1. Runways and taxiways; 2. Apron and all areas where service / ground handling vehicles must have access to.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow removal is done by two groups. One runway group and one apron group. Both operate at the same time. The runway group is responsible for the runway and the operational necessary taxiways in dependence of the landing direction.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes after beginning of winter service measures.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Potassium formate, RWY's and TWY's, 1.321 to; Potassium formate, Apron, 1.050 to; Sodium formate, RWY's, TWY's and Apron, 227 to. The effectiveness of formate chemicals at low temperatures is good. The holdover time depends on weather conditions.
12.2 Comment on storage capabilities of the chemicals that you use: Potassium formate: 600.000 ltr; Sodium formate: 100 to
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Solid deicers are used to extend the "hold-over" time. When spreading solid deicers, areas with increased jet blast are omitted.
12.4 Have you experienced any corrosion problems with de-icers? Yes, with potassium formate.
12.5 Have you employed any special means to economise on chemical use? Yes, we are constantly working to optimize our usage of chemical products: including special training in the use and application of chemicals as well as updating our fleet with new innovations equipment. Additionally, all of our de-icing vehicles are equipped with GPS: this helps us better determine how to deploy both chemicals and manpower.
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? Yes, we use sand on operational areas.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: GFS 2000 (Boschung), 12 outdoor measuring-stations.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Yes, a replacement of the existing system is planned for 2013. No final decision yet about the future model.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Ice warning systems are useful in supporting decisions of how to prepare / conduct de-icing operations at any given time.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes, EFM on behalf of Munich Airport. 21 units Vestergaard BETA; 2 units Vestergaard BETA 15; 1 unit Vestergaard MY.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Yes, Munich Airport operates 12 dedicated de-icing areas located close to the runways.
14.3 Is glycol recovered? If so, please state methods: Munich Airport employs a special "recapture" system consisting of runoff canals in the cement platform on which the de-icing stations are based. This allows us to recapture 50-60% of the de-icer chemicals used on aircraft; we then reuse the collected and recycled fluid as aircraft de-icing fluid.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SFT 9000, SFT 95





15.2 Have you any comments on the reliability of friction indexes? Munich is actively participating in the ICAO Friction Task Force. Beside other means, friction measurements are used as one tool for an overall runway condition assessment. Primarily the assessment of the estimated surface friction is based on contaminant type, depth and coverage. Friction Values are not reported.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yearly readjustments on the requirements of airport handling.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, we are constantly working to improve our winter service-activities – this includes buying / leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications / informational material, etc.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No

OSTRAVA

Leos Janacek Ostrava Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: OSTRAVA MOŠNOV

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas. (For example: total RWY length (or lengths), Take Off Run Available [TORA], RWY width, shoulder widths, total apron area, ramp area, other) RWY 04/22, ICAO CAT II, RWY dimensions: 3500x63M, bituminous shoulders on both sides of RWY and all TWY 5,5M.
Declared distances:
RWY 04: TORA 3500, TODA 3800, ASDA 3500, LDA 3500
RWY 22: TORA 3500, TODA 3800, ASDA 3500, LDA 3500
Total apron area: 130 000M2
ACFT stands:
APN CENTRAL 5xCAT C, 2x CAT D
APN SOUTH 3x CAT C, 2x CAT E (or 1CAT F)
APN GA 9xCAT A or 3x CAT B
APN LETs FLY 3x CAT A
Other APN and RAMP: Hangar APN NORTH 1, SERVICE APN NORTH 2
2.2 Landing aids for each RWY (e.g. CAT II). RWY ICAO CAT II, ILS CAT II/IIIA

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training is defined by airport guidelines, personnel are trained according to these guidelines.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections are done 4x / day by airport operation dispatcher.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): 4 x Jetbroom - sweepers available.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Cooperation with bird-protection service provider.
4.2 General: Are there any special systems or software solutions you employ for FOD control? No SW in use.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? ATCO, Ground FREQ.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? For implementation of ICAO CAT III/A operation
Local authorities (CAA) demands introduction of Ground surveillance system.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment) Special procedures under LVO are applied. (1 vehicle or one ACFT on movement area at the same time).
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies. RWY guard markings on every TWY. RWY guard lights on every TWY. Stop bars and elevated stop bars on TWYs. Crossing service roads equipped with elevated stop bars, markings and stop signs.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airport staff is trained every two year. Rules are defined in airport guideline. Every third month RWY safety team take place. Meeting with local aircraft operators, airport and ATC representatives.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Safety boxes are installed at airport. Non-punitive principles are applied.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds. Bird and wildlife control is provided by external provider. Control is done continuously, specialist guard in the vicinity of RWY. The provider use trained birds, firearms, dogs.
6.1 Do your staff attend recognised bird control training courses? Outsourced service.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? From 5:00 till 21:00 continuously, then on request.
6.4 Do you carry out a bird strike risk assessment? When increased concentration of birds occurs notification is received.
6.5 Do your staff log all their bird control activities? (to manage success in dealing with the problem, and to use in defence in case of lawsuits) Provider produces detailed statistic review. On its web site publishes statistics, alerts and general information on actual bird situation at major airports in the country.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture.
2 x Rosenbauer PANTHER 6x6, 12500l water, 1500l foam, 250kg powder, 2010
2 x Mercedes ACTROS BUFFALO 3 and 4, 6x6, 6000l water, 800l foam, 250kg powder, 2008
1x MB ACTROS, 6x4, container transporter, 2009
1 x Bronto Skylift F32 RLX, withdrawable platform, 2009
1x MB SPRINTER – chemical protection, 2009
1 x MB SPRINTER – transport vehicle, 2009
1x Nissan PATROL - rescue car 2006
1x Peugeot PARTNER Teepee, technical support, 2009
1 x Ambulance FORD, 1999
1 x Mitshubishi L20,
1 x Recovery container with inflatable bags
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No simulator.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1OCT – 30APR
8.2 Average annual days of snow: 120
8.3 Average snow depth: 10 CM
8.4 Maximum snow in 24 hours: 25CM
8.5 Annual number of days of de-icing activities: 45

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? 7 persons per shift (12H)

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (For example: compact jet sweeper, Schmidt, CJS 720, 4 units)
1 x compact plough – jet sweeper , MB Actros, Schmidt 560
3 x plough truck TATRA 815 + jet broom Schorling P15
1 x plough truck LIAZ 111
1x plough truck TATRA 148
1 x plough, snow tank, SPL55
1 x MB UNIMOG, plough and sander-gritter
2 x snow cutter
1 x snow cutter ZETOR
3 x plough tractors ZETOR

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility.
RWY 04/22
TWY`s
APN CENTRAL
APN SOUTH, NORTH
Other surfaces
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance. Four plough trucks with jet brooms enters the RWY via APN CENTRAL and TWY C. The snow banks are pulled sides of RWY and then snow cutter moves them of of RWY. The same procedure is applied on TWY`s and APN.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 50 minutes takes clearing of RWY at full length and width.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc.
1 x MB UNIMOG, plough and sander-gritter





1 x tractor ZETOR sander gritter
Nitric acid amide(carbamide) is used for chemical treatment of pavements. Effective use at temperature range 0 to – 8°C.
12.2 Comment on storage capabilities of the chemicals which you use. Storage in local hangar.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc. Carbamide mixed with water is used to defrost solid ice layer.
12.4 Have you experienced any corrosion problems with de-icers? No experience
12.5 Have you employed any special means to economise on chemical use? Chemical treatment responds to actual weather forecast to minimise excessive use.
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. No ice warning system at the moment.
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? Do not intent purchase of ice warning system.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units. 2x MD GLOBAL 8000 DEAP.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Yes, de-icing is provided at APN CENTRAL stand No.1 and APN SOUTH at dedicated stand.
14.3 Is glycol recovered? If so, please state methods. No

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS VOLVO (SVFT)
15.2 Have you any comments on the reliability of friction indexes? No

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details. No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units. No
16.4 Do you have any winter services equipment which you would like to sell? No

PODGORICA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Airport Podgorica

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
Dimensions of runway 2500m x 45m
Strip dimensions 2620m x 300m
Apron area 28000m^2
Apron area for general aviation 5220m2
2.2 Landing aids for each RWY (e.g. CAT II):
RWY 18 – Non-instrument approach (approach light unique system)
RWY 36 – CAT I (ALPA ATA)

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Drafting of Safety Management Manual is in process.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The staff engaged for the purpose of the operating areas maintenance is subject to training pursuant to the applicable training program.
b) Inspection by airline, airport, and airplane handling agency personnel: Regular inspection by authorized airline employer once a year.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc):
By using sweeper and carpet.
Apron FOD containers
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Currently no special systems or software solutions applied.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Procedures for movements on the operating areas are in place. Further, there is visual supervision of movements on the ground by air traffic control staff, Fire & Rescue staff (observation tower) and ramp supervisor.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No design or engineering changes are undertaken.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None mentioned safety devices from the list.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: None.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Adequate Program within the Center for professional staff training of Public Enterprise Airports of Montenegro.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, mainly with the terminal air traffic control with a view to the condition of the operating areas. After each inspection, person responsible for control of the operating areas reports to terminal air traffic control in writing. In case of identifying any irregularity/non-compliance with the procedure on aircraft and vehicle movement on the ground, the person who identified it writes a statement of claim and submits it to the airport operator manager. Such a case is considered at the session of Airport Security Committee, on which occasion the respective course of activities is defined.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Procedure for technical and physical security ref. QP 2.09
6.1 Do your staff attend recognised bird control training courses? No recognized courses attended, however we try to attend all conferences and events related to the bird control issue.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Sirens mounted vehicles and shotguns.
6.4 Do you carry out a bird strike risk assessment? No data available.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? According to doc9137-AN/898 report is delivered to CAA.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? According to local procedure the problem of wild dogs is solved.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture:
Year of manufacture - 2004
Type - Rosenbauer
Chassis – MAN
Axle – 6x6
Capacity – water – 12.000 litres of water, foam – 1500 litres
Number of vehicles – 2
Year of manufacture - 1992
Type - Amertek
Chassis –
Axle – 4x4
Capacity – water – 4000 litres of water, foam – 500 litres
Number of vehicles – 1
7.2 Future developments – are there plans to purchase or dispose of any equipment? No
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not possess a fire training simulator, but we do practical exercises/drills.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From 1st December – 1st March
8.2 Average annual days of snow:
2 days a year (last 3 years)
8.3 Average snow depth: no data available.
8.4 Maximum snow in 24 hours: no data available.
8.5 Annual number of days of de-icing activities: no data available.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 20 employed persons.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): According to subcontracted equipment list.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priorities for cleaning movement areas are the following:
RWY;
Taxiways N & B;
Apron;
Taxiways A, G & M;
GA apron;
Taxiways J & P, and





Technical apron.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: As for Guideline QP3.30.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? No data available.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Friction tester (Airport Surface Friction Tester – ASFT) type Continuous Friction Measuring Equipment – CFME.
15.2 Have you any comments on the reliability of friction indexes? – None

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Currently no
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No.

PRAGUE

Prague Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Prague Ruzyne Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY 06/24: Dimensions 3715 x 45 m; PCN 62/R/B/X/T; shoulders 2 x 7,5 m; TORA, ASDA, LDA – 3715 m; TODA – 4015 m.
RWY 12/30: Dimensions 3250 x 45 m; PCN 62/R/B/X/T; shoulders 2 x 7,5 m; TORA, ASDA, LDA – 3250 m; TODA for RWY 12 – 3400 m; TODA for RWY 30 – 3550 m.
RWY 04/22: Dimensions 2120 x 60 m; PCN 45/F/B/X/T (RWY is closed for take-offs and landings. Taxiing, parking and handling of aircraft approved).
Total Apron Area: 635 000 sqm
Total Pavement Area: 2 200 000 sqm
2.2 Landing aids for each RWY (e.g. CAT II):
RWY 06: ILS CAT I, PAPI, ALS length 480 m;
RWY 24: ILS CAT II/III, PAPI, ALS length 900 m;
RWY 12: ILS CAT I, PAPI, SALS length 420 m;
RWY 30: ILS CAT I, PAPI, ALS length 900 m.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No. Airport Prague has SMS in compliance with ICAO Doc. 9859 without any significant changes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: General FOD training is the part of periodical Security and Safety training, which is mandatory for all personnel with permission to enter the SRA zone.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport: FOD check of whole airport is one part of serviceability check provided by Airfield Operations Control at least every four hours at the Movement area and every two hours at the Apron. Handling: According the Airport rules, the Handling agent is responsible for FOD check at the stand before the arrival and after departure of aircraft.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): There are two vacuum cleaners dedicated for sweeping of the Apron. There are FOD containers at all stands.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination of FOD prevention is a business of Apron Safety Team. The representative of all Handling, Cargo and Refueling companies providing services at the airport as well as the representatives of the main airlines and AOC are the members of this team.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS at the Movement area (all vehicles are equipped with Mode S responder) and CCTV at the Apron.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS level 2.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies:
RWY: All CAT I holding points are equipped with Guard Lights and large inscriptions "RWY AHEAD" on the red background behind all the last RWY holding points marking. All CAT II/III holding points are equipped with Guard Lights and Stop bars.
TWY and APRON: TWY centre line marking has been widened for 30 cm; where an information sign would be normally installed and where is impractical to install, information marking has been painted on TWY centre line, prior to TWY intersection.
The lighted signs "Low Visibility Operations" on the apron area.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All drivers permitted to drive a car on the movement area have to have a special training providing by ATC training center and they have to pass an examination. After that, they get a special license valid for three years.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes, Prague Airport has a common reporting system for Runway Safety Incidents. The system (web reporting) is able to safeguard the identity of reporting persons. Civil Aviation Authority and Air Accidents Investigation Institute have web-based online reporting system, where reporting of all personal information is voluntary. A Committee of czALPA has a no-penalty Safety Reporting System. Pilots are asked to report accidents, incidents, extraordinary steps of flight crews or ATC or imperfections of navigation aids or airport equipment, dangerous for safety of aircraft operations.

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? Employees from the Bird control department must be the regular members of the Hunting Union and as a certified hunter they have to pass a special examination.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously, from sun rise to sun set.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): The main method of bird control is falconry. The airport has employed a group of falconers who protect the movement area with specially trained falcons, hawks and eagles. The method is based not only on the fact that the falconers hunt the wild birds but also on the fact that the birds feel threatened and choose not to remain in the airport area.
6.4 Do you carry out a bird strike risk assessment? No, but we analyze the bird strike trends on monthly basis.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Volkswagen Transporter 4x4 (UHPS) – 1x (from 2003, water 200 l, foam 20 l); Mercedes Benz Atego 4x2 – 1x (from 2000, water 2 500 l, foam 200 l); Scania 4x4 – 1x (from 2010, water 2 500 l, foam 200 l); Mercedes Benz Buffalo 6x6 – 2x (from 1998, water 8 000 l, foam 1 000 l); PANTHER II Rosenbauer HRET 6x6 – 1x (from 2009, water 12 500 l, foam 1 500 l); PANTHER II Rosenbauer 6x6 – 1x (from 2008, water 12 500 l, foam 1500 l); PANTHER Rosenbauer 6x6 – 2x (from 2003, 2004, water 12 000 l, foam 1 500 l); Volkswagen LT 46 - technical support; IVECO Magirus DLK 37 CC – ladder (37 m); IVECO Daily – HAZMAT, technical support; Scania Container Carrier incl. medical container, foam container and various technical equipment (especially DAR operation); Mercedes Sprinter – mobile command post. Skoda Octavia – IC car.
7.2 Future developments – are there plans to purchase or dispose of any equipment? We plan to replace MB Atego with a new medium size truck vehicle with 6x6 and crew cab design in 2013 and both of the MB Buffalos with one new medium size truck. According with new runway system we plan to reinforce with one heavy truck with HRET and hydrochem technology (the category of Panther) and located it to new subsidiary fire station. In 2013 we plan to replace Iveco Magirus with new generation ladder.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? There is no fire training MOCK-UP at Prague Airport neither in the Czech Republic. We are providing ICAO training abroad.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 01 NOV – 30 APR
8.2 Average annual days of snow: 27 days (based on statistics of last 12 years),





19 days (last winter 2011/2012)
8.3 Average snow depth: 79 cm (based on statistics of last 12 years), 34 cm (last winter 2011/2012)
8.4 Maximum snow in 24 hours: N/A
8.5 Annual number of days of de-icing activities: N/A

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Total winter services personnel available per shift: Operational dispatcher – 3; Operational coordinators (Foreman) – 2; Drivers – 16 internal + 12 external.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units):
Compact jet sweeper Boschung Jetbroom Runway, 4 units;
Compact jet sweeper Boschung, Jetbroom BJB 8000, 1 unit;
Compact Blower-sweeper, Schörling, P17C, 4 units;
Compact Blower-sweeper, Schörling, P21C, 4 units;
Towed Blower-sweeper, Schörling, P17, 4 units;
High speed snowblower, Kahlbacher, 2 units;
Snowblower Schmidt 5000, 1 unit;
Snowblower Rolba 4000, 1 unit;
Snowblower Schmidt 1500, 2 units;
Airport Sprayer, Schmidt, 1 unit;
Airport Sprayer, EPOKE, 1 unit;
Airport twin disc sprayer Schmidt, 1 unit;
Airport twin disc spreader Schmidt, 1 unit;
Airport disc sprayer Kobit, 2 units;
Tractor with "Y-plough", 4 units;
Unimog 300 with plough and spreader, 1 unit;
Container spreader Mercedes, 1 unit;
Small plough and spreader Magma, 1 unit;
Small plough and spreader Lodag, 1 unit;
Small sweeper Bucher CityCat 2000, 2 units;
Tractor sweeper, 9 units;
Jet Blower, 3 units;
Snow removal: truck, 4 units; loader, 3 units; tractor platform trailer, 4 units; subcontracted truck and loaders.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:
1. RWY in use + RWY exits +TWY parallel to RWY in use, apron NORTH (number of stands covering real traffic), access to Fire Fighting Rescue Service stations, entries to equipments of Aeronautical Meteorological Service an radio navigation aids relating to RWY in use.
2. Access to aircraft parking position and hangars.
3. Second RWY + RWY exits + TWYs.
4. Apron EAST and apron SOUTH.
5. Rest of the apron NORTH
6. Rest of the apron EAST and apron SOUTH.
7. Rest of movement area, equipments of Aeronautical meteorological Service, radionavigation aids and manipulation areas.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance:
Airside working group is responsible for cleaning of whole Maneuvering area:
RWG - Runway Working Group;
AWG - Apron Working Group;
GWG - Gate Working Group.
Lanside working group is responsible for cleaning of whole Landside:
Snow co-ordinator co-ordinates the action with TWR Controller. RWY, which is being cleaned, is closed for aircraft operations by SNOWTAM. The complete RWG moves to RWY threshold and starts cleaning of the RWY and parallel TWY.
Apron: Snow is pushed from the terminal building across the APRON to the grass if it is possible or it is loaded and removed.
Surface De-icing: Acetates are used for de-icing on runways, taxiways and aprons.
Urea can be used on landside only.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 30 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Movement area - potassium acetate (Clearway 1); approx. 900 000 liters. Roads / parking lots - salt approx. 400 tons. We are satisfied with effectiveness at low temperatures. However, it would be useful to increase a holdover time of de-icers particularly when freezing rain or freezing fog.
12.2 Comment on storage capabilities of the chemicals that you use: Storage for 200 000 liters directly at the airport.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Experience with solid deicers were not good, so we don´t use it any more.
12.4 Have you experienced any corrosion problems with de-icers? No.
12.5 Have you employed any special means to economise on chemical use? No.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? Application of the sand on operational areas is prohibited by CAA and urea is prohibited due to environmental reason.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Boschung Mecatronic, 8 stations.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: The ice warning system is very good tool for monitoring of the pavement condition. It also helps us with alarms of bad conditions on the runway. Its function to store historical data is very useful.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: De-icing and anti-icing is provided by 3 companies (ground handlers): Czech Airlines Handling – 4 de-icing vehicles; Menzies Aviation – 2 de-icing vehicles; Czech Ground Handling– 2 de-icing vehicles.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We have dedicated de-icing positions.
14.3 Is glycol recovered? If so, please state methods: Not yet.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS Friction Tester based on SAAB 9-5, 2 units.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, we have an action plan for replacement of existing units and increasing capacity and capability of winter services for the future.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? Not yet.

PULA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Pula Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY: 2946x45m; TORA: 2946m; TWY WIDTH: 23m; SHOULDERS: NONE; RAMP: approx. 64.200 square meters.
2.2 Landing aids for each RWY (e.g. CAT II): RWY09 - CAT I Simple Approach Lighting System. RWY27 - CAT I Simple Approach Lighting System.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, it has.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: We have internal procedures for ensuring the control of FOD and yearly safety refreshment trainings are being conducted along with licensees extension trainings.
b) Inspection by airline, airport, and airplane handling agency personnel. Airport employees are conducting inspections of FOD on operating areas several times a day. Airport procedures for controlling FOD are presented to the airlines and handling agencies during audits.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc). We use FOD containers and sweeping methods.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc). Coordination with ATC, there is no other multiple agencies.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments.) Our employees use a special Pula Airport software ("IMS") in order to log all daily inspections of operating areas in the terms of FOD's control.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Monitoring is ensured through DCS system, video surveillance (video records) and personnel observations.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No, there are not.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment) Above





mentioned devices currently are not employed.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies. Use of these technologies can be very useful and successful, especially on airports with one runway and a few number of taxiways.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airport staff are participating safety refreshment trainings courses constantly.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The reporting procedures for safety incidents has been already set up jointly with other parties active in these processes and 'no-penalty' principles are ensured.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds. The attraction of birds to the airfield is reduced by careful planning of herb cutter on the airfield and on surrounding areas.
6.1 Do your staff attend recognised bird control training courses? Yes, they did.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes, continuously in shifts.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer) Pula Airport employees use pyrotechnics, alarm shotguns and dogs.
6.4 Do you carry out a bird strike risk assessment? It's in the progress.
6.5 Do your staff log all their bird control activities? (to manage success in dealing with the problem, and to use in defence in case of lawsuits) They log all their bird control activities through our bird control programme software which indicates every single bird control prevention activity (for example: time and place of using alarm shotguns and dogs).
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No, we do not have problems with other wildlife.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture. Pula Airport vehicles: 1. PANTHER I, 6x6, Rosenbauer, 2009. Water tank: 12000l, Foam tank: 1500l, Powder tank: 250kg.
2. PANTHER II, 6x6, Rosenbauer, 2007. Water tank: 12000l, Foam tank: 1500l, Powder tank: 250kg.
3. PANTHER III, 6x6, Rosenbauer, 2005. Water tank: 12000l, Foam tank: 1500l.
4. FAUN, 6x6, Rosenbauer, 1984. Water tank: 9000l, Foam tank: 1000l
5. MAZDA, 4x4, B2500 TD, Mazda, 2004.
7.2 Future developments – are there plans to purchase or dispose of any equipment? At this moment, the construction of a new RFFS hangar is in progress.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Construction of a Fire Training Simulator is included in future plans.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 01NOV - 15APR
8.2 Average annual days of snow: 1-2
8.3 Average snow depth: 5-20cm
8.4 Maximum snow in 24 hours: approx. 20cm
8.5 Annual number of days of de-icing activities: 17-25 on DashQ400

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Pula Airport does not have a special winter service. In the case of severe meteorological conditions, winter service is formed from maintenance personnel and technical service personnel. The number of available personnel per shift would be min. 12-15.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (For example: compact jet sweeper, Schmidt, CJS 720, 4 units)
1. Anti/de-icing truck, Man-Sroder, 18.232 F-Automatic, 1 unit
2. Pavement sweeper, FMS, 1 unit
3. De-icers spreader, 1 unit
4. Other sub-contracted vehicles and equipment

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility.
1. Runway
2.Taxiways C, F and then A and others
3. Apron
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance. The clearing starts after 15-20mm of wet snow or 50mm of dry snow. It is performed with our and sub-contracted sweepers. After sweeping, the de-icers spreader, sprinkles the de-icer chemicals.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? It is hard to estimate because there was no often moderate snow on Pula Airport in the last 3 or 4 years. It happened only once and the "black top" was achieved during the night.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: We use "UREA" pavement de-icer and last 2 or 3 seasons we did not have to use it at all. "UREA" de-icer has enough effectiveness for our meteorological conditions.
12.2 Comment on storage capabilities of the chemicals which you use. We have 1,250 kg of "UREA" in our storage and more than1,250kg in a sub-contracted storage.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc. "UREA" is a solid de-icer.
12.4 Have you experienced any corrosion problems with de-icers? No, until now we did not.
12.5 Have you employed any special means to economise on chemical use? No, we did not.
12.6 Do you have any other comments on experience with chemicals? No, I do not.
12.7 Do you use other chemicals or sand on operational areas? No, we do not.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. We do not have ice warning system because meteorological conditions at Pula Airport are very good. At this moment, monitoring it is performed by personnel observations.
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? At this moment, we do not have plans to purchase an ice warning system due to mentioned meteorological conditions.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units. Anti/de-icing truck, Man-Sroder, 18.232 F-Automatic, 1 unit
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We are performing de-icing on the parking area.
14.3 Is glycol recovered? If so, please state methods. No, it is not.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Saab, SFH Friction tester.
15.2 Have you any comments on the reliability of friction indexes? No, I do not.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No, at this moment we will not change any of airport methods.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details. At this moment, we do not have plans to purchase new equipment or vehicles.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units. No, we do not have equipment or other products on order.
16.4 Do you have any winter services equipment which you would like to sell? No, we do not have any winter services equipment which we would like to sell.

RIGA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Riga Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas. Total RWY 18/36 length – 3200m, Take Off Run Available [TORA] – 3200m, RWY width – 45m, shoulder widths – 7.5m, total apron area – 373200m2, number of stands – 52. From May 1, 2013 until October 26, 2013 large scale reconstruction works will take place, including RWY resurfacing. RWY will be closed nightly 00:00 – 06:00 (local). From May 2, 2013 the THR RWY 18 will be displaced with remaining RWY length 2900m.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 18 – CAT I. RWY 36 – equipped for CATII but certified for CAT I.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? SMS has been established in 2005 and last reviewed in October 2012. SMS documentation has been revised, operational safety management structure reviewed and improved, incident reporting system improved, a method for identification of hazards and risk assessment developed. SMS documentation is accessible for all staff. Apron safety training is constantly being improved. Runway Safety Team, Aircraft Handling Safety Committee, Crisis Management Safety Committee and Aerodrome Maintenance and Traffic





Management Safety Committee are operational.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD topics are integrated in several training modules such as Ramp Safety Basic and Refresher courses, Airside driving, Marshalling, Follow-me, etc.
b) Inspection by airline, airport, and airplane handling agency personnel: The main inspection responsibility lies upon Airfield Maintenance Unit but generally anyone working on apron is trained to be responsible.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Regular sweeping of aprons, regular checks on RWY and TWYs, FOD containers on all stands.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The common Ramp Safety training module for all agents operating airside provides coordinated action.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments.) None at the moment, FOD radar is expected in future.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS controlled by ATC.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Guardlights and stopbars installed on RTHPs, signs for vehicles entering manoeuvring area and ILS critical area are installed, upgrade of ground team radio equipment to a certified system is in progress.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment) A-SMGCS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies. Special marking is in place where apron borders Manoeuvring area.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Runway/apron safety bulletins issued occasionally. Special Driving rules and training programme for driving in the Manoeuvring Area.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? All incursions are communicated between ATC and Airport Authority and investigated by Safety management team. Anonymous reporting option is available. All safety information is also relayed to the CAA.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds. No food sources; open water bodies fitted with criss-cross wires and bright pieces of ribbon; tall grass; all bush and small trees cut; hangar door always-closed policy; chemical bird repellent on aerodrome signs, rooftops and edges; and removal of nests.
6.1 Do your staff attend recognised bird control training courses? In May 2009 a week-long on-site training was commenced by MJ Airports, 2010 – ACI course.
6.2 Are your bird control staff working on the airfield
a) continuously?
b) at least every hour? Yes
c) less than hourly?
6.3 What specialist equipment do you employ for bird control? Please state relevant supplier/manufacturer. Scarecrow handhelds and mobile units; Merlin bird radar by deTect to be connected to ATC in 2013; Pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? Yes, annually.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, by means of Scarecrow Ultima.
6.6 Does your airport have problems with other wildlife (sheep/deer, for example) and, if so, how are these issues being addressed? Foxes, dogs, and cats occasionally observed. Beavers cause a lot of trouble but they operate outside the fence. Most of fence is buried at least 30cm under surface. Trees are cut to create a 6m wide clear buffer behind the fence.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: 1xScania, 4x4, 2,500 litres, type A, 2009 ; 1xScania, 6x6 8,000 litres, type A, 2009 ; 2xSIDES VMA, 6x6, 9,500 litres, type A, 1999; 1xVOLVO FCT, 4x4, 9,000 litres, type A, 1973; 1xVOLVO CCT, 4x4, 4,000 litres, type A, 1973.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? October 25 – March 30
8.2 Average annual days of snow:
40-45 days with snowfall
8.3 Average snow depth: 10-15cm
8.4 Maximum snow in 24 hours: 30cm
8.5 Annual number of days of de-icing activities: 150 days of aircraft de-icing.
60 days of pavement de-icing.

9. WINTER ORGANISATION

9.1 How many airport-employed winter services personnel are available per shift? 2 aerodrome duty engineers, 2 workers and 13 drivers.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units: universal aerodrome vehicle, BOSCHUNG JETBROOM, 6 units; aerodrome sweeper/snow plough, MOAZ DE-224, 3 units; frontloader, CASE and Liebherr, 2 units; tractor, Various, 6 units; snowblower, DE-226, 2 units; snowblower, Overaasen UTV630, 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility. Runway, operational taxiways, RFFS, apron 1, apron 2, apron 3, apron 4, service roads, non-operational taxiways.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance. Centre-line-to-edges method when no significant crosswinds present. 4 vehicles on the runway, 2 – on taxiways. After two full-length runs on runway, 2 of the vehicles move to taxiways, the other 2 remain on runway to "fine-clean" the corners and edges.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 13-15 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc. In 2013 Proviron liquid 120t, Aviform solid 180t per winter. Previous winter Kemira Clearway liquid and solid.
12.2 Comment on storage capabilities of the chemicals which you use. Solid agent is very well stored in the original plastic bags. 50m3 fibreglass storage tank for liquid agent.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc. We do not mix. Blow-away is much dependent on granular shape. We normally choose irregular granules.
12.4 Have you experienced any corrosion problems with de-icers? Minimal. Issues are mostly reported when galvanized steel parts get in contact with vaporized agent or the solid agent sticks to some parts of trucks where it does not get washed away immediately.
12.5 Have you employed any special means to economise on chemical use? Substitute with sand on remote service roads.
12.6 Do you have any other comments on experience with chemicals? Spherical granules are not very good on ice or any other hard/smooth surface because they simply "roll away" from the desired spreading area.
12.7 Do you use other chemicals or sand on operational areas? Sand is sometimes used as temporary solution on service roads with compacted snow or ice.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. None
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems. N/A

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units. N/A
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Currently de-icing takes place on apron.
14.3 Is glycol recovered? If so, please state methods. The new de-icing pads incorporate glycol recovery system, to be operational in winter 2013/2014.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Sarsys Saab 9-5 (main). Bowmonk AFM2 Mk3 (back up).
15.2 Have you any comments on the reliability of friction indexes? This issue should be cleared globally.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? The existing model works well.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details. None
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units. No
16.4 Do you have any winter services equipment which you would like to sell? None.





SKOPJE

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Skopje Alexander the Great Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas. (For example: total RWY length (or lengths), Take Off Run Available [TORA], RWY width, shoulder widths, total apron area, ramp area, other): RWY 34 length 2.950 m=TORA/TODA/ASDA/2.450 m =LDA , RWY16=2.450m; RWY width 45 m, shoulder 7.5 m, total apron area 60.520 m, ramp area 64.080 m.
2.2 Landing aids for each RWY (e.g. CAT II): ILS CAT I RWY 34 (LLZ, GP, OM, MM, VOR/DME and visual aids: ALS & runway lights CAT II, PAPI) and RWY 16 only visual approach.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Implemented.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: included in ramp safety training
b) Inspection by airline, airport, and airplane handling agency personnel: By airport staff
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Use of sweeping vehicle SCHMIDT and FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): airport ramp dispatcher
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments.): No

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Visually by ATC tower.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Not required.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None of this, only stop-bar lights.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: none.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airside safety training only for airport vehicle operators.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: grass mowing, cutting trees etc.
6.1 Do your staff attend recognised bird control training courses? No.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer) Bird guard pro super.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5Do your staff log all their bird control activities? (to manage success in dealing with the problem, and to use in defence in case of lawsuits) Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Rosenbauer Rapid Intervention Vehicle; Mercedes Benz Atego 1225 4x4; 2.400/300/250 fix mix; 2002; Rosenbauer Universal FF truck MB Actross 3343/6x6/ 6.500/800/250 ULF foamatic/2002; Rosenbauer FF truck MB Actross 3343/6x6/9.000/1.000/250 FLF/2002.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 October – 01 April.
8.2 Average annual days of snow: 6 days
8.3 Average snow depth: 14.1cm
8.4 Maximum snow in 24 hours: 50cm
8.5 Annual number of days of deicing activities: 71 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 20

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (For example: compact jet sweeper, Schmidt, CJS 720, 4 units): Compact Jet Sweeper CJS 914 Super II x 5 units/Solid and liquid spreader with snow plough Mercedes-Schmidt SST-50 x 1 unit/Liquid sprayer Mercedes-Schmidt ASP 25 m span x 1 unit/snow blower Rolba R 3000 x 1 unit/Snow blower Schmidt Supra 3000 x 1 unit/Snow plough Mercedes-Schmidt 4 m width x 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway 34/16, TWY A & H, apron.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Centre line to edges.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved hold-over times etc: Aviform L-50, 43.800 l.
12.2 Comment on storage capabilities of the chemicals which you use: 60 m3.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: only urea is used.
12.4 Have you experienced any corrosion problems with de-icers? No
12.5 Have you employed any special means to economise on chemical use? No
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: handheld infrared thermometer.
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: n/a.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: FMC LMD 2000, 2 pcs.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? No/yes.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SAAB SFT 340 i.
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment which you would like to sell? No

SOFIA

ЛЕТИЩЕ СОФИЯ
SOFIA AIRPORT

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Sofia Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY length 09/27: 3600m ; RWY width 09/27: 45m ; RWY shoulder widths: 2m x 7.5m.
RWY 27 : TORA 3,600m ; ASDA 3,600m ; TODA 3,600m ; LDA 3,600m.
RWY 09 : TORA 3,600m ; ASDA 3,600m ; TODA 3,600m ; LDA 3,300m.
2.2 Landing aids for each RWY (e.g. CAT II):
A. Radio aids: ILS: RWY 09 – CAT I, RWY 27 – CAT IIIA; DME; DVOR.
B. Lighting aids: Precision approach lighting system for each RWY; RWY edge lights for each RWY; RWY threshold lights for each RWY; RWY end lights for each RWY; RWY centre line lights for each RWY; RWY TDZ lights: for RWY 27 – Yes, for RWY 09 – No; Visual approach slope indicator systems: PAPI for each RWY.
C. Marking: According ICAO Annex 14, figure 5-5 (B).

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome





operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? SMS was introduced at Sofia Airport during the period from 2007 to 2009. According the SMS Manual the system should be updated every two years on the basis of the safety analysis and risks and hazards assessments. The Airport Operator is planning for the Budget 2013 to send its experts to take part to the specialized ICAO trainings in order to update the new SMS issue.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD prevention programme is a part of the Safety Management courses, which are obligatory for all staff working at the airport territory.
b) Inspection by airline, airport, and airplane handling agency personnel: Daily (24/7) inspections by Sofia Airport FOD prevention Sector – within the structure of Safety Management Department of Sofia Airport.
c) Sweeper, Boshung Jet Broom BJB 800, 1 unit. Sweeper, Bucher City Cat 2020, 1 unit. Single FOD BOSS Assembly. FOD containers are installed at the apron.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airlines, ATC Sofia Tower, handling operators, cargo operators and other airport users.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No, at this time there are not any software solutions in use for FOD control.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? All vehicles are equipped with radio communication devices to contact whit ATC Sofia Tower. Aircraft movements are monitored by ATC Sofia Tower. All movement area is monitored by ground radar.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All marking, signs and lighting system are designed according ICAO Annex 14.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Currently no safety devices are employed.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Reflective marking, illuminated signs and AGL System.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Safety operations courses, including ICAO phraseology, are obligatory for the all ground personnel working at the airport territory. Training and practice on Ground Movement Local Rules and Regulations.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The reporting system is an integral part of airport SMS.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Bird deterrent System is installed and is operating at Sofia Airport. Daily (24/7) inspections by Sofia Airport Bird strike & wildlife prevention Sector – within the structure of Safety Management Department of Sofia Airport. Bird strike prevention Manual is adopted and implemented at the airport.
6.1 Do your staff attend recognised bird control training courses? Yes, they do.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Bird control staff is working continuously (24/7).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird deterrent system: Phoenix Wailer Mk III.
6.4 Do you carry out a bird strike risk assessment? Yes, of course. It is a part of Annual Safety Report.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, the records are put in the Report Book.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Rabbits, dogs and foxes appear accidentally at the airfield. Bird & Wildlife Control Unit deals with prevention of accidents connected with other wildlife.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Mercedes UNIMOG, 4x4, 1000/100 l, 1 unit; Mercedes SAURUS, AS 12+250, 6x6, 10000/1200 l, 2 units; Tatra CAS 815, 6x6, 8000/800, 2 units; Mercedes truck with tank of 22000/700 l, equipped with an installation for runway foaming q 1 unit.
7.2 Future developments – are there plans to purchase or dispose of any equipment? There are plans for order of Fire Fighting Vehicle and of Emergency Vehicle.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November – March
8.5 Annual number of days of deicing activities: 54 – 70 days

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? Seven employed / shift

10. WINTER EQUIPMENT INVENTORY

Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Truck-trailer, Tatra with Plough, Schmidt - 9 units; Rotor sweeper, Ural, 2 units; Rotor sweeper, Rolba Bucher, 2 units; Brush blower, Overaasen, 6 units; Brush blower with plough, Boshung, 2 units; Brush blower with plough, Fresia, 2 units; Specialized snow cleaning combined machine, Boshung, 1 unit; Specialized snow cleaning combined machine, Bucher, 2 units; Spreader, IFA, 1 unit; De-icing machine, Boshung, 1 unit.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway, Taxiways (entrance & exit), Apron, other Taxiways. State the vehicles, formations and general method of runway, taxiway and apron clearance: General method is: Push out snow with ploughs and brushing; throw out snow with rotor sweeper; use spreader / if necessary; friction testing.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? For 35 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved hold-over times etc: Carbamid (urea), 200 t
12.2 Comment on storage capabilities of the chemicals that you use: 200 t.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Use only solid de-icers, treatment from wind direction.

14. AIRCRAFT DE-ICING

Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes, Sofia Airport provides directly de/anti-icing operations. The following vehicles are in use: Ford 1800TM – 2 units. FMC TEMPEST II – 2 units. Liquid – During Winter 2012/2013 "Sofia Airport" EAD is going to use two different brands of anti icing fluids. The season will be started, using fluid "Clariant Safewing MP II Flight". Upon its completion, Kilfrost ABC K-Plus will be used.
PAD "EAST" is dedicated for 1 /one/ aircraft ICAO code E. PAD "WEST" is dedicated for simultaneously treatment of 2 /two/ aircraft ICAO code C or 1 /one/ aircraft ICAO code D, E.
14.3 Is glycol recovered? If so, please state methods: No, the glycol is not recovered.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Saab 9000 SFT; Saab 95 SARSYS
15.2 Have you any comments on the reliability of friction indexes? No, we haven't.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes. Overaasen RS 400, 2 units (in process of concluding of contract for delivery).
16.4 Do you have any winter services equipment that you would like to sell? No, we haven't.

SPLIT AIRPORT

Split Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Split Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY length-05/23-2550x45m; TORA-05/23-2550m; TODA-05/23-2550m; ASDA-05-2800m; ASDA-23-2500m.
2.2 Landing aids for each RWY (e.g. CAT II): CAT-I.





3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training is done through SMS trainings.
b) Inspection by airline, airport, and airplane handling agency personnel: Regular audits and daily FOD inspection.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD-boss is used on Split Airport. Twice a day our workers do "walking checks" , looking for FODs. We have FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): There are no multiple agencies using airport.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Split Airport has an own software solution called "Galiot". Every FOD that was found needs to be filled in "Galiot". On that way we collect more information about FOD and we do analysis.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Movements on the ground are regulated by the Airport local rules.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): There are no safety devices in place.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: We have warning signs.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All participants shall follow procedures stated in Airport Manual.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? We have been set up jointly with other parties. We respect "non-punitive" principles.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Our bird control staff are checking airfield continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Fire sirens,rocket gun, MEGA BLASTER PRO.
6.4 Do you carry out a bird strike risk assessment? Yes, using Wildlife Management modul in "Galiot" system.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Our staff log all activities using Wildlife Management modul in "Galiot" system.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.
7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 1 Heavy fire fighting vehicle MAN 6x6 8.500L/1000L. 1 Heavy fire fighting vehicle MERCEDES 9000L/1000L. 1 Heavy fire fighting vehicle MERCEDES 8500L/1000L. 1 Commander vehicle Jeep Cherokee 2,8 CRD. 1 Commander vehicle Jeep Cherokee 2.5 TD. 1 Trailer Zigler with medical equipment 2,5 t.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Split Airport doesn't have Fire training simulator.
PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? 01.11-31.03.
8.2 Average annual days of snow: One to two times per year – 5 days in total
8.3 Average snow depth: Few centimetres (up to 2cm).
8.4 Maximum snow in 24 hours: Nil
8.5 Annual number of days of de-icing activities: 2-3
9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 4-6.
10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): De-icing vehicle – Stadler. Type IV- Clariant.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 1 de-icing vehicle – Stadler
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? On parking area.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Vehicle SAAB 900
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? Yes.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: We plan to purchase more FOD-cleaning unit FOD boss, Apron Bus, Runway center line lights, vertical signs.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Buses for pax transfer, Cobus, 2 units.
16.4 Do you have any winter services equipment that you would like to sell? No.

STAVANGER

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Stavanger Airport, Sola
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY 11 : TORA 2299m ; ASDA 2299m ; TODA 2449m ; LDA 2199m ; Width 45m ; Shoulder 7.5m.
RWY 29 : TORA 2349m; ASDA 2349m; TODA 2499m ; LDA 2199m ; Width 45m ; Shoulder 7.5m.
RWY 18 : TORA 2556m ; ASDA 2556m ; TODA 2826m ; LDA 2496m ; Width 60m ; Shoulder 7.5m.
RWY 36 : TORA 2556m ; ASDA 2556m ; TODA 2706m ; LDA 2556m ; Width 60m ; Shoulder 7.5m.
Aprons for commercial activity: Apron 5 – 4500m2 in use. GA. Minor aircraft only. Apron 7 – Helicopter only - 38000m2. Apron 9 – 78000m2. Apron 10 - 7500m2. Apron 13 - 18000m2.
2.2 Landing aids for each RWY (e.g. CAT II):
RWY 18: Code 4D, precision CAT II, ILS, DME, PAPI.
Lights: Approach LGT high/low intensity, threshold, CL, edge, TDZ and RWY end LGT.
RWY 36: Code 4D, precision, ILS, DME, PAPI.
Lights: Approach LGT threshold, CL, edge and RWY end LGT.
RWY 11: Code 4D, precision, ILS, DME, PAPI.
Lights: threshold, center LGT marking, edge, aiming point LGT and RWY end LGT.
RWY 29: Code 4D, non-precision, Doppler/VOR/DME, PAPI.
Lights: threshold, CL marking LGT, edge, aiming point LGT and RWY end LGT
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No changes are made yet, but there are proposals to improve RWY safety. Local Runway Satefy Team has proposed some improvement. Obstacle chart A is upgraded recently.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Continuously surveillance by special trained employees.
b) Inspection by airline, airport, and airplane handling agency personnel: All personnel are imposed to take action against FOD. Airport stands is inspected before use, by the handling agency. Compact sweeping machines is regularly operating the docking area
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Wast bin are located on every stand and in the service area. Runways oand taxiways is swapped regularly, and magnetic bars is used every 3 month.
d) Co-ordination of multiple agencies us-





ing airport (airlines, handling agents etc): Regular meeting in AOC and similar councils.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Checklists and logging are available in our system of Administration, Operation & Maintenance (PLANIA). FOD is also being registered in deviation system MESYS.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Ground radar is in use, and visibility by beacon light requirement on vehicle.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Checklist is used on daily inspection. Local Runway Safety Team is a resource regard pilot reports and feedback. Construction site are continuously surveyed and analysed regarding obstacle, FOD and "hot work". Meetings are held on daily and weekly basis.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): LAM system will be implemented in 2013.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Blue colour is in use for ground operations (special required taxi operation). Require Follow Me and signal guidance.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All personnel operating on airside, is trained by special course before receiving proximity card. Common procedure and regulations are presented by the instructor. Interactive courses regarding airside safety must be passed. Operations on manouvering area, require special skills and training, and are limited to a group of persons.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Procedures and investigation routine is based on national regulations. CAA will be informed by the pilot and controllers report.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: 3 large lasers are continuously covering both of our runways, by sending beam in rotary circles. One car is dedicated to "Bird control", and keeps the area under surveillance during daytime. Bird location is plotted on the map, for further discussion and preventive action.
6.1 Do your staff attend recognised bird control training courses? Yes
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? It varies, based on the amount of birds/weather condition. Bird controller is always in vicinity of the airfield, ready to take action.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Hand lasers, pyrotechnical and guns.
6.4 Do you carry out a bird strike risk assessment? Yes
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? We have a small amount of deer, which will be hunted immediately.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: 3 x Rosenbauer Panther 6x6 CA Euro 5; Chassis: Rosenbauer Motors 36.705 4x4, 705 hk Caterpillar engine, Twin Disc Automatgir (1200ltr water / 1500ltr. foam / 250 kg powder); 2 x Rosenbauer MAN 8000ltr water and 500ltr foam. (1998) (Backup).
7.2 Future developments – are there plans to purchase or dispose of any equipment? No
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1.10-1.5
8.2 Average annual days of snow: Various from 17-75
8.3 Average snow depth: No data available.
8.4 Maximum snow in 24 hours: <25 cm.
8.5 Annual number of days of de-icing activities: 90

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Normally 1 – 4 person's pr. shift. 5 sub-contracted personnel available on request.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow blowers: 3 - (1 Fresia, 2 Codiac). Sweeper: 6 - 4 Øveraasen, 2 Wammas. Wheelloader: 5.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway in use, taxiways in use to Apron 9 (Terminal)
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: 4-5 sweepers, 1 snow blower, 1 chemical/sand-spreader, 1 lamp-brush, 1 wheel loader and 1 supervisor.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 20 minutes - runway only.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Pavement on Dei-ce area is sealed asphalt, with drainage guttering. The amount of glycol used in season 2011/2012, was 79129 ltr.
12.2 Comment on storage capabilities of the chemicals that you use: 60.000 ltr are distributed in to storage tanks.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Solid de-icers mixed with liquid de-icers is used only a few times on compact snow/ice. The result was god. Normally we struggle for black top, because of fast change in weather.
12.4 Have you experienced any corrosion problems with de-icers? Insignificant. The equipment is always flushed with water after use.
12.5 Have you employed any special means to economise on chemical use? No restriction, but common sense.
12.6 Do you have any other comments on experience with chemicals?
12.7 Do you use other chemicals or sand on operational areas? Chemicals and sand is in use.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Surface temperature is monitored by 3 sensors.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: The system is only one of several aids for the operators. Human factor always plays a part in decisions. Knowledge and experience is the main key for success.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Performed by handling agent. 4 vehicles available.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Dedicated area.
14.3 Is glycol recovered? If so, please state methods: Cached by drainage system, in to storage tank.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? BV11 Skeedometer, as a supplement for decision.
15.2 Have you any comments on the reliability of friction indexes? Based on experience, the index is useful and reliable. However the operator must be able to evaluate the significance of the result based on actual conditions and possible failure on friction tester.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes. 1 Snowblower and 1 sweeper.

TALLINN

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Lennart Meri Tallinn

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 08, 3070x45, TORA 3070m, TODA 3370m, ASDA 3130m, LDA 2820m; RWY 26, 3070x45, TORA 3070m, TODA 3130m, ASDA 3130m, LDA 3070m. RWY shoulders widths 7.5m.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, SMS elements are regularly reviewed and





risks assessed, followed by action plans.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training carried out for all personnel airside area.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspection by safety, airport maintenance and ground handling personnel.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance using sweeping; magnetic bars and on every stand special FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination of multiple agencies using airport (handling agents and operators).
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS; by TWR; camera system (CCTV)
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? A-SMGCS.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Stop-bars; guard lights and marking most effective warnings.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Manouvering area driving training program; Runway Safety Team
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Do not make airfield attractive for birds
6.1 Do your staff attend recognised bird control training courses? Yes
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? 24/7
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Audio systems, Guns, Pyrotechnic, ScareyMan
6.4 Do you carry out a bird strike risk assessment? Yes 6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)?Yes
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: LJ 11 Scania 113h 6x6 1996. Reg.nr 136AIR, Rosenbauer, water 9000 l, foam 1000l, renovated in 2011. Pump 6000 l/m
LJ21 Scania 113h 6x6 1996.reg.nr 132AIR, Rosenbauer, water 9000l, foam 1000l, renovated in 2011. Pump 6000 l/m
LJ31 Scania 480R 6x6 2009, reg nr. 137BCE, Wawrzaszek, water 9000l, foam 1000l, pump 6000 l/m
7.2 Future developments – are there plans to purchase or dispose of any equipment? Heavy rescue container has been purchased, all resources are reviewed yearly according to budget.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes, it is available to other airports.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 October - 15 April
8.2 Average annual days of snow: 65
8.3 Average snow depth: 28 cm
8.4 Maximum snow in 24 hours: approx. 50 cm
8.5 Annual number of days of de-icing activities: 35

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 12

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Schmidt CJS 914– 2 units; Vammas SB 4500H- 10units; Vammas Trucks: MAN 4X4 - 6 units; MB Actros 6X4 -7 units; Shmidt SCL and Vammas PS 3500 snow cleaning appliance for runway and taxiway lighting; Snow Cutter-Blowers: Vammas B 400- 2 unit; De-icer equipment: spreader for solid and liquid Schmidt Stratos 3 units; Friction tester: ACE skiddometer BV-11 –3units; Tractors: Valtra with several equipment –4 units, Bobcat –1 unit, Wille 455-1unit, Case 821C with plough and bucket 4 units; Airport Sweepers: Bucher Schörling 3000; Shmidt 990; CityCat 2020.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: RWY 8/26, TWY B, exit road from the fire station and ILS critical areas; 2. 1-15 ACFT stands on the Apron A; 3. TWY A and TWY C,D,E,F 4. Apron B and C; 5. Other ACFT stands, apron A;
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY: 5-11 vehicles along centreline from TWY B and from RWY 08 to 26 and back. TWY and Aprons cleaning system is same: from centre to shoulder.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? "black top" on the runway achieved in 10-15 min.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Unisalt SF 200 tons. Unisalt BA150 tons. Unisalt is effective and reacts very quickly. No experience with using below –10c.
12.2 Comment on storage capabilities of the chemicals that you use: We store approximately 30-60 tons of Unisalt SF (dry) and 30-50 tons of Unisalt BA (liquid).
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc:
12.4 Have you experienced any corrosion problems with de-icers? Yes.
12.5 Have you employed any special means to economise on chemical use? Yes, very good information about weather and experiences.
12.6 Do you have any other comments on experience with chemicals? Trying to vary (to use more environment friendly chemicals).
12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Runway temperature sensors (6 sensors on RWY by Vaisala).
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Have been beneficial.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Airport is not providing aircraft anti/de-icing service directly, Tallinn Airport GH is providing these services. They have 4 units by Vestergaard.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Anti/de-icing is performed on the parking stands.
14.3 Is glycol recovered? If so, please state methods: No

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ACE skiddometer BV-11 –3units
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes, we upgrade them every year.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

TIVAT

Aerodromi Crne Gore
Airports of Montenegro
Aerodrom Tivat - Airport Tivat

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Tivat Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY length x width: 2500 m x 45 m; TORA: 2500 m; Total Apron area: 46212 sqm; Commercial aviation apron: 450 m x 76 m; General aviation apron: 156 m x 77 m; ICAO Category: 4D.
2.2 Landing aids for each RWY (e.g. CAT II): APPROACH AND RUNWAY LIGHTING: RWY14: PAPI Both/3°, THR





LGT colour WBAR green
RWY32: CAT I 900 M, PAPI Both/3.2°, THR LGT colour WBAR green

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? SMS is not available at Tivat Airport, neither as part of Aerodrome (Certification) Manual nor as a standalone publication.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD training is provided by Airports of Montenegro Training Centre through either safety awareness training for all airside personnel or/and specific courses (Ramp agent training, GSE operator training…)
b) Inspection by airline, airport, and airplane handling agency personnel: Once a year, at least, inspections and/or audits are performed by airlines.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airfield Sweeper "FOD BOSS"
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Maintenance of movement and manoeuvring area is responsibility of airport operator i.e. Tivat Airport (Airports of Montenegro).
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Nil.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? N/A (Radio communication only)
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? N/A
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): N/A
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: N/A
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? N/A
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? N/A

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: "Tivat Airport Bird strike and Wildlife hazard Management and Prevention Programme" is in place at Tivat Airport.
6.1 Do your staff attend recognised bird control training courses? No
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): ARFFS trucks (ROSENBAUER PANTHER 6X6) and start gun /shotgun.
6.4 Do you carry out a bird strike risk assessment? N/A
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Type: Rosenbauer – Panther, 2 units; Chassis: MAN; Axle: 6x6; Capacity: water/12.000 lit.; foam/1.500 lit; Year of manufacture: 2004.
7.2 Future developments – are there plans to purchase or dispose of any equipment? N/A
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? N/A

PART 2: WINTER SERVICES QUESTIONNAIRE

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use?
Friction tester model: ASFT – T10

UMEÅ

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Umeå Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 14 : TORA 2302, TODA 2302, ASDA 2302, LDA 2302, Cat 1, Ref.kod 4C. RWY 32 : TORA 2302, TODA 2302, ASDA 2302, LDA 2242, Cat 1, Ref.kod
2.2 Landing aids for each RWY (e.g. CAT II):

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes, we have made changes in our SMS after last audit 2012-12-08—09

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Ground Handling basic training according to IATA includes FOD control of apron and stands.
b) Inspection by airline, airport, and airplane handling agency personnel: Prior to landing, airport personnel inspects stands.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The Airport have 3 Overaasen snow sweepers, magnetic bars, FOD containers, 4 tractors, 3 snow throwers etc.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): The Airport has 3 Handling partners witch provide passenger handling. Swedavia is providing all ramp handling on ramp for all customers.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Crew inside the TWR is looking out, no radar.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes, we are increasing the number of roads entering the runway. We will even put up traffic lights at hot spots during 2012.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment):
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Yes, we use lot of paint and signs, soon we will have traffic lights witch will be controlled by the TWR.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Before you are allowed to drive a vehicle on airside, you must receive training for that by Swedavia. Two times every year we have a local meetings with the head pilots from each airline company.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Everyone is allowed to report incidents in our system for reporting and you can be anonymous, no-penalty reporting.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Yes they do.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? They are on duty H24.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Weapons and traps
6.4 Do you carry out a bird strike risk assessment? Yes
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes, all activities are signed in the log book.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes, bird and foxes.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: RB-90, Volvo, 6x6, 9200 litres of water, 500 litres MOUSOL FF 3/6, 1991 and 1992
7.2 Future developments – are there plans to purchase or dispose of any equipment? New fire trucks est. delivery Q1 2013.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? De-/Anti-Icing between beginning of September and end of May
8.2 Average annual days of snow: 150 days/year
8.3 Average snow depth: 40-50cm
8.4 Maximum snow in 24 hours: 40 cm
8.5 Annual number of days of de-





icing activities: Average 1100
9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Ground Handling incl. De-/Anti-Icing personnel average 10
10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): One Vestergaard Elephant Beta propmix and one Vestergaard Elephant My premix for aircraft de-/anti-icing.
11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: RWY nr. 1, TWY nr: 2, APRONS nr: 3
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: See p. 4.1 C
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Immediately
12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Aircraft de-/anti-icing fluids by Clariant have, according to our experience, a high efficiency. Both type I and type II shows to be working well in low temperatures and gives a fair hold-over time. Quantities used last season was: Type I, 176.000 litres and Type 2, 47.000 litres.
12.2 Comment on storage capabilities of the chemicals that you use: Type I 23.000 litres as a fixed container inside a building, Type II stored in cubitainers of 1000 litres.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Aircraft de-icing fluids: No problems with either, mixing in our Beta is Propmix according to OAT. Stands are at enough distance to prevent jetblast from blowing fluid onto or off an aircraft.
12.4 Have you experienced any corrosion problems with de-icers? No, not regarding aircraft de-icing fluids.
12.5 Have you employed any special means to economise on chemical use? No, flight safety comes in first hand.
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? Yes, we use sand, UREA and chemicals on the RWY.
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Waiisala OY
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Very helpful, reduce us of chemicals
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes. Two de-/anti-icing units, one Vestergaard Elephant Beta and one Vestergaard Elephant My
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-/Anti-Icing at stand
14.3 Is glycol recovered? If so, please state methods: Yes. By a vehicle that absorbs fluids from the ground.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? 3 SAAB Friction tester
15.2 Have you any comments on the reliability of friction indexes? We trust the equipment
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Aircraft de-icing: A new truck, Vestergaard Beta, is planned Q2 2012.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No

VARNA

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Varna Airport, Fraport Twin Star Airport Management AD.
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY: 2517x45m, Asphalt; Shoulders: 2x7,5m, TORA – 2517m; TODA 09 – 2677m; TODA 27 – 2702m; ASDA – 2547m; PCN 66 F/D/X/T, Apron area – 24 stands.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 09 CAT I PA 1, ILS category I; RWY 27 CAT I NON P, Co-located VOR/DMA.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Varna Airport has established and implemented a Safety Management System since 2007. The SMS structure and goals are in accordance with the ICAO Manual on Certification of Aerodromes. Safety Manager nominated. Aerodrome manual is available. An Airport Safety Committee has been established. There is training program for staff. There are reporting and investigation systems. Safety relevant processes have been identified and documented as Incidents/Accidents, Spillages, Bird strike and presence of animals in maneuvering areas, Damages to aircraft or to airport facilities, Jet-blast, Incorrect service operations, including refueling procedures, Wrong procedures of aircraft movement to/from stands, and any other events with potential impact on safety. Changes to SMS following the reappraisal of risks and hazards identified by internal/external SMS audits have been done.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Training trough Airside Vehicle Permit Program. Removal and prevention of FOD is a theme that is communicated to all persons trained for work in the movement area.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspection by the Airport. All parties operating in the movement area are responsible for the prevention and removal of FOD. Stand Pre-use FOD inspection is part of handling agency obligation. Airport Apron Supervision inspects all apron areas every day.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Dedicated FOD bins on apron, FOD inspections by Airport Operations and Safety staff and removed by airfield maintenance service employee. FOD sweeper is being used.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes, Airlines and Handling agencies. Within Safety Management System.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): All FOD findings are recorded and airfield maintenance service is advised accordingly. A software is used for statistical purposes.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Airside Vehicle Permit Program available. Airside Vehicle Training.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes. All marking, signs and lighting systems are designed according ICAO Annex 14. Incursion hot spots have been identified and published. Hazards will be eliminated with all necessary changes.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): No specific safety devices are currently employed.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Reflective pavement paint, illuminated signs. Airport constantly upgrades infrastructure. Ceilings of all cars moving on manoeuvring area are covered with reflective foil.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? For airport operators a special driving license is issued by Airport Safety Department after training and instruction. Any subcontracted airside services are escorted by trained airport employee with continuous radio contact to ATC. Radio communication ICAO phraseology for the staff who are working at the movement area is obligatory. Local Runway Safety Team established and promotes a no blame culture.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Reporting system is part of the SMS. Fraport Twin Star Airport Management AD Varna Airport has local regulations for reporting system. Reporting procedures for runway safety incidents are being set up jointly with other parties active in these processes.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Grass management – length of grass – 15-20cm. Insecticide used to discourage insects. We use static audio bird repellent system, static scarecrow bird, static gas gun, mobile laser. We use trained staff, who make patrols in airfield for breaking and chasing of birds with off-road car. The car is equipped with mobile acoustic system and system for emission of specialised 'distress





calls'. The staff use gas pistol and flares.
6.1 Do your staff attend recognised bird control training courses? Yes, internal training courses.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes. 24/7. Bird Control patrol. The staff works on airfield during spring and summer less than hourly.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/ manufacturer): Recorded distress calls 'Wingaway', pyrotechnics 'Arkus' shotguns, 'Deger', laser LEM 50, Bird Repellent System Phoenix Wailer, mobile acoustic system 'Scarinbirds'.
6.4 Do you carry out a bird strike risk assessment? Not yet.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes. Special statistic form for bird presence is being filled in during patrols. Bird strike statistic established.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: CFR vehicle, Mercedes 1550, 1000l water, foam 100l; 1990 CFR vehicle, Panther Rosenbauer, 12500 water,1500l foam, 250kg powder; 2009 – 3 units.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Not at this time.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not have a Fire Training Simulator.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 Nov-15 Apr
8.2 Average annual days of snow: 14 days (based on statistics of last 20 years)
8.3 Average snow depth: 5 cm
8.4 Maximum snow in 24 hours: 30 cm
8.5 Annual number of days of de-icing activities: 20 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 10

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 2 Plough sweepers ,,Jet Broom'', 2 sweepers ,,Schmidt'', 1 plough ,,Kraz'', 1 plough ,,K701'', 2 rotary snow ,,Zil'', 1 rotary snow ,,Ural'', 1 de icer spreader ,,Iveco'', 1 de icer spreader ,,Atego Giletta''.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway, Taxiways- A, B, Apron, then all other areas
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Depending on current weather situation, wind direction and velocity- removing snow from centerline to the runway edge with ploughs, removing snow from the runway with rotary snow. Cleaning runway with sweepers. Chemical treatment of the runway.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? It depends on the weather condition – 2-3 hours.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safeway KA HOT, Safeway SF/Clariant.
12.2 Comment on storage capabilities of the chemicals that you use: Safeway KA HOT 40t.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: N/A
12.4 Have you experienced any corrosion problems with de-icers? There are not any corrosion problems.
12.5 Have you employed any special means to economise on chemical use? Yes
12.6 Do you have any other comments on experience with chemicals? N/A
12.7 Do you use other chemicals or sand on operational areas? Yes, lye

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: VAISALA-RWY 09/27-1 sensor
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: We are satisfied.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes - DAF FMC - 1 unit, VOLVO SAFE AERO – 1 unit. We use 'Clariant' de-icing product, trade name-Safewing MP II 1951 airc. Producer - Clariant Produkte (Deutschland) GmbH. CM-Deutschland Brueningstr. 50, 65929 Frankfurt am Main.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Parking area is used.
14.3 Is glycol recovered? If so, please state methods: No

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS
15.2 Have you any comments on the reliability of friction indexes? We are satisfied.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No

VIENNA

Vienna International Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Vienna Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 11/29 3.500m x 45m + 7,5m shoulders TORA 3.500m; RWY 16/34 3.600m x 45m + 7,5m shoulders TORA 3.600m; Apron Total app. 1,000.000 m•, TWY app. 22.000m x 23m
2.2 Landing aids for each RWY (e.g. CAT II): RWY 11 CAT I, RWY 16 CAT IIIb, RWY 29 CAT IIIb, RWY 34 CAT I

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? No major changes – continuous improvement

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airportœs programme to control FOD in terms of:
a) Training: FOD prevention is part of airside regulations training (initial and recurrent), Flyers and Handouts for the prevention of FOD.
b) Inspection by airline, airport, and airplane handling agency personnel: FOD inspections are performed by airport operations on manoeuvring areas and by handling agents before aircraft entering the parking stand
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Continuous sweeping from 6 am to 3 am. 70 FOD Pins are installed
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Ramp Safety Committee
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): No

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Eye contact, Surface Movement Radar
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Cars on the maneuvering areas are equipped with transponders to become visible on the Advanced Surface Movement Guidance and Control System
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): A-SMGCS – ASTOS – AVIBIT
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Chains and signs
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Recurrent training of vehicle operators (maneuvering area). Short time works only under supervision of trained staff.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the „non-punitive" principles such as „no-penalty" reporting? Incidents and safety relevant matters can be reported non punitive (Safety Report)

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds:
6.1 Do your staff attend recognised bird control training courses? Internal Training
6.2 Are your bird control staff work-





ing on the airfield continuously, hourly, less than hourly? Continuously
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded distress calls, pyrotechnics.
6.4 Do you carry out a bird strike risk assessment? Part of SMS
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Several vehicles to fulfil ICAO CAT 9 requirements for both RWYs
7.2 Future developments – are there plans to purchase or dispose of any equipment? No
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes – it's used by all Austrian airports.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Oct. 15th to Mar. 31st.
8.2 Average annual days of snow: 19
8.3 Average snow depth: 62 cm average over the last 10 years
8.4 Maximum snow in 24 hours: Season 2011/2012 5cm
8.5 Annual number of days of deicing activities: 2011: 149

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? 256 airport employees in total app. 70 airport employees and 2 sub-contracted per shift

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Jetbroom Runway, Boschung, 10; Jetbroom BJB8000, Boschung, 6; Snowblower, Kahlbacher, 7; Snowplough, Mercedes Unimog, 8; Tractor with Snowplough, Steyr, 8; Liquid Deicer, Küpper Weisser, 20000l, 3; Multi Deicer, solid wet, Schmidt-Nido, 1; Small Multifunction Deicer with plough or brush, Boschung Pony, 6, Pfau/Schmidt, 3

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1. RWY"s & Apron, 2. TWY"s
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY: 10 JetbroomRunway, 3 Snowblower, 2 Unimog with plough – one run concept, TWY: RWY vehicles according to TWY width, APRON:6 Jetbroom BJB8000, several Snowplough"s and other available vehicles
11.3 After moderate snow, how quickly do you expect to achieve „black top" on the runway? Staff to be expected on the airport after 75min. "black top" within 30min.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved hold-over times etc: Vehicles acc. to 10.1.
12.2 Comment on storage capabilities of the chemicals that you use: 500000l liquid, 40000kg solid
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: application solid with 35% liquid deicer
12.4 Have you experienced any corrosion problems with de-icers? Yes
12.5 Have you employed any special means to economise on chemical use? Heightened use of solid de-icing chemicals combined with mechanical cleaning
12.6 Do you have any other comments on experience with chemicals? Deicing material must be environment friendly and is consequently less effective and very expensive.
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Findlay Irvine ICELERT
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Around 0°C questionable reliability

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 10 Safeaero 220 and 5 Vestergaard Elephant BETA
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Dedicated area
14.3 Is glycol recovered? If so, please state methods: No

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Skiddometer BV11
15.2 Have you any comments on the reliability of friction indexes? No

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: 8 Jetbroom
16.4 Do you have any winter services equipment that you would like to sell? No

WARSAW CHOPIN

LOTNISKO CHOPINA W WARSZAWIE — WARSAW CHOPIN AIRPORT

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Warsaw Chopin Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): Total apron area: 342 564 m2
2.2 Landing aids for each RWY (e.g. CAT II): RWY11 – ILS/DME CAT II; RWY15 – VOR/DME; RWY29 – VOR/DME; RWY33 – ILS/DME CAT II.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Dedicated Safety Management System Section has been established to improve implementation and development process of SMS. Implementation of dedicated SMS software is in progress – operational status is to be reached by the end of 2013. There are no new recommendations from CAA regarding SMS (new national regulations are to be implemented by 18.03.2013).

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All employees working at the apron and manoeuvring area are trained before obtaining permission to work. Training programme comprises few procedures necessary to be followed during airside activity. FOD prevention procedure is among them.
b) Inspection by airline, airport, and airplane handling agency personnel: Every person on an airside, working on, visiting or inspecting the airside is strictly obliged to collect, at any time, any noticed FOD from surface and put it into the nearest FOD container. Also, Follow Me personnel is obliged to check a stand for FOD or any left items before every taxiing of an airplane.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance Service makes periodical and on request mechanical sweeping of an airside concrete or grass surfaces. In case of a fuel leak, appropriate chemicals are to be used.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): There is no formal programme of coordination established. However, some procedures for removing debris from airport pavements are implemented – all activities in this area are controlled and supervised by the Airport Duty Officer.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): There are no special systems or software implemented for FOD control.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? In VMC primary method is visual monitoring done by ATC. Surface Movement Radar (SMR) is treated as advisory measure. Additionally Airport Duty Officer monitors TWR and GND frequency and dedicated frequency for communication between ATC and vehicle drivers.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? To improve safety on hot spot area taxiway M3 will be closed in 2014. It will be replaced by a, new rapid exit taxiway to be built outside of hot spot area.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): None.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: RWY AHEAD markings, continuously lighted stop-bar implemented in the most dangerous area (hot spot) – several times it was ignored by pilots.
5.5 What specific procedures are there for training and awareness among pilots, controllers,





mechanics, airport vehicle operators, and other people who work at the airport? “Manual on vehicular and personnel movement regulations at Warsaw Airport” describing rules for vehicular and pedestrian traffic – applies to all airport vehicle operators as well as mechanics, controllers and every person working at the movement area.
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? Reporting system established according to national regulations (reports from airport, ATC, airline and State Commission on Aircraft Accident Investigation. All runway related reports are subject to investigation by Runway Safety Team established at the aerodrome. Non-punitive principles are implemented by national regulations regarding aviation accident investigation.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: employment of falconer; agro-technological works – grass cutting to height which is not attractive to birds; cutting of trees at the airport; remove bird nests from the trees around the airport; acoustic bird dispersal system installed at each approach area and at runway crossing (10 units); use acoustic bird dispersal arrangement – ULTIMA V3 and PATROL TWO; use of pyrotechnic shotgun; development of map of presence of different kind of birds; development of map of migration routes of birds near airport; control on pigeon breeding around the airport – with assistance of City Guard and land owners.
6.1 Do your staff attend recognised bird control training courses? 2011 – Bird Management Conference and Workshop - London Luton.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously.
What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): acoustic bird dispersal system (Recorded distress calls) – 10 units – BG SUPER PRO AMP BirdControl; ULTIMA V3 – Scarecrow Bio-Acoustic System; PATROL TWO – 2 pieces; pyrotechnic shotgun – 1 piece – mod. 36 Combat; falconer – 6 falcons and 1 dog.
6.4 Do you carry out a bird strike risk assessment? Bird strike risk assessment is done once per year, the process is audited.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Presence of different kind of birds on or close to manoeuvring area is registered and analyzed during every-day patrols conducted by a specialist responsible for wildlife control and by the falconer.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? There is small population of hares and foxes. Falconer removes animals from the airport area.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Tiger, E-One, 6x6, 9,000 litres, 2007; Eagle, E-One, 4x4, 5,000 litres, 1999; Tiger, E-One, 6x6, 9,000 litres, 2007; Eagle, E-One, 6x6, 12,000 litres, 1999; Eagle, E-One, 6x6, 12,000 litres, 1999; Barracuda, Boughton, 6x6, 12,000 litres, 1997; Eagle, E-One, 6x6, 12,000 litres, 1999.
7.2 Future developments – are there plans to purchase or dispose of any equipment? 2 8x8 Rosenbauer vehicles to be introduced in December 2012.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Fire Training Simulator not present.
PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From 01 NOV to 15 APR
8.2 Average annual days of snow: 64 days
8.3 Average snow depth: 2cm
8.4 Maximum snow in 24 hours: 15cm
8.5 Annual number of days of de-icing activities: 77 days

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 16 – 22 airport-employed are available per shift.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): 19 sets of snow removal vehicles MB ACTROS 2041 truck tractor with a plough and Schorlig P17, Oyeraasen RS 400 and RS 200 runway sweepers; 5 Boschung BJB 8000 compact sweepers with sprinkler-spreaders, Schmidt CFB 5500 S runway sweeper supported by two Unimog tractors with MF 3,3 snow ploughs and sprinkler-spreaders; 6 sprinkler-spreaders including: Schmidt ASS 6000, Kupper Weisser STA 95, Dammann FEA 20036, Dammann-Boschung FEA 2024, 2 x Schmidt NIDO N90; 4 Snow Blowers including 2 x Bucher Rolba 3000, 1 x Kahlbacher KFS 160M-HY, 1 x Ural-Rotor; 2 x JCB loaders-excavators enable efficient load and unload of granulated chemicals.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: RWY 11/29 or RWY 15/33 depends on TWR and in the same time all Aprons 2. TWYs adjacent to current cleaning RWY, 3. Other TWYs.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow Plough + Snow Sweepers formations first snow removal, second de-icing liquids or granulate or mixed liquids and granulate.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? Depending on traffic and weather conditions.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safeway KA liquid based on potassium acetate and Safeway SF granulate based on formic acid which are imported materials, are used at Warsaw Airport.
12.2 Comment on storage capabilities of the chemicals that you use: Liquid de-icer is stored in 4 x 60, 90 and 48 litres tanks.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: No comments
12.4 Have you experienced any corrosion problems with de-icers? No
12.5 Have you employed any special means to economise on chemical use? No
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: ICE ALERT Boschung
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Good

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No, the airport does not provide aircraft anti/de-icing operations.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Yes we have dedicated de-icing positions, Apron 6 and Apron 10. 14.3 Is glycol recovered? If so, please state methods: No

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT VOLVO V70; ASFT Saab 9-5 SE; ASFT Saab 9000; Grip Tester MKIIC.
15.2 Have you any comments on the reliability of friction indexes? No

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? Different methods and patterns in the column of sweepers/snow blowers will still be tested to obtain more effective results.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, we plan to purchase new spinklers for Chopin Airport.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No
16.4 Do you have any winter services equipment that you would like to sell? No.

ZURICH

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Zurich Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 10/28: lengths 2500m, TORA 2500m, TODA 2560m. RWY 14/32: lengths 3300m, TORA 3300m, TODA 3360m. RWY 16/34: length 3700m, TORA 3700m, TODA 3760m. All RWY’s width 60m. Surface area data: RWY 10/28 150,000m2; RWY 14/32 198,000m2; RWY 16/34 222,000m2; TWY’s 550,000m2; Apron 900,000m2; Technical area 143,000m2.
2.2 Landing aids for each RWY (e.g. CAT II): All landing RWYs equipped with ILS.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Zurich Airport has received the Airport Certification by June 2006. Thus, it is the first certified Swiss airport. The Safety Management System consists of four pillars: Firstly, a Safety Policy (with corresponding targets and safety performance indicators); secondly, a Safety Management (including hazard & risk assessment, safety organisation with an airport safety committee, a ramp safety committee, a local runway safety team, a bird strike committee and snow committee); thirdly





the safety monitoring (including an occurrence reporting); and finally the continuous improvement (including audits and inspections).

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Employees working on the stands are alerted to the topic of FOD by special trainings and the distribution of information (e.g. flyers). The Ramp Safety Culture Team Zurich raises the issue on a regular basis.
b) Inspection by airline, airport, and airplane handling agency personnel:
Runways and Taxiways are checked on a regular basis by the Airport Authority. An FOD check on the stand is to be performed by the handling agent before the arrival of the aircraft.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc):
Stands: Two cleaning teams are on duty 7 days/week from 3.30 to 21.30 o'clock. During the remaining time an on-call service is established. The early shift cleans daily all airplane stand surfaces at least once. When necessary, additional special cleaning can be ordered by Apron Control, and/or the Airport Authority.
Apron and Taxi Areas: Same procedure and cleaning teams as for the stands; cleaning interval twice a week. Apron and Taxi Areas were swept with FOD Boss.
Runways: No regular cleaning concept. However cleaning is done when necessary and requested and after maintenance work, bird strike incidents, etc. Runways are inspected four times a day.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Beside the cleaning teams of the Airfield Maintenance, all airport partners are requested to pay attention to FOD and remove it. Specially marked FOD bins are stationed on various locations accordingly.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Momentarily no such software based reporting system exists. Certainly, Airfield Maintenance has a system in operation, which monitors the tour of the cleaning vehicles.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The primary method of monitoring vehicles and aircraft movements on ground is visual observation, partly assisted by cameras and A-SMGCS during Low Visibility. Additionally a "Runway Incursion Monitoring and Collision Avoiding System" (RIMCAS) is installed, which acts as a safety net and alerts the controller in case of a runway incursion.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Taxi routes are assigned in such a manner as to reduce the risk of runway incursions. All crossing taxiways / runway entrances have been marked with enhanced taxiway centerline markings and mandatory instruction markings according to ICAO Annex 14, AMDT10. A bypass taxiway around the main departure runway is currently being planned to reduce the number of runway crossings.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Zurich is operating an A-SMGCS with the integration of the Approach radar, two ASDE and a Multilateration-System. Additionally a "Runway Incursion Monitoring and Collision Avoiding System" (RIMCAS) is installed, which acts as a safety net and alerts the controller in case of a runway incursion.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: All Runway holding positions are marked according to ICAO Annex 14 (including enhanced taxiway centerline markings and mandatory instruction markings) and equipped with red stop bars and wig-wags. RWY-Stop bars are operated (except line-up positions) during the entire Airport operation time (also in good weather and daylight conditions).
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? The Local Runway Safety Team is organising awareness campaigns (such as movies and flyers) to address identified hazards and to promulgate incident investigation findings. Furthermore licensing requirements was introduced for all vehicle drivers on the airfield (including initial training, skill test and periodical refresher).
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? The Local Runway Safety Team has established a common runway incursion database. Furthermore, a "Runway Safety Report" every three years to monitor trends in runway incursion numbers and effectiveness of measures is published.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Pure grass management and no agriculture. Long grass management with cut stop by the end of September, such that the grass surfaces can regenerate to the necessary height of 15-20 cm. No fertilizations. Grass mowing in RWY Safety areas at night. At some critical parts outside the RWY safety areas the grass mowing is also carried out only at dawn and at night. The mice abatement is carried out with traps as well as a 4km mice fence with self service traps (fox). Additionally, annual close season for foxes.
6.1 Do your staff attend recognised bird control training courses? Yes. The co-workers of the Airport Authority, the environment caretakers and the hunter are trained by the bird strike supervisor. Special training in 2011 was performed by the German DAVVL bird strike experts for the co-workers of the Airport Authority. Annual refreshers exist. New employees of the Airport Authority attend a basic training.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes. Continuously at least every hour. Outside air traffic hours bird control staff is available on demand.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): For controlling accumulation of birds mainly pyrotechnic means (signal pistol type Heckler & Koch P2A1 with signal rockets) are used. Various others for hunting permitted firearms are used only by the licensed gamekeepers. Lasers have been introduced and used during trials.
6.4 Do you carry out a bird strike risk assessment? Two times a day the Airport Authority makes a bird control tour. Extended bird control tours with observation of what kind of birds are doing what in which area of the airport are made 1 to 2 times a week. According to a yearly plan, a full day observation is made once a month. The bird control process is part of the Safety Management System and therefore being audited at least once a year. Additional, daily bird scaring tours are carried out before the outbound of wide body aircrafts on RWY 16/34.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Bird feather identification is made in cooperation with DAVVL or the Swiss ornithologic station in Sempach (if necessary also DNA analysis are made). Also the gamekeepers have special knowledge to identify the birds.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes. We're collecting bird strike messages from the main carrier Swiss. This enables to identify a bird strike rate per 10'000 movement operated by Swiss. The total evaluation is reported annually to the FOCA.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Crash Fire Tender: Ziegler Z 8 MAN, 5 vehicles, 12,500 L water, 1,500 L extract, 8x8, 2005/2006; MANSK 14-1005 MAN Kronenburg, 8,000 L water, 1,500 L extract, 8x8, 1994.
Command vehicle: Volvo XC90, 4x4, 2006; Skoda Octavia, passenger vehicle, 4x2, 2007.
Fire engine: Scania Vogt, 2 vehicles , 5'500 L water , 1'000 L extract , 1'000 kg powder , 90 kg C02 , 6x6 , 2003 Scania P420 Rusterholz, 4x4, 2'680 L water, 2007.
Small one: Mercedes Vito 115CDI, extinguishing vehicle, for multi-storey car park, 400 L water, 12 L foam extinguisher, 4x2, 2010.
Others: Mercedes Brändle, pioneer vehicle, 6x6, 1998; Mercedes 1634AF Rusterholz, pioneer vehicle, 4x4, 1998; Auto Aerial Ladder, Mercedes Econic 1833, 4x2, 2009. Mercedes Contrac, passenger evakuation stairs, 4x4, 1993; MAN M90 Walde, respiratory protection vehicle, 4x2, 1996; Mercedes 412 D, oil protection vehicle, 4x4, 1999; Mercedes 416CDI, oil and water protection verhicle, 4x2, 2007; Mercedes Unimog Hänni, hose transport vehicle, 4x4, 1979. Mercedes 409 D, lighting vehicle, 4x4, 1987, 2 vehicles; Mercedes Unimog Hänni, carbonic acid vehicle, 4x4, 1981; Manitou Perkins, cross-country stacker, 4x4, 2002; Mercedes Sprinter, crew transporter, 4x2, 2002; Mercedes 316CDI, crew transporter, 4x2, 2012; VW T5, transport vehicle, 4x2, 2005; Mercedes 3346, truck with crane, 6x6, 2008; Scania R124, loading vehicle for container, 8x4, 2001; FIAT Doblo Cargo, transport vehicle, 4x2, 2005; Mercedes Vito 116CDI, First Responder vehicle, 4x2, 2012.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes. New Crash Fire Tender, 7 vehicles, 2013-2020.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Winter readiness is from 15 October through 12 April.
8.2 Average annual days of snow: Annual days of snow approx. 23 days.
8.3 Average snow depth: Average snow depth 14cm.
8.4 Maximum snow in 24 hours: 5cm, 20 Dec 2011.
8.5 Annual number of days of de-icing activities: De-icing activities during 27 days (only De-icing).

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Airport employees number 130 per shift.





10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow clearance airside (Flughafen Zürich AG owned equipment): compact jet sweeper, Boschung plough 6m, 9; compact jet sweeper, Boschung, plough 8.4m, 14; rotary snow, Øveraasen, TV 1520, 3; rotary snow, Rolba, R-10,000, 2; rotary snow / loader, Bucher, R-600, 1; loader / blower, Schmidt, Supra, 3; snow-blade* Ramphog 6m, 1, snow-blade* Øveraasen 6m, 1; snow-blade*, Ammann , 6m 1; plough** Peter / Zaugg 4m, 32; truck (for plough), Mercedes, 6.
*trax from contractors
**truck from contractors
De-icing vehicles: multi de-icer, Küpper-Weisser 40m, 4; multi de-icer, Küpper-Weisser 8m, 2; multi de-icer, Pony 4m, 2; multi de-icer, Tractor 4m, 1.
Snow-clearance landside: plough / gritter, Unimog, 1; plough / gritter, Mercedes, 1; plough / gritter, John Deere, 3; plough*, various, 2; plough / Holder, Zaugg 1.5m, 1; plough / Pony Zaugg 1.5m, 2.
*truck from contractor
Contractors airside snow deportations: deportation trucks, various, 13-30; wheel loader, various 3m3, 6; Rolltainer, various 40m3, 5.
11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Air- and landside have equal priorities. First priority airside: RWY 16/34, 3.7 km (incl. TWY's); RWY 10/28, 2.5 km (incl. TWY's); RWY 14/32, 3.3 km (incl. TWY's); Apron (docks' area snow clearance), all non-covered parking lots; Apron / apron-taxiways. Second priority airside: Service roads, Maintenance areas, General Aviation area.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Two formations with 7 trucks (mounted plough, blow-sweeper each), 2 trucks (mounted plough only), 1 rotary snow, 1 multi de-icer.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 45-60 minutes.
12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Aviform L50, ca. 1'290'000 litres.
12.2 Comment on storage capabilities of the chemicals that you use: Storage capacity 500'000 litres 24 hour additional supply guarantee.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: In recent years, no solids were used. It may not be disclosed.
12.4 Have you experienced any corrosion problems with de-icers? Some problems with corrosions at vehicles.
12.5 Have you employed any special means to economise on chemical use? Heated aircraft stands at the docks A and B.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? No.
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Boschung system 2000; 3 sensors per RWY (9 in total), 1 sensors in the landside areas.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Facilities will be extended at the airport-expansion.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: The system is a good aid for monitoring the weather impact in connection with winter services.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Both, dedicated de-icing positions (de-icing pad F and C) and on-stand de-icing.
14.3 Is glycol recovered? If so, please state methods: Yes, glycol is recovered. The material is collected in storage basins for wastewater treatment. On 20 hectares it is treated for biological degradation by micro-organisms of the soil. The high concentrated part is distilled and recycled; the rest as carbon denitrification goes to the Zurich waste water treatment or on a sludge stabilisation digesting tower.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? BV-11; 2 units.
15.2 Have you any comments on the reliability of friction indexes? No.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport's methods? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

ZVARTNOTS

ZVARTNOTS
"Armenia" International Airports C.J.S.C.

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Zvartnots Airport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas. (For example: total RWY length (or lengths), Take Off Run Available [TORA], RWY width, shoulder widths, total apron area, ramp area, other) RWY 09,TORA 3850m, TODA 4250, ASDA 3850m, LDA 3850m. RWY 27, TORA 3850m, TODA 4150m, ASDA 3850m, LDA 3850.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 09: CAT II. RWY 27. PAPI.
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes.
4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All airport and airline personnel and airport tenants should receive training in the identification and elimination of FOD, including the potential consequences of ignoring it.
b) Inspection by airline, airport, and airplane handling agency personnel: Airline personnel, when feasible, should join the airport staff in daily airside inspections. This practice helps increase familiarity with local airfield conditions, and promotes effective communication between the airport and airlines.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintaining control of FOD includes using several methods: Sweeping; Magnetic bars; Rumble strips; FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments.): No.
5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Visual monitoring from ramp control in corporation with ATC.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): No.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Yes.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? 6-month refreshing training for drivers (communication).
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the 'non-punitive' principles such as 'no-penalty' reporting? Yes.
6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Flight ornithological security assurance. Due exposure and liquidation of conditions contributing to bird concentration in the airport and nearby area. Flight ornithological maintenance is aimed at prevention of bird strike in airport area. Due and qualitative execution of prophylactic (prevention) works for scaring birds. Training of interested candidates for the improvement of their knowledge. Performance elaboration and fulfillment for flight ornithological security improvement in "Zvartnots" International Airport. Due to the above mentioned policy birds strike reduces for 20% each year.
6.1 Do your staff attend recognised bird control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Our bird control staff is working on the airfield continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird patrols in vehicles, Bioacoustics Super BirdX peller PRO, electronically generated noise, propane cannons - Zon Mark, pyrotechnics, shooting to scare, netting hangar rafters, ponds.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities? (to manage success in dealing with the problem, and to use in defence in case of lawsuits): Yes.





6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Type: Crash Fire Rescue. Model: Striker-3000. Chassis: Oshkosh. Axles: 6x6 (Oshkosh axles). Capacity: Water – 11,350 litres, Foam (AFFF) – 1,590 litres, Dry chemical - 225 kg. Year of Manufacture: 2007.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? The airport is planning to construct a training centre, which will include the simulator.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From December to February.
8.2 Average annual days of snow: 10-15
8.3 Average snow depth: 5cm
8.4 Maximum snow in 24 hours: 15cm
8.5 Annual number of days of de-icing activities: 50 day

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 15

10. WINTER EQUIPMENT INVENTORY

Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (For example: compact jet sweeper, Schmidt, CJS 720, 4 units): Snow sweeper Scania Vammas, 3 pieces; Snow plough DE-224, 1 piece; Snow brush KAMAZ 4326 (N73), 1 piece; Snow plough PM-130, 11 pieces; Snow collector D-902, 1 piece; Snow collector DE-226, 1 piece; Snow plough and liquid chemical reagent machine KAMAZ PM-116, 1 piece; ZIL-4502 (N70) liquid chemical reagent machine, 1 piece; ZIL-130 (N95) solid chemical reagent machine, 1 piece; Grader (N72), 1 piece; Loader (N107), 1 piece; Dump trucks, 3 pieces; Universal mechanism "Bobcat", 1 piece (mini loader).

11. PROCEDURES AND METHODS

Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Runway, Taxiways, Main taxiway, Aprons, Holding bays, Other areas by necessity.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow-cleaning from the RWY is done by patrol method by Scania-Vammas, PM-130 snow-cleaning machine. Snow cleaning is mainly done from RW axis-line to the edges, then the collected snow of the edges is cleared by the rotors. Cleaning process can be changed getting out of the wind direction changes.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? RW snow-cleaning must be done immediately when the snow begins, between take off /landing intervals.

12. EXPERIENCE WITH CHEMICALS

State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: The chemical reagents used last season: Solid: ANS (nearly 13 ton) and Clearway SF3 (nearly 23 ton); Liquid: Clearway F1 (nearly 17.5 ton), Kilfrost (nearly 7.5 ton), Vzlyot (nearly 5ton). The mentioned chemical reagents can be used till -400C temperature, except granular ANS chemical reagent (-120C).
12.2 Comment on storage capabilities of the chemicals which you use: Solid: nearly 70 ton. Liquid: nearly 70 ton.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: "Zvartnots" airport doesn't have such an experience.
12.4 Have you experienced any corrosion problems with de-icers? "Zvartnots" airport doesn't have such problems.
12.5 Have you employed any special means to economise on chemical use? Chemical reagents are used according to norms prescribed quantity.
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Have not.
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? It isn't expedient.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Nil.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Skiddometer BV11
15.2 Have you any comments on the reliability of friction indexes? Nil.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Yes.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: No.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: No.
16.4 Do you have any winter services equipment which you would like to sell? No.



CATEGORY: FRICTION TESTING

DOUGLAS MU-METER MK6 CONTINUOUS FRICTION MEASURING EQUIPMENT

Runway friction measurement is an integral part of airside safety. With all airports that operate within ICAO legally required to inspect their runways, the repeatability, consistency and reliability of this data recording is essential, and the Douglas Mu-Meter ticks all these boxes. Used by both commercial and military airports worldwide, the Mu-Meter Mk6 offers a comprehensive, fully portable means of compiling runway friction reports and contaminant drag measurement data without the need of specialist towing vehicles. Runway rubber deposits, wet and dry surfaces and freezing conditions are all within the Mu-Meter's portfolio of measurement. The small, three-wheeled unit is capable of collecting data while being towed behind a vehicle as small as a family hatchback. It utilises sophisticated electronic measurement and sensing, which is operated via a touch-screen laptop from inside the tow vehicle. Data can be easily analysed and sent to the airport's operations team, giving them detailed runway surface conditions. These measurements can then be archived to build a comprehensive picture of the airport runway surface conditions through the seasons. The Mu-Meter has the option of recording not only to the ICAO standard, but also to the prescribed formats for the CAA and FAA, and is offered in two different configurations, either runway or highway measurement.



Used by both commercial and military airports worldwide, the Mu-Meter Mk6 offers a comprehensive, fully portable means of compiling runway friction reports and contaminant drag measurement data without the need of specialist towing vehicles.

Since its development in the early 1960s, the Mu-Meter has over 1,000 units sold worldwide, and recent technological advances, such as wireless connectivity, have seen the world's best-selling CFME system go from strength-to-strength.

CATEGORY: FOREIGN OBJECT DAMAGE PREVENTION

FOD WALKS ARE NO LONGER ENOUGH!

Quiet, pervasive, and deadly – runway Foreign Object Debris (FOD) is one of today's highest risks to safety for both airports and airlines.

Based on data from a major European airport, an airport with 200,000 aircraft movements a year will have an average of five monthly hazardous FOD events. According to 'Runway Safety Report' by Iain McCreary and Insight SRI, 80% of FOD is heavier than 10 grams and larger than 13cm (5") in length. Despite this, visual runway inspections find no more than 3%-4% of runway FOD. Factor in ground-level bird strikes (over 40% of all strikes occur at ground level according to a USDA and FAA report) and other wildlife dangers, and it is clear that runways are dangerously exposed.



FODetect, Xsight Systems advanced runway management solution, markedly lowers the threat of runway FOD damage, has a major role in bird strike prevention & wildlife management and provides additional surveillance applications as well.

In addition to the safety problem, FOD damage costs airports and airlines billions of dollars each year. The direct costs of FOD are significant and known, while indirect costs include flight and passenger delays, runway capacity impairment, aircraft downtime, increased insurance premiums, incident investigation, unscheduled maintenance, cost of replacing equipment, reputational damage and other expenses.

FODetect, Xsight Systems advanced runway management solution, markedly lowers the threat of runway FOD damage, has a major role in bird strike prevention & wildlife management and provides additional surveillance applications as well.

Chosen by leading airports worldwide, and fully compliant with FAA regulation, FODetect is collocated with existing runway edge lighting and delivers a day/night, inclement weather, and ground-up perspective on the entire runway. Scanning between each aircraft movement, FODetect not only markedly enhances safety, but also increases operational efficiency and runway capacity.



Our customers requested more wet testing capacity, optional four wheel drive, and more vehicle brand selection!

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An industry leading standard 300 gallon (1200 ltr) or 44,000+ feet (13,400 m) of wet test capacity. Windows software, optional four-wheel drive and GPS. Available in Chevrolet, Dodge, Ford or Toyota full sized Pickups with extended or crew cab formats.

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CATEGORY: WINTER EQUIPMENT

BOSCHUNG'S DIVERSE MACHINERY FOR WINTER MAINTENANCE



Boschung has developed mechanical snow sweepers, blowers, spreaders and de-icers for every possible airport need, and also specialises in ice early warning systems and automatic thawing agent spray systems.

In May 1947 Marcel Boschung Senior laid the foundation of the company bearing his name, which in the course of the last 65 years has become one of the leading manufacturers of machinery and equipment used in the field of cleaning and maintaining of airports, roads and municipalities, with branch companies in Germany, France, Austria, China and USA.

A network of agents and partners operating worldwide is the guarantee of a successful future. With its 350 employees, the Boschung Group manufactures a diversity of equipment for maintenance activities. Starting with the special, unique and extremely economical all-year sweeper/blower machine for airport areas – the Jetbroom, furthermore Spreaders and De-Icers in every possible execution and combination, Snow blower/cutter B4 + B6, multi-purpose carrier Pony, compact and mounted Sweepers in all sizes and many more. With the establishment of Boschung Mecatronic Ltd. – producer of electronic and electro-mechanical winter equipment – in 1978, activities of the Boschung Group have been extended. This company has specialised in ice early warning systems and automatic thawing agent spray systems as well as the BORRMA-web System. Under the trade name SCM (Surface Condition Management) the Boschung Group supplies the entire equipment for the maintenance of working surfaces – from one single source.

INNSBRUCK AIRPORT TAKES DELIVERY OF ITS FIRST ØVERAASEN RSC 400



As well as a high working speed and powerful air blast, the Øveraasen RSC 400 wide broom system can clean a width of 5.5 metres.

Øveraasen's intelligent winter maintenance equipment is designed for use on runways and narrow apron areas, and offers the highest degree of maneuverability and driving performance. In November 2012, Austria's Innsbruck Airport began operating its first Øveraasen RSC 400 runway snow sweeper. The machine is a compact unit with a working width of just 5.5 metres. It is built as small as its mechanisms will allow, ensuring a minimal turning radius for ease of mobility, high speed and accurate use in challenging environments.

In addition to the standard air blowing system, the specialised RSC 400 has been built with a front blowing unit. Air nozzles in front of the brush catch snow and blow it directly out to the left or right side, distinguishing the RSC 400 as a unit with revolutionary cleaning power.

During 2012, Øveraasen has once again seen large growth in its sales of both runway sweepers and snow blowers, and has firmly secured its position as a major competitor in the sweeper and snow blower industry.

CATEGORY: BIRD AND WILDLIFE CONTROL

THE ULTIMA REPORTING SOFTWARE

Scarecrow, a known leader in airside bird dispersal, offers some unique reporting tools to capture data with Ultima.

Ultima is a highly effective bird dispersal system and data analysis tool. Using a rugged tablet touch-screen PC, a GPS receiver and data collection software, it creates a real-time record of dispersal management. The system recreates an audited trail featuring, for example, date, species, flock size and dispersal direction.

As well as dealing with and recording bird and wildlife activity, the Ultima is known for its Ultima Reporting Software, and the additional Runway Inspection module.

These have been designed to produce reports and give an overview on a number of airside operational functions such as runway incursions, foreign object damage, general runway inspections, the level of observed wildlife presence, firearm management and more. The outcome of the analysis of these reports can lead to improved risk management. The software can be delivered to existing systems, so there is minimal disruption to management programmes.

With growing concern regarding air safety, the Ultima is an ideal tool to keep track of airside management needs, ultimately reducing cost and increasing efficiency by effective reporting solutions.



Ultima is a highly effective bird dispersal system and data analysis tool. Using a rugged tablet touch-screen PC, a GPS receiver and data collection software, it creates a real-time record of dispersal management.

CATEGORY: DE-ICING

KEMIRA'S WATER-FRIENDLY DE-ICERS

Kemira is improving airside and runway safety at airports worldwide with its range of chemical innovations for effective ice and snow melting. The company specialises in the development of both liquid and solid de-icing solutions, which are produced in accordance with increasingly stringent environmental demands. A predictable take-off and landing must be guaranteed even in case of black ice and snowfall, and Kemira's Clearway range of airport de-icers promises to ensure safe airport operations by being efficient, fast, and unfailing.

The Clearway range – widely acknowledged as the leader in the airport de-icer market – has been developed to include both acetate and formate based liquids, along with a complimentary solid product line.

Products are dedicated to clearing and preventing the bonding of ice on runways, taxiways and aprons and improving safety and traffic flows at airports through anti-icing – preventing the formation of an ice sheet – and de-icing – an operation intended to break the bindings of already bonded snow and ice.

Clearway airport de-icers are classified WGK1 on the German Water Hazard scale, both for their excellent biodegradability and because of their low aquatic toxicity, meaning that they are not generally water endangering.

kemira

PROVIRON'S DE-ICING TECHNOLOGY

Snow and ice control at Proviron is an art combined with science. Over the last decade, Proviron Industries N.V. has established itself in the market as a reliable supplier of environmentally benign formate and acetate-based airport runway and highway de-icers.

All of its products are considered safe for the environment, exhibit low toxicity to vegetation and aquatic life, have low corrosion rates and work longer than common de-icers. Proviron is constantly working on the development of even more ecologically driven ways of keeping roads and runways free from ice or snow.

Its team of experts is happy to assist you with inquiries and upon request, come and visit you for a more detailed presentation of the company and its de-icing products.

Proviron's extensive product range includes: Provifrost KA ECO Liquid Potassium Acetate; Provifrost KF ECO Liquid Potassium Formate; Cryotech E-36 Liquid Potassium Acetate – all AMS1435 approved; Cryotech NAAC solid sodium acetate – AMS1431 approved; Cryotech CMA solid calcium magnesium; and Cryotech CMA40 solid blend of 40% CMA and 60% rock salt.

PROVIRON

Kilfrost

KILFROST PREPARES FOR SEVERE WINTER CONDITIONS

Kilfrost, a global leader in de/anti-icing products for aviation, predicts an extremely harsh winter for Europe this year. The ice protection fluids developer monitors long-range weather forecasts, and is expecting circumstances this season to equal the conditions of winter two years ago (2010/11), which was the second coldest in the UK since 1985/86. Its analysis of upcoming weather trends is crucial for ensuring supplies of its safety-critical fluids are in place across dozens of international airports. Kilfrost's Chief Executive, Gary Lydiate, said correct interpretation of weather trends is crucial for maintaining supplies to its clients across Europe and around the world.

Lydiate said: "The telltale signs started in June and we've been responding to those pointers ever since by ensuring that our customers are fully stocked with de-icing and anti-icing products ahead of the very cold weather taking hold." Kilfrost has seven depots across Europe, each containing two million litres of product for aviation use. However, as a typical short haul aircraft can require up to 500 litres, these stocks can be depleted extremely quickly in severe weather. The company is upping production in anticipation of increased demand in Eastern Europe where cold weather has already taken hold.

During the 09/10 winter, the most severe since the late 1970s, production at Kilfrost's facilities peaked at 22 million litres a month.











Sean Carney, Head of Design, Philips, delivered an enlightening keynote address entitled 'Putting the consumer first – Understanding the needs of the passenger, and the role of technology in meeting them'.

AIRPORTS 2020

AIRPORT EXCHANGE 2012
AMSTERDAM, 26-28 NOVEMBER

Schiphol Group hosted last year's ACI Airport Exchange in November. The event was, once again, held in collaboration between ACI EUROPE and ACI Asia-Pacific. Bringing together delegates from Europe and Asia, the event attracted an attendance of more than 1,500.

Jos Nijhuis, CEO, Schiphol Group, commented: "Given our ambition to be and remain Europe's Preferred Airport, it is essential that we look to the future and respond to the latest market trends and developments. Airport Exchange is an excellent catalyst, generating new inspiration through the exchange of knowledge and experience. Amsterdam Airport Schiphol aims to be a frontrunner in modernisation and sustainable innovation in this industry."

Last year's agenda saw four conferences running concurrently – Security Summit, Airport Operations Conference, Airport Development Conference, and new this year, Future Travel Experience Europe. Each was addressed by a broad range of high-level speakers, with representatives from key industry stakeholders, including airport operators, airlines, air navigation service providers, regulators and government agencies.

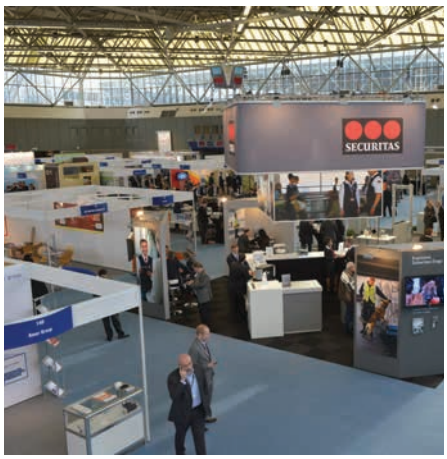
New at last year's Airport Exchange were the Schiphol Interactive Forums, led by Schiphol staff and the airport's partner network, which were designed to give delegates an insight into the Schiphol approach. The three Interactive Forums focused on Baggage, Airport Planning, and Sustainability and Innovation.

Crucially, Airport Exchange 2012 also provided a key networking platform, with Schiphol Group hosting a spectacular Welcome Reception at the Amsterdam Arena, and a Gala Dinner at the Stedelijk Museum Amsterdam.

The conference programme was complemented by the largest ever exhibition at ACI Airport Exchange, in which many of the industry's leading suppliers showcased the latest innovations in equipment, technology and services. Meanwhile, the conference stage on the exhibition floor saw leading suppliers outline their visions of the airport of 2020, covering four key areas: Development and Environment, IT & Systems, Security, and Baggage Advancements.



Tim Hardy, Airside Director, London Heathrow Airport, addressed the Airport Operations Conference. He participated in a session entitled: 'How can Europe achieve a truly efficient system for capacity by 2020, and how should airports be integrated into the future aviation network?'







Pieter Elbers, Managing Director & COO, KLM, delivered an enlightening keynote address to the Future Travel Experience Conference, focusing on airports, airlines and customers expectations, towards 2020. He explained that the relationship between airports, airlines and passengers is constantly and structurally changing.





The ACI Airport Exchange exhibition was officially opened by: Patti Chau, Regional Director, ACI Asia-Pacific; Declan Collier, CEO, London City Airport and President, ACI EUROPE; Jos Nijhuis, CEO, Schiphol Group; and Olivier Jankovec, Director General, ACI EUROPE.

Marjeta Jager, Director for Policy Coordination and Security, DG MOVE, European Commission, delivered a keynote address in the Security Summit. She focused on the long-term aviation security models being studied by the EU to address existing and emerging terrorist threats.





Bertrand Piccard, Founder and Chairman, Solar Impulse, delivered an inspirational keynote address in the Airport Development Conference, focusing on the world's first intercontinental flight in a solar-powered plane.



ACI Airport Exchange 2013 takes place in Doha. Pictured at the official handover are: Jos Nijhuis, CEO, Schiphol Group, and Patrick Muller, Executive Vice President, Doha International Airport Qatar.

ACI AIRPORT EXCHANGE 2013, DOHA, QATAR

ACI Airport Exchange 2013 will, once again, be held in collaboration between ACI EUROPE and ACI Asia-Pacific. The event returns to the Asia-Pacific region, and will be hosted by Doha International Airport at the Qatar National Convention Centre on 18-20 November 2013.



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Cryotech NAAC	Solid Sodium Acetate
Provifrost KF ECO	Liquid Potassium Formate
Provifrost KA ECO	Liquid Potassium Acetate
Cryotech CMA	Solid Calcium Magnesium Acetate
Cryotech CMA40	Solid Blend of 40% CMA and 60% rock salt

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