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AIRPORTS COUNCIL INTERNATIONAL

AIRSIDE SAFETY SURVEY

2014

A DEFINITIVE SURVEY OF TECHNIQUES, EQUIPMENT INVENTORIES AND OPINION REGARDING ALL ASPECTS OF AIRFIELD OPERATIONS BY EUROPE'S AIRPORTS



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INTRODUCTION
THE AIRSIDE SAFETY SURVEY 2014

From regional gateways such as Aberdeen and Bremen to international hubs like Vienna and Zurich, the experiences and practices of airports from all over the continent are documented in this year's ACI EUROPE Airside Safety Survey – the essential reference guide to the airside operations and safety measures of ACI EUROPE member airports. The survey provides an all-encompassing picture of the procedures integral to airport operations, including winter services, friction testing, runway incursion prevention, crash fire rescue procedures, wildlife control, and FOD detection. Submissions are published unedited, for a varied and colourful range of responses with the highest level of accuracy, and, as well as building a comprehensive picture of industry trends in the use of equipment and airside techniques, the annual Airside Safety Survey shines a light on the multitude of conditions and diverse challenges present on Europe's airfields.

The array of contrasting wildlife dispersal requirements and techniques recorded demonstrate aptly the different, distinct approaches that Europe's airports employ to tackle everyday incidents. While Prague Ruzyne Airport's main method of bird control is a team of falconers with specially trained falcons, hawks and eagles to in-





timidate and hunt birds in the movement area, other airports opt for an ordnance-based system of control. Bremen Airport for example uses 48 stationary shotguns and auxiliary pyrotechnics, and Split Airport utilises a rocket gun and the Bird-X Mega Blaster Pro. Athens International Airport meanwhile has implemented audio-harassment measures to deter the presence of animals, including distress calls recorded in cooperation with university specialists, and also manipulates infrastructure. Food, water, and roosting places are minimised either by applying the proper designs at the initial master plan of the airport, with the application of various long-term measures if new attractants are detected. Habitat management – 'long grass regimes' in particular – is key to the bird dispersal strategy of most airports. Aberdeen said of its experiences that "maintaining long grass is a practical means of deterring many species of birds, which are attracted to short grass to rest or feed. By allowing the grass to grow to a height of 200-250mm (8-10 inches) resting and feeding birds are denied good visibility, making them feel less secure and more vulnerable to predators".

WINTER SERVICES

The Airside Safety Survey also explores winter preparations, illuminating the variance between the requirements of airports of different sizes and in different locations at times of adverse weather. Split Airport experiences between one and five days of snow a year, while Katowice International Airport must prepare for around 70 on average. Similarly, Exeter International Airport expects a maximum 17mm snowfall in 24 hours during the winter months, but Lyon–Saint Exupéry Airport anticipates up to 40cm.

Where de-icing is concerned, though Barcelona-El Prat may experience one day of activity a year and Vienna International's de-icing operations may last for 131 days, common between most of Europe's airports is an emphasis on economical use of de-icer in the interest of environmental efficiency. Hamburg Airport employs a multi-vehicle technique, which accentuates precision over speed for minimum wastage, while chemical treatment on Ostrava-Mošnov's airfield responds to the actual weather forecast, to curtail excessive use. Furthermore, the installation of a GPS-based Surface Management System at Frankfurt Airport documents all activities, and enables live operational control over vehicle movements and chemical application. "We are also restricted to 25gr/sqm by our Environmental Authority. We 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."

An evident theme amongst the airports is the continued crusade for ever more proficient and productive airside operations. The survey revealed that a significant proportion of airports have made changes to their Safety Management Systems following a recent audit of risks and hazards. Brussels Airport has implemented a wave of updates to its training curriculum for vehicle drivers following its three-yearly recurrent Safety Audit programme, as well as introducing a formalised and standardised reporting of lessons learnt out of incidents, and the establishment of an analysis of tool management practices looking at avoidance of FOD on runways. Bremen meanwhile is installing Runway Guard Lights and Wind Direction Indicators at each end of RWY 09/27 as a result of a risk assessment with local authorities, to become operational in January 2014.

Though many consider their existing operations model to be the most efficient, others are implementing changes in their methods on varying scales, particularly with regards to winter services and general airside safety. Frankfurt, for example, said that it is "continuously working on reducing clearing and de-icing times by improving and setting standard driving routes used in the manoeuvring area and grouping vehicles in convoys". Graz Airport plans to reduce the time taken to clear the runway of snow by acquiring Airplast sweepers with larger facilities and London Gatwick is putting its A-CDM Implementation Programme into effect, and while Lennart Meri Tallinn upgrades its procedures every year. The survey also identified that more than half of participating airports intend to purchase new equipment. In the interest of expanding the scope of its safety measures, Geneva International has decided to buy four Boschung Jetbroom sweeper blowers with snow blades and one extra rotary snowplough, as well as two GPSs to guide the snow plough during the cleaning of the runway and runway edge lights. Budapest Ferenc Liszt International Airport meanwhile will tender and purchase a new CFME (Friction Measuring Equipment) with self-watering system in 2014, and as part of its Midterm Plan, two new runway sweepers will be purchased – the finalisation of the technical parameters is ongoing.





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THE AIRSIDE SAFETY SURVEY 2014

ABERDEEN

Aberdeen International Airport

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): Winter: 0610-2230. † 2230-0610. Summer: 0510-2130. † 2130-0510. 2 Customs and Immigration: Winter: Immigration 0600-2359. (‡ 2359-0600). Customs 0600-2300 (‡2300-0600). Summer: Immigration 0500-2259. (‡ 2259-0500). Customs 0500-2200 (‡ 2200-0500). Aerodrome is PPR (during 2230-0610 Winter and 2130-0510 Summer periods): delayed fixed-wing aircraft scheduled to operate 0610-2230 (Winter) and 0510-2130 (Summer) must request extended opening by 2100 (Winter) 2000 (Summer). All other fixed-wing traffic must request extended opening with at least 24 hours notice. Fixed-wing aircraft operating between 2300-0600 (Winter) 2200-0500 (Summer) must be Quota Category 4 or below as defined in the Department for Transport, Noise Restrictions Notice for London Airports published bi-annually as a Supplement. ‡ Customs/Immigration: Prior arrangement required before 2100 (Winter), 2000 (Summer) for scheduled delayed flights (international flights and domestic flights carrying interlined international passengers and their effects). Non-scheduled flights require prior arrangement with a minimum of 24 hours notice. Outside of operational hours AVTUR JET A-1 is available only during emergency situations. Special requests may be accommodated with over 24 hours notice. RWY: 16. True Bearing: 158.17 degrees. Dimensions of RWY: 1953x46m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt, grooved. PCN 56/F/B/X/T. RWY: 34. True Bearing: 338.18 degrees. Dimensions of RWY: 1953x46m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt, grooved. PCN 56/F/B/X/T. RWY: 36. True Bearing: 359.00 degrees. Dimensions of RWY: 260x23m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt. RWY: 05. True Bearing: 046.00 degrees. Dimensions of RWY: 476x46m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt. RWY: 23. True Bearing: 226.00 degrees. Dimensions of RWY: 476x46m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt. RWY: 14. True Bearing: 139.00 degrees. Dimensions of RWY: 581x36m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt. RWY: 32. True Bearing: 319.00 degrees. Dimensions of RWY: 581x36m. Surface of RWY/SWY/strength (PCN): RWY surface: Asphalt.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 16/34: CAT 1 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? No.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

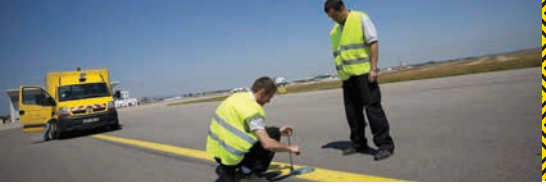
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD is part of Basic Airside Safety training that all Airside personnel must complete.
b) Inspection by airline, airport, and airplane handling agency personnel: 24/7 patrols by Airside Ops staff. FOD check by ground handler prior to aircraft docking on stand.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance – Beam sweeper and FOD Boss.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination of multiple agencies using airport: FOD is standing agenda on various safety forums.
4.2 General: Are there any special systems or software solutions you employ for FOD control? 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, including H24 stop-bars.
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. 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. Near Miss cards, 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: AIA 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, which 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 200-250mm (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. AIA's Bird Hazard risk assessment carried out by Birdstrike Management Ltd (formerly FERA) is designed to evaluate the current risk with existing bird control measures in place at Aberdeen Airport (i.e. the residual risk). For those species where the residual risk is assessed as Level 1 no further action is required 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 AIA's commitment to continuous improvement through Safety Management Systems, where possible AIA 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.
6.1 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 bird patrol.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Scarecrow Digiscare and lethal control – shotgun and rifle.
6.4 Do you carry out a bird strike risk assessment? Yes – done by Birdstrike Management. AIA's Bird Hazard risk assessment carried out by Bird Strike Management Ltd is designed to evaluate the current risk with existing bird control measures in place at Aberdeen Airport (i.e. the residual risk). As part of AIA'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. Central to risk identification is the need for staff to maintain a comprehensive electronic bird control 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/pistol has been handed over 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 (e.g. 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 birdstrike which 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 unserviceabilities; 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? Contracted to NBC Contractor for wildlife culls as and when required – rabbits, foxes, birds 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: Hose layer/equipment carrier; MAN; 4X4; 2006; 2 units. Major foam tenders; Carmichael Cobra 1; 6X6; 10,500l water, 1,700l foam, 50kg BCF, 100kg dry powder; 1993, 1994; 2 units. Carmichael Cobra 2; major foam tenders; 6X6; 11,000l water; 1,700l foam; 50kg BCF; 50kg dry powder; 2000, 2009; 2 units. Rosenbauer Panther; major foam tender; 6X6; (11,400l water, 170l foam, 250kg dry powder; 2012; 1 unit. Mitsubishi Shogan; command and control vehicles; 4X4; 2006; 1 unit.
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 (737 Aircraft Type, S61 Helicopter Type both commensurate with A/C that use airfield). Simulators are available for other airports use but no current customers at this time.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? October until March.
8.2 Average annual days of snow: 30 days.
8.3 Average snow depth: 6mm.
8.4 Maximum snow in 24 hours: 600mm.
8.5 Annual number of days of de-icing activities: 60.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 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: 4x Zetros, 4x TJS Sweepers, Schorling P17A x5, Schorling P21 x2. Holmes brushes x2, Mikro Brush/Plough x1, Kubota 1m plough/de-icer x2. De-icers-BE 24m x1, BE 15m x1. Gritter – Epoke x2.

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, leased areas.
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: Safegrip used, 4-hour hold over time. Konsin used for very low temperatures. Hold over time up to 24 hours.
12.2 Comment on storage capabilities of the chemicals that you use: 4 x 50,000 litre tanks. Smaller tanks used on Apron areas.
12.4 Have you experienced any corrosion problems with de-icers? Yes. Damage to previous de-icers.
12.5 Have you employed any special means to economise on chemical use? GPS installed in all de-icing vehicles to ensure nothing is sprayed onto grass areas or re-applied to treated areas.
12.7 Do you use other chemicals or sand on operational areas? Grit used on passenger walkways as per CAP 168 requirements.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Ice Alert system. Met Office Forecasts and software tools.
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: Aircraft de-icing handled by Ground Handling companies.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-ice on 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? Mu-meter Mk6, however not used on winter operations as per CAP 683.
15.2 Have you any comments on the reliability of friction indexes? As per CAA requirements, unreliable during winter ops unless compact with snow or ice.

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. Major investment made in last three years.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Waiting on trial of multi-hog snow clearing vehicle.
16.4 Do you have any winter services equipment that you would like to sell? No.

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: 2,014x60m; width full strength: 45m; LDA: 2,014m. Runway 22: TORA: 2,014x60m; width full strength: 45m; LDA: 2,014m. Runway 06: TORA: 3,500x60m; width full strength: 45m; LDA: 3,250m. Runway 24: TORA: 3,500x60m; Width full strength: 45m; LDA: 3,500m. Runway 09: TORA: 3,453x60m; width full strength: 45m; LDA:






3,453m. Runway 27: TORA: 3,453x60m; width full strength: 45m; LDA: 3,453m. Runway 18C: TORA: 3,300x60m; width full strength: 45m; LDA: 3,300m. Runway 36C: TORA: 3,300x60m; width full strength: 45m; LDA: 2,850m. Runway 18L: TORA: 3,300x60m; width full strength: 45m; LDA: 2,850m. Runway 36R: TORA: 3,400x60m; width full strength: 45m; LDA: 2,850m. Runway 18R: width full strength: 60m; LDA: 3,530m. Runway 36R: TORA: 3,800x75m; width full strength: 60m. Taxiways: Total length: 49km, from which 43km is 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):
Runway 22: CAT I/B/1, PAPI; Runway 06: CAT III/E/4, PAPI; Runway 24: PAPI; Runway 27: CAT III/E/4, PAPI; Runway 18C: CAT III/E/4, PAPI; Runway 36C: CAT III/E/4, PAPI; Runway 36R: CAT III/E/4, PAPI; Runway 18R: CAT III/E/4, 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, we continuously improve safety at the airport in our processes. Of course, this means sometimes to reappraise some parts (procedures) 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 about FOD are described in our Handbook Safety and Security. Every employee is tested upon his/her knowledge of this handbook before he is allowed to work on airside. Authority personnel are trained in recognising FOD and removal of dangerous objects and dirt on taxiways and runways.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport Authority Officers see to it that employees on roads and ramps act according to the regulations about FOD. Before the docking of an airplane the ramp is inspected by the handler. Before ATC is going to actively 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 ULDs which can form danger for FOD. Pack up activities of freight must be done within the perimeter of the freight service to prevent packing material flying around and thus forming 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 planning to combine efforts 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 take place. These inspections lead to trend reports, where necessary action is taken, for instance the Clean Schiphol campaign. 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 at and following the developments around FOD-radar. At the moment we are in the middle of completing a tailor-made system that can be used to register FOD and help in the prevention of FOD. This system will help with the overall quality.

5. RUNWAY INCURSION PREVENTION

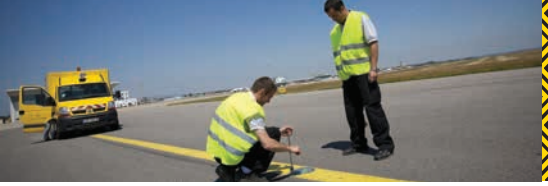
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? By sight, radio communication and radar/MLAT (every vehicle in the manoeuvring area has an ADS-B transponder).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? 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 implementing special switchable signs for the co-ordination of tow-traffic in a later stadium.
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 making 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 one 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 organisations 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 Organisation and are 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 lapwings).
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, shotguns. A pilot has recently been done with the use of radar detection. The outcomes of this pilot are being evaluated at the moment.
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 bowtie to point out what barriers are in place and who is responsible for what. With this bowtie we are able to address certain problem areas and put defences 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)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Wild hare; 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: 7x E-one Titan HPR; 8X8; 2002-2004. 2x E-one Titan HPR; 8X8 with Boom; 2002-2004. 2x Mercedes Atego; 2007/2008. Titan HPR; 8X8; 12,150l; ARFF Vehicle Specifications. Performance Parameters for TITAN® HPR 8X8 European Style: Water capacity: 12,150l (3,210 gallons); foam capacity: 750l (198 gallons); estimated dry shipping weight: 28,549kg (62,940lb); estimated in-service weight: 41,413kg (91,300lb); gross vehicle weight rating: front: 23,586kg (52,000lb), rear: 23,586kg (52,000lb); engine: make: Detroit Diesel 12V MTU, model: Model Series 2000 engine, 750 kW (1,005 BHP) 2100rpm, size: 2,389l (1458 cubic inch), bore: 130mm (5.12"), stroke: 150mm (5.91"), torque: 4,203N/m (3100lb/ft) 1,350rpm; transmission/transfer case: make: Allison, model: M-6610A, gear ratio: 4.00:1 – first, 2.68:1 – second, 2.01:1 – third, 1.35:1 – fourth, 1.00:1 – fifth, 0.67:1 – sixth, 3.456:1 – reverse; differential: 30/70 biasing differential; torque converter: Allison; power divider: Cushman 385 w/PTO, style: hydraulic, multiple disc wet clutch, ratio to pump: 0.6:1.0; approach angle: 30 degrees; departure angle: 30 degrees; interaxle clearance angle: 12 degrees; underbody clearance: 460mm (18"); underaxle clearance: 330mm (13"); turning diameter: wall to wall: ≤ 36m (117ft); chassis flexibility: climb a vertical wall 460mm (18") high and negotiate terrain which will deflect the opposite wheels of the truck in alternating contrary directions at least 356mm (14") without the remaining wheels losing traction. acceleration: 0-80kph (0-50mph): within 30 seconds; top speed: 125kph (78mph) maintained for at least 21km (13 miles); 105kph (65mph) for 97km (60 miles); gradeability: 20% @ 13kph (8mph) ascend and maintain speed; 40% @ 1.6kph (1mph) ascend, stop, start, descend, stop, start while extinguishing agents from the primary turret 50% @ 1.6kph (1mph) ascend and descend; side





slope stability: static: minimum of 30 degrees (58%), dynamic: minimum of 12 degrees (20%) while extinguishing agents; dynamic balance: On 100ft (30m) radius: 35.4kph (22mph); brake holding: parking 20% ascending & descending, service 50% ascending & descending; brake stopping distance: service: 32.2kph (20mph): 12.2m (40ft), 64.4kph (40mph): 48.8m (160ft), emergency: 64.4kph (40mph): 87.8m (288ft); pump flow rate: 7,950lpm @ 13.8 bar (2,100gpm @ 200psi). Performance Parameters for TITAN® HPR 8X8 (continued): Roof Turret Discharge: Flow Rate: 1892/3785 lpm (500/1500 gpm) @ 13.1 bar (190 psi) nonaspirated; Control: Electric Joystick Operated; Reach Straight Stream: 76 m (250 ft); Reach Dispersed Stream: 23 m (75 ft); Width Dispersed Stream: 10.5 m (35 ft); Horizontal Rotation: 240 degrees (Akron); Vertical Travel: 45 degrees above to 20 degrees below horizontal; Ground Sweep Nozzles (2): Flow Rate: 189lpm (50gpm) each; Flat Pattern Reach: 9 m (30 ft); Flat Pattern Width: 3.6 m (12 ft); Preconnected Woven Jacket Handline: ; Nozzle Flow Rate: 360 lpm (95 gpm); Reach Straight Stream: 19.5 m (65 ft); Reach Dispersed Stream: 6 m (20 ft); Width Dispersed Stream: 4.6 m (15 ft); Undertruck Nozzles: Flow Rate: 76 lpm (20 gpm) each, specify quantity; Bumper Turret Discharge Nozzle: Flow Rate: 1,136 lpm (300 gpm); Flat Pattern Reach: 15 m (50 ft); Flat Pattern Width: 9 m (30 ft); Flat Pattern Near Point: 9 m (30 ft) front of bumper; Straight Stream Reach: 46 m (150 ft); Horizontal Rotation: 180 degrees; Vertical Travel: 45 degrees above to 20 degrees below horizontal; Reeled Water/Foam Handline; Nozzle Flow Rate: 227 lpm (60 gpm); Straight Stream Reach: 15 m (50 ft); Reach Dispersed Stream: 6 m (20 ft); Width Dispersed Stream: 4.6 m (15 ft); Dry Chemical Capacity: 317 kgs (700 lbs); Dry Chemical Handline Reel: Discharge Rate: 2.3-3.3 kgs/sec (5-7 lbs/sec); Range: 7.5 m (25 ft); Dry Chemical Turret Discharge: Discharge Rate: 7 kgs/sec (16 lbs/sec) minimum; Range: 30.5 m (100 ft); Pattern Width: 5.2 m (17 ft) Foam Proportioning System: Automatic around the pump type foam proportioning with individual metering port for each foam outlet; Lighting & Warning Equipment: Electronic siren with PA system and output speaker at cab front; two integrated warning beacons front and rear; two 24-volt deck lights with master control in cab; one 24 volt light in each enclosed compartment, two 24-volt lights in the engine; compartment and two 24-volt lights in the body service areas; six work lights, three each side around the vehicle's perimeter. Back up alarm. Mercedes Atego Vehicle Specifications: Manufacturer: Hilton, Chassis: Mercedes-Benz, Atego 1628 F, 4x2, Water Capacity: 3.000 liter (Godiva WSB 3010/0); Foam: 200 liter; Pump flow rate: 3000 Lpm @ 16 bar Automatic foam proportioning system 3%; Bumper Turret : Akron Brass 3645 1900 lpm. Horizontal rotation 180 degrees. Vertical travel 45 degrees above to 20 degrees below horizontal. Mercedes Actros: 476 pk / 350 KW. Aandrijving: 8 x 8. Lxbxh: 13.00 m x 2.50 m x 3.50 m. Weight: 33.000 kg. Highraiser: Hilton Engineering. Type: Hilton AR 240T. Max. height: working height 24 m on stamps. Max. flight: 10 m at 360 degrees. Max. Height: 12 mtrs without stamps. Max. flight: 20m 15 to left and right. Generator: Hatz 20KVA. Pressure ventilator: 1 time. 2 Hydraulic pumps: Electronic engine. Tools: Spreader, 2 Combitools and Scissors. Cage l x b x h 2.50 m x 1.50 m x 1.10 m. Max. load cage: 800 kg or 8 persons. Cage is turnable 30 degrees. Monitor: 3.000 l/min. Haspel: 60 m 230 l/min bij 8 bar. Ventilator: Lightbeam 2 x 500 W / 220 V. Watertank: 3.150 liter Foamtank 200 liter. Pump: 3.000 l/min at 8 bar.

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 a Fire Training Simulator, which 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 and snow clearing RWY.

8.2 Average annual days of snow: 7 days per winter season.

8.3 Average snow depth: Less than 1cm.

8.5 Annual number of days of de-icing activities: 50 days per winter season.

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? Per shift maximum 110.

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): Truck + plough + blowsweeper, 18; Truck + blowsweeper, 12; Truck + plough, 5; Snowblowers, 3; Runway light sweepers, 2; Sprinkle-devices salt, 9; Sprinkle-devices KAC, 5; Runway de-icing trucks, 3; Apron de-icing trucks, 4; Frontloader, 1; Wheeled shovel-loader, 14; Trucks snow-transportation, 20; Runway friction testers, 2; Glycol Recovery Vehicles, 4.

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 runway de-icing fluid potassium formate 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 430,000 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 minimise 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 runway sensors for precise temperature readings to decrease the amount of used chemicals. Renewed last year all our runway de-icing trucks by state of the art trucks from Dammann.

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 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 ables us to reduce the costs for winter operation and improve our environmental performance.

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 done by AviaPartner, KLM ground Services, Menzies, and Servisair.

14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Schiphol has a Central De-icing Facility with 4 pads operated by KLM Ground Services. The CDF increased de-icing (hour) capacity, improved overall safety and improve environmental performance. 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 collected by a drainage system on the CDF and by glycol recovery trucks on the aprons, and transported to a third party water treatment plant outside the airport.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? We have 2 ASFT friction testers (model VW Sharan's).

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.

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.






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 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? 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 (=operations) 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 (=operations).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Noise Scare Crow, gunfire and birdscare cartridges.
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 liter 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 3m 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 kaliumacetaat. 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 liters used Cryotech. Holdover times good. Potasiumacetaat effectiveness good.
12.2 Comment on storage capabilities of the chemicals that you use: Tanks in stainless steel for 30,000 liters kaliumacetaat 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 Sodiumacetate and moisten the product with Kaliumacetate.
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 deicer 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

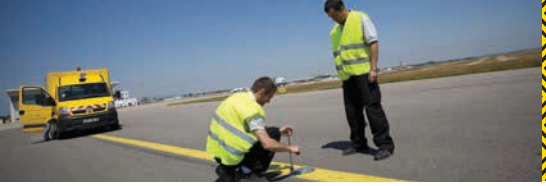
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Done by a private company.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? No.
14.3 Is glycol recovered? 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 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 45m, and shoulders of 7.5m on either side. The runways are designated as follows: Runway 03R/21L: RWY length: 4,000m. 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: 4,000m; TODA: 3,800m. Runway 21R: TORA: 4,000m; TODA: 3,800m. Ramp area: 45,975sqm, plus non-effective areas (11m, 853sqm). Total apron area: 57,828sqm.
2.2 Landing aids for each RWY (e.g. CAT II): The runways' landing aids are able to serve CAT II approaches. Approach lighting: Precision approach CAT II; lighting system: 900M, all RWYs; PAPI, left side/3 degrees; 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 2013 the revision of the Aerodrome Operations Manual, Volume I: Aviation Safety Management Systems, was completed.

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 Dept. 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 airside; Management of FOD meetings; Aviation Safety Newsletters; and Airside Safety Campaigns. Moreover, special care is taken regarding safety issues such as the proper chocking of aircraft, especially during adverse weather conditions.
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 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: Enhanced TWY centreline warning and additional RWY holding positions, plus RWY guard lights, retro reflective taxiway end signs and 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 and deals 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 minimise wildlife attraction. Food, water, and roosting/resting/nesting places are minimised either by 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 such as 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? Members of the Wildlife Control Team (all with a university degree in life sciences) have been trained by the German Bird Strike Committee and the UK Food and Environment Research Agency (Bird strike Avoidance Team). Continuous training includes participation in ACI training courses, 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 knowledge on problem solving. These members organise and provide training on an annual basis to other airport personnel that support wildlife management.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? At least one dedicated person – a member of the Wildlife Control Team – monitors and records wildlife activities on the airfield 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 supports 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 in 13 airport vehicles, self-made based on car CD players, which broadcast recorded distress or alarm calls recorded in cooperation with university specialists, and also digital loud sounds; two portable sound devices broadcasting distress calls purchased from SCARECROW BIO-ACOUSTIC SYSTEMS LIMITED; four shotguns firing both blank and live ammunition; one laser pistol AVIAN DISSUADER, purchased from SEA TECH.
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 a year to reduce the population 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; MAN 38.1000 VFAEG; MAN V12 diesel engine, Euro 2; 735 kW (1,000 HP) at 2,300 min-1; 8X8; 12,500l water GFP, 2x 750l foam GFP; 1,000 kg HP powder; 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? 15 December-15 March.
8.2 Average annual days of snow: Not Available (snows on average every two 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): Schmidt TJS 630, 4 units; Schmidt, 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 (with optional Schmidt Large Snow Cutter); Vehicle Atego 1823 Schmidt brush, 2 units; Vehicle Tractor John Deere Schmidt plough, 1 unit; Vehicle Kramer Schmidt plough, 1 unit; 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: 1. Runway; 2. Adjacent TWY; 3. At least three high speed exits and a taxi lane towards MTB and STB. Simultaneously the 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, Tractors, 2 units). 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? Answer: 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 Meteo Service.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Not applicable.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Not applicable.

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 three ground handling companies with relevant equipment. Total number of de/anti-icing trucks is five. De/anti-icing truck types: FMC Tempest II, 3 units; Ford Trump 2000, 1 unit; Vestergaard, 1 unit.
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 Friction Tester, 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

aena aeropuertos

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): All this information is included in the AIP.
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 was recognized by the Spanish Aeronautical Authority (AESA) as a certified airport. Also, the airport has undergone external audits of AESA, where it was verified that the airport meets the national standards RD862/09. Therefore the SMS of Barcelona-El Prat complies with ICAO Annex 14 standards.
The SMS's main premise is continuous improvement. The internal procedure BCN-PGS01, "Risk Management System", is a systematic procedure and it requires a semi-annual monitoring of all identified situations, facilitating the control of hazards and risks at the airport.
In addition, 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; planning the airport operations of an aircraft that requires major changes regarding the aircrafts operating so far.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

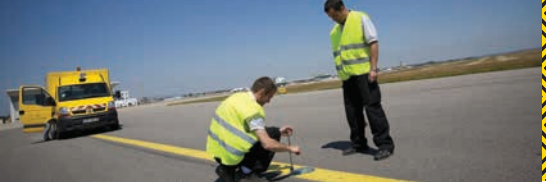
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The learning programme of the Handling Agents, Airlines and Companies that work at the airport includes FOD Control awareness.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspection by handling 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 monitoring 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: 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 to all components of Animal Control Service. Specific formations 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 teams prevention 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): Equipment used: Hawks Team (14 in each team); blank pistols. Blank pistols characteristics on the cards attached. Bird frightened off systems by 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).
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 daily recorded by Animal Control Service. They also receive reports from airlines and the tower. With all these data, statistics and indicators the department is able to log all their bird control activities successfully. Analysis on stroked birds 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? From December 1st to March 15th.
8.2 Average annual days of snow: 0-1 days.
8.3 Average snow depth: 0-0.5cm.
8.4 Maximum snow in 24 hours: 0.7cm.
8.5 Annual number of days of de-icing activities: 1 per year.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 15 airport-employed. 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): Airport equipment: 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 behind the Snowplough trucks work 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 preventive treatment solid urea (dampened with potassium acetate) and liquid potassium acetate corrective treatment. Any product used last season.
12.2 Comment on storage capabilities of the chemicals that you use: Now 20Tn of solid urea, and 25 Tn 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 (30 min).
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? The measuring surface temperature, friction meter and 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 issued forecasts for the possibility of frost and snow and tracks of the meteorological parameters (Aerodrome Advisory Bulletin, TAFOR, TREND, METAR, SPECI). And 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 preventive 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.

BELGRADE

Belgrade Nikola Tesla Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME:

Belgrade Nikola Tesla 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 length: 3,400m; RWY width: 45m; shoulder width: 7.5m, paved. Runway 12: TORA: 3,400m (2,800m if take off is from intersection C); LDA: 3,400m. RWY 30: TORA: 3,400m (3,000m if take off is from intersection E, 2,085m if take off is from intersection D); LDA: 3,000m. 3 aprons: Apron A: 10 parking positions with PBB for C category a/c (wing span from 31.81m to 44.42m), including 1 position for a/c with 50.39m wing span and 15 positions for general aviation (wing span from 12.04m to 23.72m). Apron B: 6 open parking positions for C category a/c (wing span from 32.92m to 34.31m), 1 open parking positions for with 50.39m wing span. Apron C: 10 parking positions for C category a/c (6 with PBB and 4 open positions), with restrictions 5 parking positions (3 with PBB and 2 open positions) for 65m wing span a/c.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 12 – precision instrument approach CAT I/II/III. RWY 30 – precision instrument approach 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, SMS update will be finished in 2014.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: FOD training is established within Basic Safety Awareness training. Ev-






ery employee at the airport must pass the test before entering restriction area.
b) Inspection by airline, airport, and airplane handling agency personnel: Parking position FOD check is done before and after a/c turnaround by the ramp agent. Every employee must remove FOD from the apron if they see any. RWY and TWY FOD check is performed by vehicles.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD containers are located on every parking position. Cleaning trucks are used for apron cleaning.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Every third party company/agency has attended basic safety awareness course and has been given documents about apron movement, which state that every person must collect FOD from the apron/TWY/RWY. If they collect such an item, they must report it to a 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, we do not use any special system or software solutions.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? ATC monitors all vehicle and aircraft movement on the manoeuvring areas.
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, we do not use any special system.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Traffic lights are used for one of the service roads (called controlled service road) which cuts 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 driver must pass a special driving test designed for the airport. The Airport Safety Office conducts the training. There are two types of driver training, for drivers who work at the apron and for drivers who work on apron and manoeuvring areas. These tests are obligatory for airport staff and third parties.
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 reporting system is established according the national law (every aviation subject in the Republic of Serbia must have one). Nikola Tesla Airport has established a "no blame policy".

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: High-grass policy, using grass/plants that do not attract birds, constant patrol around RWY and TWYs using two specially equipped vehicles.
6.1 Do your staff attend recognised bird control training courses? The Head of the Bird Control Unit completed FERA's course: Airport Bird Hazard Management, 21-22 November 2012, York, UK.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Working hours are from dawn till dusk, depending on sunrise and sunset during the year. (Source: AIP Serbia and Montenegro.)
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): 3x handheld lasers (Avian Dissuader, green lasers), 2x megaphones, 2 sound systems mounted on SUV's (Runwailer and Premier 1500), and 2 SUVs (in process of buying third SUV).
6.4 Do you carry out a bird strike risk assessment? Yes, we carry out risk assessment.
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)? Every employee fills in a special log every day during working hours.
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 significant problem 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: Panther AT; MAN; 36.1000 VFAEG; 6X6; 12,500l water, 1,500l foam, 250kg powder, pump capacity: 10,000l/min at 10 bar, 300l/min at 40 bar, water gun capacity: 6,000l/min at 10 bar, range: 80m. Panther AT, MAN 38.1000 VFAEG, 8X8; 12,500l water, 1,500l foam, 750kg powder, pump capacity: 6,000l/min at 10 bar, 300l/min at 40 bar, water gun capacity: 6,000l/min at 10 bar, range: 80m. SKAMELL; LAJLAND; 6X6; 10,000l water, 900l foam, 100kg powder, pump capacity: 6000l/min at 10 bar, 300l/min at 40 bar, water gun capacity: 6,000l/min at 10 bar, range: 80m. SKAMELL; LAJLAND; 6X6; 10,000l water, 900l foam, 100kg powder, pump capacity: 6,000l/min at 10 bar, 300l/min at 40 bar, water gun capacity: 6000l/min at 10 bar, range: 80m. Mercedes; Mercedes; 4X4; 3,000l water, 400l foam, pump capacity: 3000l/min; 2 units. Command vehicle: VW Crafter.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Purchase plans: 2014: fire fighting vehicle; 8X8; with telescopic nozzle. 2015: rescue stairs. No plans to dispose of equipment.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not have Fire Training Simulator, but there is a plan for the purchase of one in the next five years.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 November-30 March.
8.2 Average annual days of snow: Approximately 27 days a year.
8.3 Average snow depth: 39.1cm.
8.4 Maximum snow in 24 hours: 25cm.
8.5 Annual number of days of deicing activities: 23 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or subcontracted winter services personnel are available per shift? 50 employees per shift.

10. WINTER EQUIPMENT INVENTORY

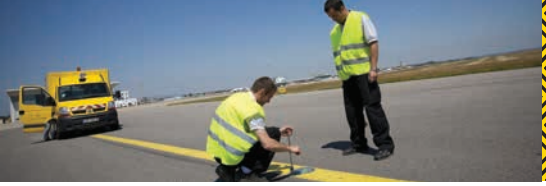
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snowsweeper, Øveraasen, RS 400 MK II & III, 6 units; snowblower, SCHMIDT, SUPRA 5001, 1 unit; combination de-icing spreader SCHMIDT ACE 4000, 1 unit; Airport Friction Tester, Škoda Octavia 1.8 TSI ASFT, 1 unit; Airport Friction Tester, Škoda Fabia 1.2 CDI ASFT Frensor, 1 unit; snowsweeper, SICARD 314, 4 units; snowblower, SICARD 7500 SMI, 1 unit; combination de-icer-spreader, Küper-Weisser, 1 unit; backhoe loader, with snowplough, HITACHI, 1 unit; skid steer loader, BOBCAT 175 with snowplough, 1 unit; backhoe loader, VENIERI 10.33B with RWY light clearing equipment, Tellefsdal, 1 unit; truck, FIAT 697 with snowplough, 1 unit; tractor, KIOTI with snowplough, 8 units; tractor, IMT 539 with solid de-icer spreader, 1 unit; UNIMOG with snowplough and sa raonikom and solid de-icer spreader, 1 unit; tractor IMT 539 with snowplough, 1 unit; Terratrac Aebi TT 180 with snowplough, 1 unit; Terratrac Aebi CC 60 with snowplough, 1 unit; special multifunctional tractor, Antonio Carraro TTR 8400 with snowplough, 1 unit; tractor IMT 507 equiped with snowblower, 1 unit; solid de-icing spreader, Cyclon, 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: 1. RWY; 2. TWYs A, B & E; 3. TWYs C & D; 4. Sensitive zones around radio-navigational equipment; 5. TWYs M, F & G; TWYs J, K, L & H; 6. A/C stands A1-A10 & C1-C6; 7. A/C stands C7-C10; 8. A/C stands B1-B7; 8. General aviation platform.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY and TWYs A, B, C, D & E: Six snowsweepers, Øveraasen RS 400 MK II & III, in a formation, following one snowblower, SCHMIDT SUPRA 5001. After them, one backhoe loader, VENIERI 10.33B, with RWY light clearing equipment, Tellefsdal, and at the end one combination de-icing spreader, SCHMIDT ACE 4000. Before and after the snow clearing one of the ASFT vehicles checks braking conditions on the manoevring area and reports it to the TWR. Apron: Tractors and trucks, FIAT and UNIMOG, clear the snow from the AC stands aproximately 5m away from the bridges, where it is pushed further from the apron on to the green areas by six snowsweepers, Øveraasen RS 400 MK II & III, a backhoe loader, Hitachi, and a SICARD snowblower.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? RWY: maximum 35 minutes; TWY A-E: maximum 45 minutes; TWY G: maximum 60 minutes; TWY F & H: maximum 40 minutes; TWY M: maximum 25 minutes; Apron A: maximum 60 minutes; Apron B: maximum 50 minutes; Apron C: maximum 50 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: Solids: Urea, approximately 250t, very effective for temperatures up to -6˚c. Effective up to three or four hours if there aren't any freezing rain or strong winds, otherwise it has to be applied more frequently or we have to apply liquid de-icer. Liquid: Clariant Safeway is very effective for temperatures up to -15˚c. Effective up to three or four hours if there isn't any freezing rain or strong winds.
12.2 Comment on storage capabilities of the chemicals that you use: Urea: around 150t, Safeway: 40,000l.
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? 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: We do not use ice warning systems.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Not so far.

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: We provide anti/de-icing operations. Four vehicles: two Vestergard Elephant Beta 2 and two Vestergard My 2.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We do not have dedicated de-icing positions. De-icing is preformed on TWY after push back operation.
14.3 Is glycol recovered? If so, please state methods: We do not recover glycol.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Airport Friction Tester, Škoda Octavia 1.8 TSI ASFT and Airport Friction Tester, Škoda Fabia 1.2 CDI ASFT Frensor.
15.2 Have you any comments on the reliability of friction indexes? We didn't have any complaints about the reliability of the read friction indexes.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Not so far.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Purchase plans: 1. Fire fighting vehicle, 8X8, with telescopic nozzle; 2. Rescue stairs; 3. Two more Overaasen RS 400s; one snowblower; solid de-icer.
16.4 Do you have any winter services equipment that you would like to sell? No, we do not have winter service equipment for sale.

BOLOGNA

Aeroporto di Bologna

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Bologna 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 2,800m, TORA rwy12/30 2,803m.
2.2 Landing aids for each RWY (e.g. CAT II): ILS RWY 12 Loc. cat 3/B. ILS RWY 30 Loc. cat 1 (under construction).

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? At the end of every year we control the event types and check the frequency related to the events in risk assessment. Last review 19.02.2013.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All operators must attend to the BLQ ramp safety course, where they receive a specific training on FOD.
b) Inspection by airline, airport, and airplane handling agency personnel: Yes.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Yes: sweeping.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes: safety committee and frequent 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): No.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? TWR, SMR
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Taxiway A: new RHP A1
e A2 to prevent runway incursion.
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): AMS-Apron Management Service.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Everything is ok.
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? Hot spot maps for RHP A, specific training for 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? All runway safety incidents are discussed on the Local runway safety team, coordinated by the SMS. For every incident is required a report.

6. BIRD AND WILDLIFE CONTROL

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.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): L-RAD (Long-Range Acoustic Device) produced in the USA; Bird-Strike Sound Watcher (with remote control); portable and vehicular distress call; blanks loaded guns; gas-propelled cannon.
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, daily report.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Hares (periodic capture).

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: Data not available; service provided by Government.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Data not available; service provided by Government.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Fire training simulator available in future.

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: 10 days.
8.3 Average snow depth: 11.8cm/day.
8.4 Maximum snow in 24 hours: 57cm.
8.5 Annual number of days of de-icing activities: 80 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 120.

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): 3 Pulled snow-sweepers Schorling P12; 4 Snow sweeper Truck – FRESIA F2000 (*); 1 Liquid spraying KUPPER WEISSER; 1 Liquid spraying GILETTA su autocarro MERCEDES; 1 Snow booster Schmidt Supra 9000; 1 snow sweeper Boschung JetBroom; 1 equipment for snow removal from rwy edge lights; 3 4wd trucks for pulling of SCHORLING P12; 9 Tyred tractor HP 200/300 with snow-plough; 21 Tyred tractor HP 200/300 with snow-plough; 2 Tyred tractor HP 180/240 with snow-plough; 6 Tyred tractor HP 50/120 with snow-plough; 1 Tyred tractor HP 200/300 with snow-booster; 1 Tyred tractor HP 90/140 with snow-booster; 1 Caterpillar Tractor HP300/400; 1 Tyred Tractor HP 120/300 with front snow-sweeper; 1 Tyred tractor HP 50/120 with salt spraying device; 10 Tyred bulldozer for snow loading on trucks; 8 Trucks for snow-carriage MC 20; 8 Trucks for snow-carriage MC 10; 8 Bob-cat; 2 Bob Cat with snow-plough; 1 Caterpillar bulldozer HP 100/200; 1 Caterpillar bulldozer HP 200/300; 1 Manual salt spraying device.

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: Twy TS, rwy 30/12, twy A, twy t, taxilane Z, apron 1-2-3, apron 4.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY and TWYS: arrow-formation with snow-plough on front and snow sweepers at the back; rwy snowbanks reduction with dedicated snow sweepers. APRON: snowploughs and sweepers; bobcats for fine-tuning.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Rwy "black-top" (width 37 metre) is achieved 15 minutes after snowfall end.

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 (liquid) and sodium formate (salt).
12.2 Comment on storage capabilities of the chemicals that you use: 2 tanks (19,000 litres each).
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Good experience especially along service viability.
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 of chemicals only in presence of very low temperatures.
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: Deicing service is provided by Handlers
N. 4 equipments JBT Tempest
N. 1 equipment Vestergaard Elephant
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing on apron (off-gate dedicated de-icing position to be built within 2015).
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? SFT - Surface Friction Tester.
15.2 Have you any comments on the reliability of friction indexes? Reliable for maintenance purpose.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No (at the moment).
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes: 1 snow sweeper plus 1 snow plough.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: 1 snow sweeper (Schmidt); 1 snow plough (Schmidt).
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): Runway 09/27: 126,772sqm; RWY length: 2040m; RWY width: 45m. TWYs A, B, C, D, E, F, G, H, K, L: 82,712sqm. Aprons: 155,670sqm. TORAs: RWY 09: TWY A: TORA: 2034, TODA: 2094, ASDA: 2034; TWY B/C: TORA: 1140, TODA: 1200, ASDA: 1140; TWY D: TORA: 750, TODA: 810, ASDA: 750. RWY 27: TWY F: TORA: 2034, TODA: 2094, ASDA: 2034; TWY E: TORA: 1610, TODA: 1670, ASDA: 1610; TWY D: TORA: 1170, TODA: 1230, ASDA: 1170; TWY B/C: TORA: 750, TODA: 810, ASDA: 750.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 09: CAT IIIb (ILS, appr. lighting system). Runway 27: CAT IIIb (ILS, appr. lighting system), GBAS (currently certified for CAT I only), PAPI 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 is an integral part of the company operations manual. Installation of Runway Guard Lights and Wind Direction Indicators at each end of RWY 09/27 currently under construction (as a result of risk assessment with local authorities); will be operational in January 2014.

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). FOD 'campaign' currently under way with all ramp staff; initiated by Safety Office.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections are done. Regular ramp checks are carried out, including corrective action (safety advices from Safety Office).
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 Safety Office (weekly meetings with duty manager, monthly with ATC, plus Ramp Safety Committee and Runway Safety Team meetings twice 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 special software in use for FOD control. SMS software is in use since February 2013 as control and reporting system ('A-SMS', manufacturer: Airsight, Berlin).

5. RUNWAY INCURSION PREVENTION

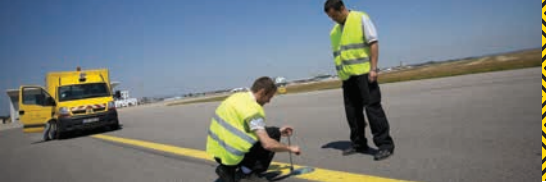
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements are controlled and coordinated by local ATC (TWR), governed by memorandum containing applicable process instructions for airside of airport. Illuminated stop-bars for CAT II/III operation are in use. Runway Guard Lights are currently under construction (see above).
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 are used also. Taxi lanes on apron are named 'November' (northern lane) and 'Sierra' (southern lane), without affixes 'lane' or 'gap' to avoid confusion with ATC-clearances.
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 in accordance with ICAO ANNEX 14. RWY guard lights will be installed in 2013. Road Holding Position Lights will be installed later in 2014 (roads with direct access to the active runway are currently secured by signs, markings on the ground and plastic chains with reflectors).
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 the airport traffic centre performs yearly training sessions on airport movement areas for authorities like the police, MET service personnel and other service personnel (regular meetings, RWST, RSC, see above).
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? Written reports by Airport Duty Managers and/or ATC on any incidents. Immediate investigation of incidents done by Safety Office with resulting safety advices according to the 'no blame' rules predicted by SMS (similar to aircraft accident investigation).

6. BIRD AND WILDLIFE CONTROL

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? All bird control staff are 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 carried out using 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 organisation.
6.5 Do your staff log all their bird control activities? (to manage success in dealing with the problem, and to use in defense in case of lawsuits)? Yes. Immediately after each bird strike. Every bird control activity is recorded in a report and available to the responsible bird strike manager. If no immediate ID is possible, pictures are taken and sent together with the bird strike report and the remains of the birds to the German Bird Strike Committee (GBSC), DAVVL and the LBA (Luftfahrtbundesamt).
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 and daily/weekly monitoring.

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. TroLF 2000; 2,000kg powder; MAN 6X6; 1996. Flughafen-Hubrettungs-TroLF; 2,000kg powder; MAN 8X8; 1993. FLF 60/90I; 9,000l water, 1,000l AFFF; MAN 8X8; 1988. FLF 60/90 II; 9,000l water, 1,000l AFFF; MAN 8X8; 1989. FLF 60/90 III; 9,000l water, 1,000l AFFF; MAN 8X8; 1998. FLF 60/60; 6,000l 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 Simula-





tor, is this available to other airports for training purposes? Fire Training Simulator for external procedures at Rotterdam and Frankfurt airports.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 October-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 de-icing activities: 30-50 days.

9. WINTER ORGANISATION

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

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): Airblast snow-sweepers (Schörling P17B) towed by 4 trucks (Mercedes-Benz, Type 1928, 4X4), and 1 truck (MAN TGA 18.350 4X4 BLS, each with a snow plough (Schmidt SM), 5 units. Trucks with snow ploughs (Unimog 4X4, Mercedes-Benz 4X4, Mercedes-Benz 4X4), 3 units. Snow-blower (Unimog1300 4X4/ Schmidt Turbostream T5) 1 unit. De-/anti-icing unit (Iveco 330-30H, 6X6/Küpper-Weisser Multi-De-Anti-Icer, 9m³ Fluid, 6m³ Solid), 1 unit. De-anti-icer unit (Iveco 330-30, 6X6/Küpper-Weisser, 14m³ Fluid), 1 unit. Double-rotation solid-spreader 4.6 m³ (MAN TGM 18.250, 4X4 / Epoke 4.6m³), 1 unit. Single-rotation solid-spreader 0.5 m³ (MB 300GD, 4X4), 1 unit. Single-rotation solid-spreader (MB UX100, 4X4/Küpper-Weisser Typ SDA 95, 1.3m³), 1 unit. Single-rotation sprayer (MB 300GD, 4X4/ Küpper-Weisser Typ SDA 95, 1.3m³), 1 unit. SKH, Skiddometer BV 12 with Computer MI 90, 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: 1. RWY 09/27; 2. TWYs A, F, C (CATIII TWYs); 3. Aprons (Ramp 1, Ramp 2); 4. Other TWYs; 5. Other movement areas.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Snow plough and snow-sweeper – first snow removal, then de/anti-icing-fluid. Generally prefer de-icing procedures as 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 and YARA Aviform S Solid. Very effective with a short reaction time; holdover time is weather dependent after application.
12.2 Comment on storage capabilities of the chemicals which you use: Maximum 80m³ fluid (50l) and 5-20m3 solid.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Mixing – rate of 80% solid to 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 on how to handle anti-/de-icing procedures in the BRE Winter Operation Handbook. Personnel are 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 is used in extreme situations only – but not on the RWY.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Not available at BRE.

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: Vestergaard Elephant, 3 units.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing 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 Pressure) BV 11 with MI 90 computer, used 1-10 times per day or more as required, depending on traffic and weather conditions.
15.2 Have you any comments on the reliability of friction indexes? Friction Coefficient – reporting in conditions, especially under wet conditions, which mean that the runway is contaminated with wet ice, wet snow or slush. Such conditions are to be reported to ATC/pilots using only the terms GOOD, MEDIUM or POOR, corresponding to Figures 5, 3 and 1 in 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 which you would like to sell? No, we do 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: 01. True orientation: 014.43 degrees. Ident: EBBR01. Length: 2987m. Width: 50m. Threshold: 46.07m, Slope: -0.7774%. ILS type: CAT I; RWY: 19. True orientation: 194.43 degrees. Ident: EBBR19. Length: 2987m. Width: 50m. Threshold: 219.97m, Slope: +0.7774%. ILS type: CAT I; RWY: 07L. True orientation: 065.38 degrees. Ident: EBBR07L. Length: 3638m. Width: 45m. Threshold: 258.70m, Slope: +0.2064%. ILS type: Non-precision; RWY: 25L. True orientation: 249.89 degrees. Ident: EBBR25L. Length: 3211m. Width: 45m. Threshold: N/A, Slope: -0.1482%. ILS type: CAT III b; RWY: 25R. True orientation: 245.38 degrees. Ident: EBBR25R. Length: 3638. Width: 45m. Threshold: 299.93m, Slope: -0.2064%. ILS type: CAT III b; TWYs: Width 30m with 10m shoulders; Main apron: 1,660,000 m²; Cargo apron: 170,000sqm; General Aviation apron: 21,000sqm.

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 programme (about 100 internal & external safety audits); updated theoretical training curriculum for vehicle drivers on the manoeuvring area; practical Training concept for vehicle drivers (apron and manoeuvring area) including human factors, communication (ICAO R/T) and abnormal circumstances and emergencies by means of airside driver training simulator with full Brussels Airport 3D model; Apron Safety Committee introduced formalised and standardised reporting of lessons learnt out of incidents; BRUTuS: BRUssels Turnaround Safety taskforce: mapping of process, identification of hazards, risk tables, mitigation proposals for management including communication with all airside operations stakeholders; reviewed SMS procedures including introduction of human factors analysis in incident investigation process; analysis and studies on tool management practices looking at avoidance of FOD on RWYs; just culture training for line and duty managers.

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 times daily inspections by airport operator personnel, FOD inspection before arrival and after departure by handling personnel on aircraft stands, company FOD walks.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping program by vehicles equipped with magnetic bars, FOD bins installed near each aircraft stand and prevention on tool management for our partners available. FOD Boss for manoeuvring area sweeping.
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. Tool FOD reporting and investigation.






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 vehicles enter manoeuvring area are transponder equipped. Implementation of a definition for the protected area of a runway and specific chart of this area, which is available to all users via courses and documentation.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Use of stop bars 24 hours; training program for situational awareness and runway incursion prevention; airside vehicle driver training simulator with full airport 3D model, local procedures, standard ICAO R/T, human factors integration.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Mo5del X Airport Surface Detection Equipment): A vehicle tracking system and RIMCAS. Brussels Airport operational vehicles are 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. New stop bar introduced at TWY B5 to avoid small aircraft looking over the existing one. Use of stop bars 24 hours. 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, monthly Local RWY Safety Team meetings, airside vehicle driver training simulator.
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. Brussels airport investigation process adopted just culture principles and has integrated Reason's model for analysis of human factors in each investigation.

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. Testing of new grass mix ongoing.
6.1 Do your staff attend recognised bird control training courses? All staff members are certified.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously daily between 6am and 10 pm.
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, gas canon (Purivox) and air rifle (Air Arms).
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. New system (Ultima) wil be implemented Q1 2014.
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 STATES: FGK 4105, Kronenburg chassis, 8x8 axles, 16,000l water, 3,000l foam, monitor-output: 4,000 – 7,000 l/min, bumper turret-output: 2,000 l/min, 1997; KR50,1100.60. 8x8, Kronenburg chassis,16,000l water, 1,000l foam, 500kg 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, 12,500l water, 1,000l foam, 500kg powder, monitor-output: 2,000 – 4,000 l/min (snozzle), powder output: 300kg/min (snozzle), 2007; KR50.1100.60.8x8, Kronenburg chassis, 16,000l water, 1,000l 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, 4,000l water, 250 litre foam, 500kg 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; 12,500l water, 1,500l foam, 250kg powder, monitor-output: 3,000 – 6,000 l/min, bumper turret-output: 1,200l/min; 2010.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Spare water tank truck, parking fire-fighting vehicle, new ambulance, container car with crane.
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: 15 cm.
8.5 Annual number of days of de-icing activities: 14 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Winter teams: 35. De-icing of aircraft (performed by ground handling companies).

10. WINTER EQUIPMENT INVENTORY

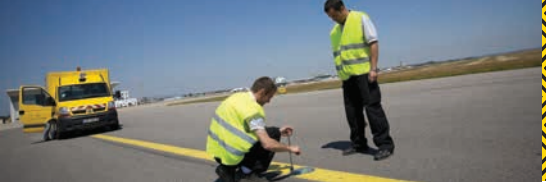
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Compact jet sweeper Schmidt TJS-C560, 4 units; Schmidt Supra 5000 snow blower/cutter, 2 units; Sprayer, 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, LADOG, 4 units; Multipurpose vehicles , John Deere , 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 01 / 19: RWY : 01 / 19, 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, two convoys (8 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 runway is cleaned in 35-40 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: Liquid: CRYOTECH E36: 240,000l, effectiveness is very good but not with extreme low temperatures. Solid: NAAC: 30 tons, 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 service drives airside): 264 tons.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Last year only used on local ice patches (on stands/TWYs).
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? Friction 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 standardisation of runway 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: Yes, one RWY spreader.
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.

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 which is 18m. All taxiways have paved shoulder with 3.5 m width. Apron 1, Apron 2 GA apron, and maintenance areas are approx. 695,000sqm.
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 in 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 ICAO. From this time all relevant processes follow the SMS system, including construction works and new procedures. The system running well, no recent changes are planned.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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 kinds of movement area safety trainings including handling companies, airport operator and subcontracted partners as well. The FOD management is also a part of the '3 Level Airside driving Licence' system.
b) Inspection by airline, airport, and airplane handling agency personnel: The FOD control is a relevant part of the daily inspection routine of Airfield staff. On the aprons the Ground handling companies are also inspecting the ramp areas before every aircraft arrival and departure. Every month an FOD collection is organised by the Airside Management together with the EHS team. Before and after the winter season an overall 'FOD-Fishing' 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 jet-sweepers without plough. All defined parking positions are equipped with dedicated FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc):
The FOD is a topic of 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): No.

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 kinds of traffic. All vehicles on the manoeuvring area are equipped or escorted by a vehicle 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 indicating the limit for drivers and workers close to runways. A new illuminated mobile closing sign is tested to indicate the closed areas more accurately for aircrew.
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 take place between tower and vehicle drivers. In 2013 the A-SMGSC was upgraded installing the conflict alert functions and indicating the closed areas (in active manoeuvring areas).
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, including ANSP and 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 is 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? 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 its own Bird and Wildlife Management, with a detailed manual containing 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. Also a dedicated member of senior management (Head of Airside Operations) is named as the responsible person for bird and wildlife control.
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, parallel 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, Border collie, recorded distress and bird alarm cries (Scarecrow), gas cannons (Zon Mark4). The usage of traps and shotguns with pyrotechnics and normal ammo has been suspended due to licencing problems.
6.4 Do you carry out a bird strike risk assessment? Twice a year by internal audit and audit done by main carriers.
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 dedicated bird log is in use, including all kinds of activities and 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 was high, mainly between sunset and sunrise. The






bird team is using traps and guns, and the population of rabbit was dramatically reduced in the year 2012. This year there were no rabbit incidents.

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: MAN; Rosenbauer; foam 5,000 l/min; 1995. Rosenbauer; Freitliner; foam 6,200l/min; 2004. Mercedes; Rosenbauer; foam 7,000 l/min; 2007. Rosenbauer; Rosenbauer; foam 6,000l/min; 2-11. Rosenbauer; Rosenbauer; foam 6,000l/min; 2011. Mercedes; Rosenbauer; water 10,000l/min; 2005. Mercedes; Rosenbauer; foam 2,400l/min; 2001. Rosenbauer; Mercedes; foam 2,400l/min; 2011. Rosenbauer; Mercedes; 2,400l/min; 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 midterm plan contains the purchase of new equipments.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? At this point two old, unused ACFT serve for training and a new training fire fighter container has been built. A complete refreshing training at Leipzig was organized for the whole staff.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? According to 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: 8-12 cm.
8.4 Maximum snow in 24 hours: 25 cm.
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? Four different levels are defined. In green level: 4, in yellow: 12, in orange level: 32, in red: 48.

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): 8x SCHMIDT-MERCEDES compact JET SWEEPER; 5x Boschung T-Broom tow behind runway sweepers; 1x Oshkosh blower; 5x SUPRA 4000 blowers; 8x UNIMOG compact units; 2x 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: 1. Active RWY (13L/31R), belonging connection TWYs of the RWY; 2. Aprons 2AB/Apron 1; 3. Other TWYs; 4. 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, a number of 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 carried out if necessary. The final step is the friction measuring process before reopen the runways or taxiways.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 30-35 minutes, it depends on snow depth, and how many snow-clearing 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 (5,220l) on the airside. Urea(117,2t) sand on the landside and other non-airfield areas. Before the last season the most important discovery was that the Urea was uneffective below -6 – -8, resulting in an extremely high quantity of Clearway being used.
12.2 Comment on storage capabilities of the chemicals that you use: No.
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 case of heavy wind 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.
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: Met Observer on duty, ALMOS system, sensors: Air temperature: two per runway at 2m from the ground; RWY temperature: two per 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.

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 case of the hold over time being reduced, the 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 included the changing of chemicals are in used, spreaders as the storage technologies as well.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: In 2014 a new CFME (Friction Measuring Equipment), with self-watering system will be tendered and purchased. As a part of the Midterm Plan, two new runway sweepers will be purchased. The finalisation of the technical parameters is ongoing.
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 is plan to sell the existing Schorling P-17 in 2014.

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 VII. 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

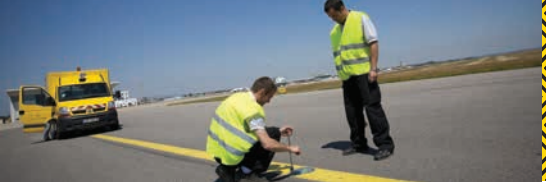
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes.

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 a day cleaning by compact jet sweeper, Schmidt, CJS 914, 4 units; three times a week use of aerodrome vacuum cleaner (Apron, RWY, TWYs); 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? Markings 'RUNWAY AHEAD' on TWYs A1, B1, C1. Marking of the transport roads on the apron. 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, 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 (see 5.2).
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 of airport staff professional skills upgrading. 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 Recommendations of Doc 9859.

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? Yes. Wildlife control and reduction training courses.
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 – 11 units; Bird Gard Super Pro PA4 – 8 units; Mobile Bird Gard Super Pro – 2 units (installed on the special cars); Garden Protector 2 – 2 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). Against animals Garden Protector 2, smooth-bore guns and pyrotechnics are used (scaring procedures).

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-Benz 3350, axles 6X6, 9000 litre of water and 1200 litre of foam solution, 500kg dry chemical powders and 120kg of CO2, year of manufacture is 2008, 2 units.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Rapid response vehicle, axles 4X4.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? LUKK doesn't possess an 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: 4-6 cm.
8.4 Maximum snow in 24 hours: 20 cm.
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; Grader, 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 TWYs 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 the centre line (around the RWY, TWY and aprons) to the 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? 3.50 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.
12.6 Do you have any other comments on experience with chemicals? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: No.
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.

DUBROVNIK

DUBROVNIK AIRPORT
ZRAČNA LUKA DUBROVNIK

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Dubrovnik Airport Ltd.

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 more often checks are performed. Also, parking stands are checked every time before parking of aircraft is performed and before aircraft engine start.
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 theme 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 are recorded






in internal software according which analysis is done.

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 gulls activity on and in the vicinity of aerodrome, we have short and long term measures and procedures defined in 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 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, multipropulseurs), 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 birdstrikes.
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: ZIEGLER TITAN (Z6), 6x6, 12500L/water, 1500 L/foam, 250 kg/powder, year 2013. ZIEGLER MAN (FLF 60/91-11), 6x6, 9100 L/water, 1100 L/foam, year 2002. ROSENBAUER – OSKHOSH (FLF 10000), 6X6, 9000L/water, 1000 L/foam, 250 kg/powder, year 1982. ROSENBAUER – TITAN (SIMBA), 8X8, 11600 L/water, 1200 L/foam, 2000 KG/powder, year 1985. MAZDA – ZIEGLER PICKUP, 4x4, 200 L/water, 10 L/foam, year 2009.
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 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 de-icing 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 it is needed, GHA ground support equipment drivers and RFF staff forms 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, spreader (urea) 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, 1,000kg.
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: No.
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-icing 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? 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.

EXETER

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Exeter International Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

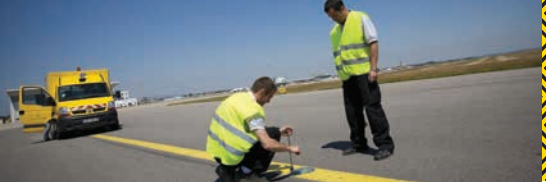
2.1 Please list the identities of primary operational facilities and the surface areas. (For example: total RWY length (or lengths), Take Off Run Available [TORA], RWY width, shoulder widths, total apron area, ramp area, other): Runway 08: RWY length: 2,076m; TORA: 2,037m; TODA: 2,255m; ASDA: 2,037m; LDA: 2,037m; RWY width: 46m. Runway 26: RWY length: 2,076m; TORA: 2,076m; TODA: 2,657m; ASDA: 2,076m; LDA: 2,037m; RWY width: 46m.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 08/26: 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? The airport holds a fully integrated management system, which incorporates the SMS. The system is reviewed annually, following audit, changes in procedures and occurrence reporting, and is accredited by BSI to ISO 9001, 14001 and 18001.

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 are 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 the 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 a programme and 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, 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): 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): Not applicable.
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.
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 three-tier airfield driver permit and competence scheme is 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 an open reporting 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 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: 3x 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? Not applicable.

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: ANSWER: 4mm.
8.4 Maximum snow in 24 hours: ANSWER: 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? Eight.

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): Ploughs, 4 units: Sicard snow blower, 2 unit; CJS 720, 1 unit; Runway de-icers, 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 08/26; 2. Taxiway Bravo; 3. Main Apron; 4. Taxiway Charlie; 5. Taxiway Echo; 6. Taxiway Alpha; 7. 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: Konsin and Isomex.
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.
12.7 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. Not applicable.
13.2 Have you plans to purchase further ice warning systems and if so which model(s)? 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: 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? Not applicable.
15.2 Have you any comments on the reliability of friction indexes? ANSWER: Not applicable.

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.

FARO

ANA Aeroportos de Portugal

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 length: 2,490m; RWY width: 45m; TORA: 2,490m; TWY A/B/C1/C2/D/E/F/P/RD/RG: 23m; Main Apron: 271,061sqm.
2.2 Landing aids for each RWY (e.g. CAT II): RWY 28 – 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? No recent changes.

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 programme. 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, FOD bins at all parking positions.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination 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, on manoeuvring 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/out to 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 active taxiway lighting guidance system with intermediate holding position lights, stop bars and microwaves beam.
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. 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? All drivers have an initial training programme. Yearly, there are 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 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 the accumulated rainwater, vegetation maintenance (to maintain the height and trees are cut back near the runway or taxiway centre line), priority to unattractive vegetation species, minimisation of the shelter points (holes in the walls are covered, application of measures to avoid nesting).
6.1 Do your staff attend recognised bird control training courses? Environment department 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 (from sunrise till sunset).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird control is done using gas cannons, falconry, 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. Bird strike database and census for species, bird movements and bird flocks led 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: OSHKOSH STRIKER 00-001; 720bhp; 12,000l water, 1,500l foam, 250kg dry chemical powders; water pump: 7,400; top turret 1: 6,200; front turret 2: 6,200; 0-80km: 28. OSHKOSH STRIKER 00-007; 720bhp; 12,000l water, 1,500l foam, 250kg dry chemical powders; water pump: 7,400; top turret 1: 6,200; front turret 2: 6,200; 0-80km: 28. OSHKOSH T1500 00-002; 540bhp; 6,000l water, 776l foam, 320kg dry chemical powders, 68 halon; water pump: 4,730; top turret 1: 2,840; front turret 2: 945; 0-80km: 25. TITAN E-ONE 00-003; 540bhp; 12,000l water, 1,500l foam, 230kg dry chemical powders; water pump: 6,810; top turret 1: 2,840; front turret 2: 1,135; 0-80km: 37.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, one CFR vehicle – end of 2017.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Removal of Disabled Aircraft. Faro airport may perform Removal of Disabled Aircraft until category II.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Not applicable.
8.2 Average annual days of snow: Not applicable.
8.3 Average snow depth: Not applicable.
8.4 Maximum snow in 24 hours: Not applicable.
8.5 Annual number of days of de-icing activities: Not applicable.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Not applicable.

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): Not applicable.

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: Not applicable.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Not applicable.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Not applicable.

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 applicable.
12.2 Comment on storage capabilities of the chemicals that you use: Not applicable.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Not applicable.
12.4 Have you experienced any corrosion problems with de-icers? Not applicable.
12.5 Have you employed any special means to economise on chemical use? Not applicable.
12.6 Do you have any other comments on experience with chemicals? Not applicable.
12.7 Do you use other chemicals or sand on operational areas? Not applicable.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. Not applicable.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Not applicable.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems. Not applicable.

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: Not applicable.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Not applicable.
14.3 Is glycol recovered? If so, please state methods. Not applicable.

15. FRICTION TESTING

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

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Not applicable.
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.

FRANKFURT

Fraport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Frankfurt Airport.

2. MOVEMENT AND MANOEUVRING AREA DATA

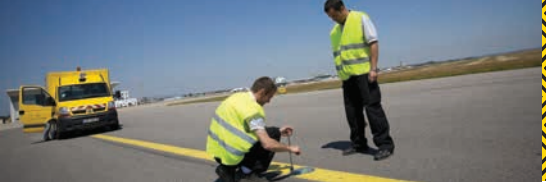
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
RWY: 07L/25R – 2,800m x 45m TORA 2,800m
RWY: 07C/25C – 4,000m x 60m TORA 4,000m
RWY: 07R/25L – 4,000m x 45m TORA 4,000m
RWY: 18W – 4,000m x 45m TORA 3,970m
Total RWY surface area: 726,000sqm
Total apron surface area: circa 2,000,000sqm
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 utilising 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 staffs 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 subcontracted 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, 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 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 de-icing 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/sqm 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.
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, 190,000sqm; TWYs: concrete, 190,557sqm; apron: concrete, 596,100sqm; parking: asphalt, 109,435sqm.
2.2 Landing aids for each RWY (e.g. CAT II): The following information is extracted from AIP Switzerland (LSGG AD 2.19): ILS 23 – LOC CAT III, frequency: 109.90 MHz, operates 24 hours, site of transmitting antenna coordinates: 46 13 29.4N, 006 05 22.3E; GP 23, frequency: 333.80 MHz, operates 24 hours, site of transmitting antenna coordinates: 46 14 56.1N, 006 07 21.7E; DME 23, ISW, frequency: 36X, operates 24 hours, site of transmitting antenna coordinates: 46 14 56.4N, 006 07 21.2E, elevation of DME transmitting antenna: 1,384ft; ILS 25 – LOC CAT I, INE, frequency: 110.90 MHz, operates 24 hours, site of transmitting antenna coordinates: 46 15 12.8N, 006 07 54.1E, elevation of DME transmitting antenna: 1,374ft; GP 05, frequency: 330.80 MHz, operates 24 hours, site of transmitting antenna coordinates: 46 13 50.0N, 006 05 43.6E, elevation of DME transmitting antenna: 1,459ft; DME 05, INE, frequency 46X, operates 24 hours, site of transmitting antenna coordinates: 46 13 50.0N, 006 05 43.8E; Elevation of DME transmitting antenna: 1,460 ft. Runway 23 is equipped for approaches in CAT I/II/III; Runway 05 is equipped for approaches in CAT I. The missed approach procedure uses 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) introduced and implemented a SMS in several phases. This phased approach is in line with ICAO guidelines as well as requirements defined by the Swiss Federal Office for Civil Aviation (FOCA). A full scale SMS has been implemented including all key processes. These include Policy and Objectives; Risk Assessment and Management (hazard identification and mitigation methods); Performance Monitoring (auditing, reporting system, investigation and change management); and Promotion (communication and training activities). The SMS as a management tool undergoes continuous improvement to and assessment of the overall level of safety 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 FOCA. GA received its initial Aerodrome Certification in December 2006 and was successfully recertified, according to ICAO standards and FOCA requirements, in November 2010 and November 2013. The Aerodrome Certification is valid for three more years with a recertification audit planned for 2016. 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

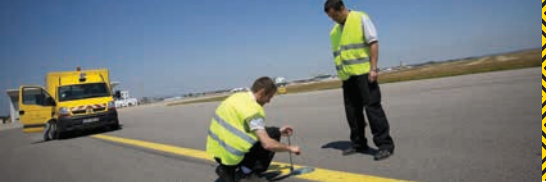
4.1 Describe your airport's programme to control FOD in terms of:
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Runway inspections are carried out six times a day. All aircraft positions are swept once a day. The apron is swept once time a week. The links are swept once time a week. The taxiways are swept once a week and the runway is swept once a month, or on request. All positions are checked for FOD before arrival and on departure of 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 includes: alternating yellow lights installed at CAT I holding points (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; illuminated red stop bars are installed at all CAT II/III holding points (used only in LVC); and 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 (Levels 1 and 2) based on Park-Air with Sensis multilateration 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 and Z), wig-wags have been installed. Due to proximity between the runway and the apron, stop bars on taxiways C, D and 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 programmes for drivers are in place (apron and 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 incidents on the manoeuvring area are reported and analysed by the Safety Office according to the directives of the Swiss regulatory authority (FOCA) 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 predominate: grass cut to a height of between 15 and 20cm; 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; and building and infrastructure adaptation.
6.1 Do your staff attend recognised bird control training courses?
Yes, the staff attend specific courses but also participate in special wildlife management training courses trough the Airtrace training centre, including: International Master's programme for Wildlife Hazard Prevention Specialists; International Bachelor's programme for Wildlife Hazard Prevention Agents; Introduction to Wildlife Hazard Prevention Course; and 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 9mm), whistling cartridges (6 and 9mm), mid-range exploding cartridges (26.5mm), long range silent, then exploding, rockets (Lacroix Capa) discharged from revolvers, bird scaring laser (handheld), acoustic broadcasting of natural and synthesised distress calls (mobile recorder and speaker, in the car), 30 stationary units of electronic generators – Efbitech 300W – and two units mobile, fixed on a trailer, bird strike prevention vehicle fully equipped with net, cage, disinfectant and 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 (Airport Wildlife Hazard Management (AWHM) software). A general report including all the activities of the wildlife hazard prevention unit is published every two year. 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 centralised and recorded electronically in a daily report. All data is available at any time. Once a week, the environmental engineer in charge of the Wildlife Management Unit examines the daily reports and inscribes the specific 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 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: Command vehicle; Ford; 4X4; 2012. Headquarters vehicle; Ford; 4X4; 2012. Duty Officer's vehicle; Ford; 4X4; 2011. PCI 'transmission' vehicle; Mercedes; 1992. Fire Duty Officer's vehicle; Mercedes; 4X4; 1997. Transport and escort vehicle (nine seats); Volkswagen; 2011. Escort vehicle; Smart; 2004. Transport and escort vehicle Opel; 2007. Headquarters vehicle; Suzuki; 4X4; 2006; Extinguishing vehicle; Rosenbauer; MAN; 12,500l water, 1,500l extract; 2005. Extinguishing vehicle; Rosenbauer; MAN; 12,500l water, 1,500l extract; 2000. Extinguishing vehicle, snozzle type; Rosenbauer; MAN; 11,000l water, 1,500l extract, 250kg pulver; 2008. Extinguishing vehicle; Rosenbauer; MAN; 12,500l water, 1,500l extract; 2003. Emergency stairs; Iveco; 1998. Extinguishing vehicle; Vogt; Mercedes; 4,000l water, 500l extract, 205kg pulver; 2004. Ambulance; Mercedes; 2012. Ambulance; Mercedes; 2013. Ambulance; Ford; 2013. Berce sanitary; Hänni; 2000. Berce foam; Vogt; 2004. Tonner/Pioneer; Rosenbauer; MAN; 2,500l water; 2012. Replacement vehicle Saturne; Dodge Ram; 4X4; 2001. Loading vehicle for Berces; Mercedes; 8X8; 2000. Berce ground carpet; Deschamps; 2002. Aircraft recovery; Hänni; 2002. Rescue boat with two engines of 130hp (two nacelles of 65 seats each); Boston; 1994. One nacelles fixed on the helicopter; 1999. Three nacelles of 65 places each reserve SSA; 1999. Reserve water tow; 25,000l; 2002. DCH; Mercedes; 2012. Compressor Atlas Copco XAS 55; 1985. Projector with auxiliary engine; Teklite; 2002. Projector with auxiliary engine; 2002. Projector with auxiliary engine; Luxomobile; 1985. Chemical container; 2006.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Extinguishing vehicle and emergency stairs.
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-15 April.
8.2 Average annual days of snow: 34 days.
8.3 Average snow depth: 8cm.
8.4 Maximum snow in 24 hours: 27cm.
8.5 Annual number of days of de-icing activities: 115 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift?
3x Command Personnel, 3x command vehicles, 18x snow removal runaway and taxiways, 18x snow removal apron, 4x snow removal line, 2x friction measurement, x4 maintenance (and 2x standby), 4x snow removal access roads.

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): Equipment for snow removal on runway and taxiway: Sweeper blower Jetbroom 8.40m, Boschung, 9 units; sweeper blower Jetbroom 6.40m, Boschung, 2 units; sweeper blower Jetbroom and spreader 6.40m, Boschung, 1 unit; snow blower, Rolba, 3 units; solid liquid spreaders, Boschung, 3 units; friction tester, Saab, 2 units; trucks with blades and sweeper blowers, Mercedes-Schörling, 2 units. Equipment for snow removal on other surfaces: Small snowplough with spreader, Boschung – reform, 4 units; snow blower, Rolba, 3 units; small snow brushes, Boschung, 4 units; tractor with pusher blades, 6 units; trucks with blades, 5 units; haul truck, 35 units; loader, 7 units; blower, Rpm-Tech AF1, 1 unit; tractor with blade for runway light, New Holland, 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:
1. Runway; 2. Taxiways; 3. Apron South and Apron North, 'General Aviation'; 4. Parking area and hangars.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance:
Runway: Vehicles form a V and 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 blades and sweeper-blowers push the snow to the edge of the taxiway. Apron: Vehicles are aligned diagonally and trucks equipped with snow blades and sweeper-blowers push the snow from the edges to the centre of the apron. Loaders then 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 RWY 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 2012-2013 as follows: For RWY and TWY – Safeway KF Hot, 170,000l, Safeway SF, 10 tons. For aircraft – Glycol type 1, 603,687l, Glycol type 2, 208,245l, Glycol type 4, 609,435l.
12.2 Comment on storage capabilities of the chemicals which you use: 175,000l of Safeway KF Hot in tank, 40 tons 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 on de-icers.
12.5 Have you employed any special means to economise on chemical use? Since three seasons ago, the quantities of product applied are optimised according to the weather (temperature and humidity). Each sprayer is equipped with the Boschung Thermomat system that spreads the chemical after defined curve and the pavement temperature. Handling agents 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 has been 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 sensor to simulate freezing point and passive sensors for pavement temperature and humidity) that are installed on the runway in three locations, coupled with two weather stations on each end of the runway. Those sensors and weather stations report to an Airfield Services Supervisor, which is also always informed about weather forecasts (Meteosuisse) and levels of runway de-icing fluids. The sensor and the weather station equipment are 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: From what we can see, the system provides a good 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). Glycol absorbers: Sweeper and absorber, Boschung 7000, 1 unit; sweeper and absorber, Bücher 8000, 1 unit; sweeper and absorber, Boschung Jetbroom, 2 units.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? 2x 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 send 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.
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 four Boschung Jetbroom sweeper blowers with snow blades and one extra rotary snowplough. We have also bought two GPSs to guide the snow plough during the cleaning of the runway and runway edge lights.
16.4 Do you have any winter services equipment which 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): Designations: Change from 13/31 to 12/30 on 14 November 2013; 12/30, 03/21. Dimensions: 12/30: 2,986x46m; 03/21: 1,825x45m. Runway 12 landing threshold displaced by 243m; Runway 03 landing threshold displaced by 166m. Runway 12: TORA: 2,986m; TODA: 3,170m; ASDA: 2,986m; LDA: 2,743m. Runway 30: TORA: 2,986m; TODA: 3,075m; ASDA: 2,986m; LDA: 2,986m. Runway 03: TORA: 1,905m; TODA: 1,999m; ASDA: 1,905m; LDA: 1,825m. Runway 21: TORA: 1,905m; TODA: 2,147m; ASDA: 1,991m; LDA: 1,905m.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 12/30 – Code 4E, Precision Instrument Cat I. Runway 03/21 – 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 Glasgow Prestwick Airport (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 FOD BOSS. 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. Enclosed skips. 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

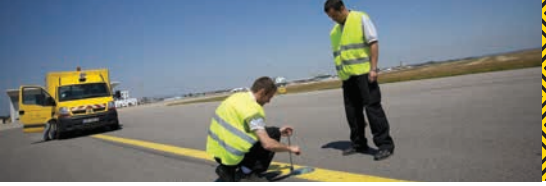
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Aircraft and vehicle movements are controlled by GPA Air Traffic Control unit, enhanced taxiway markings used at some hold points (see item 5.4).
5.2 Are any design or engineering changes being undertaken/required 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 (ASAT) 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 larvae; weed killing; constant monitoring and disturbance; reduction of wet area; culling; enclosed skips; 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 does 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 operate the hazard system around the following policy documents: Bird & Wildlife Hazard Control Plan; Bird & Wildlife Hazard Risk Assessment; 13km survey document. These documents are reviewed and updated 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, 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, we took advice from Scottish Natural Heritage and a local registered stalker, we also improved fencing at identified risk areas.

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 four appliances: Carmichael Cobra; 6X6; 10,000l water, 1440l foam/1x Javelin, 10,000l water, 1181l 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.
8.3 Average snow depth: Less than 100mm.
8.4 Maximum snow in 24 hours: 250mm.
8.5 Annual number of days of de-icing activities: 2009 – 44 days; 2010 – 16 days; 2011 – 7 days; 2012 – 18 days.

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 carryout snow/ice duties. The Fire Station staff cover the runway & taxi-way areas. The Ground Services department carries out snow/ice duties within the apron and walkway area. They have trained persons on shift at any time with 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): High speed brushers, Sicard, 6 units; dedicated, airport-owned county tractors, 5 units; leased tractors for snow clearing, 3 units; runway surface de-icing rigs, 2 units (one drivable, one towed by tractor; multi-car de-icing motorised vehicle, 1 unit; snow blowers, 2 units; aircraft de-icing units, 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. Runway 12/30 and taxiway; 2. Aprons Alpha and Bravo; 3. Remote aprons; 4. Runway 21/30 and taxiway.
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? 1 to 2 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: 45,000l capacity pump feed calibrated tank.
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.

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.
14.3 Is glycol recovered? If so, please state methods: No.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Mu-meter used for maintenance purposes only (not used in winter conditions).
15.2 Have you any comments on the reliability of friction indexes? Adopted CAA Surface Friction Assessment Table for reporting runway information to aircrew after participating in the CAA trials 2010-2013.

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.

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: (17C / 35C) TORA 17C: TODA 17C: TORA 35C: TODA 35C. Dimensions 3000x45m (left and right 7.5m shoulders) with shoulders 3000x60m, 3000m, 3060m, 3000m, 3000m. Grass runway: 17L/35R and 17R/35L. Taxiways: A, width 23m; B, width 23m; C, width 23m; D, width 23m; X, width 10m; Y, width 15m. Grass Runway: S1, S2, S3, S4, G1, G2, G3. Aircraft Parking: 13 Positions for A/C Cat. C other 4 Pos. Cat. D and 4 Pos. Cat. C 2 Positions A/C Cat. E 20 General Aviation Postions 12 Positions for Cat. A 6 Positions for Helicopter.
2.2 Landing aids for each RWY (e.g. CAT II): 35C: 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 audit from the BMVIT (Austria) about the SMS.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD: The control of FOD is done by the Deputy Operations Officer. He arranges the cleaning of the runway and taxiways with airplast sweepers. The apron is cleaned by means of a cleansing mat.
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, rolling hold. 35 C Cat II/III ILS.
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: Functions 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 Occurence 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 touches of other animals with aircraft and file this. We also send them to the authority.
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): Shot guns/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

7.3 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? 1 October-31 May.
8.2 Average annual days of snow: 15 days runway 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): ÖAF (6X6), 1993, PS 500, 9,000l water, 1,000l foam; Panther (8X8), 2004, PS 1000, 12,500l water, 2,000l foam, 500kg powder; ÖAF (4X4), 1998, PS 460, 5,000l water, 500l foam; ÖAF (4X4) 1990, PS 360, 2,000kg powder; Z8, 2010, PS 1000, 13,500l water, 1,650l foam, 500kg powder, 180kg CO2.

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 (17/35); 2. Taxiway A, B, C, D; 3. Apron; 4. Taxiway X, Y.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: 5 airblast sweepers for runs necessary for runway sweepers.
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: 100,000kg Harnstoff UREA, 9,000kg, 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 a 12,000l capacity. For aircraft de-icer we have niroster tanks with a 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°, under -6° and below it is mixed with liquids (Safeway KA).
12.4 Have you experienced any corrosion problems with de-icers? Urea and the Safeway KA is very aggressive to metal parts.
12.6 Do you have any other comments on experience with chemicals? Ice warning systems.
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.
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 economy control use, measuring action ions.

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: 1x Stalder Merceses 1820, 1x Stalder Merceses Atego 18, 1x Eisbär Steyr 19S24.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing 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 units 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 like to change to airplast sweepers with larger facilities less time is taken 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 our airplast sweepers (Buch Schörling P17) with 3 meters working width to airplast sweepers with a 5.5m 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: 491,300 m2; 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 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 sub-committees 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 is using the phraseology agreed on by ADV - airports for ground vehicles operating on runway systems.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

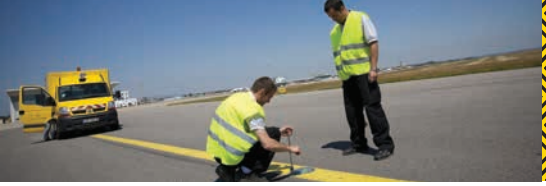
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Part of regular training for all people designated to work on ramps before they start to work.
b) Inspection by airline, airport, and airplane handling agency personnel: Regular inspections are carried out as part of the mandatory ICAO airfield inspections 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.): N/A.

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/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. Additional Runway Guard Lights have been installed at critical intersections.
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 incl. 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 realise 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 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. "Hot Spot" map 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 craws 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… 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 M2000 (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. Up to 25 additional persons subcontracted. Up to 5 persons for cleaning and sweeping by hand in areas where machines cannot operate (e.g. air bridges, remote boarding gates and the close vicinity of aircraft on stand).

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 sweepers, 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 sweepers, 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 10 snows ploughs and sweepers will clear the RWY in one direction forming a diagonal line. Firstly the mainly used TWY`s 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 RWY.

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: Aviform L50 1.181m3, solid: Aviform S- Solid 822t, sand 50m3. Good results at temperatures up to –15° C, 3 days in dry weather conditions.
12.2 Comment on storage capabilities of the chemicals which you use. Sand-silo: 320 m3. Aviform L50 liquid: 350,000 l.
Aviform S- Solid / LNT „Airside Solid: 40/20 60 "big bags" 750 kg each in store.
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 suspect 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, manufacturer: "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 which 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): RWY 09/27: 2,800x60m, 168,000sqm; TORA 2,800m. TWY 'A' width: 20m. TWY 'B' width: 28m. TWY 'D' width: 23m. TWY 'E' 1, 2, 3 width: 23m. TWY 'F' width: 35m. TWY 'S' width: 50m. Total apron area: 153,495sqm, 40 parking positions.
2.2 Landing aids for each RWY (e.g. CAT II): CAT I lighting aids: RWY 09 – simplified approach lighting system 'cross' with axis length 420m and bar 300m from THR. LIH; RWY 27 – precision approach category I lighting system (Calvert system). LIH. Radio aids: RWY 27 – ILS instrumental landing system and glide path, meteorological Vaisal's system, D-VOR.

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 by Duty Officer is mandatory for all employees, and is 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 positions is performed before every movement by the Marshaller and the 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 Office. Responsibility of co-ordination falls to the 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 com-






ments): We do not have any software solutions. FOD control is completed by using OLH-4500 'Madro'/runway sweeper and visual checks.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The method we use is SMGCS and visual observation of the manoeuvring area by TWR.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? A tight fence round the area of the airport, visual observation and cameras monitored by Airport Security, and thermographic cameras.
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): We do not have any safety devices yet.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: We use warnings such as road signs, light signs and high-visibility vests.
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 mandatory training in behavior and awareness in the operation 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? Yes there have been incidents, which were reported to the Duty Officer and Safety Manager. SM and the Internal Commission are responsible for investigation in such cases.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: We reduce the attraction of the airfield to birds by many different devices, such as recorded distress calls, pyrotechnics, shotguns, mowing the grass to the right height, and securing buildings in the winter before bird set up nests.
6.1 Do your staff attend recognised bird control training courses? We attend such bird control training courses every year.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? The Operations team (Marshall, Duty Officer and Falconer) deals with this problem continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): 3x ZON EL08 electronic startling devices, 11x Baflo 9 stun guns, 3x BG Super Pro AMP sound devices, 1x SCARECROW portable sound device.
6.4 Do you carry out a bird strike risk assessment? We carry out a bird strike risk assessment every month, and bird clearance before every landing/take-off respectively.
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 falconer reports daily bird control activities.
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 any significant problems with wildlife such as deer or wild boars.

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; Rosenbauer; 4X4; r. 6,200l; 2009. Panther; Rosenbauer; 6X6; r. 12,500l; 2009. Barracuda; Boughton; 4X4; r. 5,500l; 1990. Barracuda; Boughton; 6X6; 10,000l water; 1990. Barracuda; Boughton; 6X6; 12,000l water; 1994. Barracuda; Boughton; 6X6; 12,000l water; 1994.
7.2 Future developments – are there plans to purchase or dispose of any equipment? We plan to purchase two Panthers, 6X6, 12,500l water, in 2015.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not have simulators, we send our rescuers to England.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? An our airport the period of winter readiness is from 15 October-15 April.
8.2 Average annual days of snow: 60-70 days.
8.3 Average snow depth: 6.45cm.
8.4 Maximum snow in 24 hours: 10-14cm.
8.5 Annual number of days of deicing activities: 65 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? We have 13 winter services personnel 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 snowplough 6m, 8 units; runway snowplough 8m, 3 units; road snowplough 3m, 2 units; runway sweeper, OLH 4500 'Madro, 3.5m, 5 units; runway sweeper, OLH 3850 Hydrog 3.5m, 2 units; runway sweeper, OVERAASEN RS 400 5.5m, 4 units; rotor snow blower, Boschung, Rolba 1000, Zil, 3 units; spreader, 1 unit; de-icing sprayer, Daman FEA 24m, 6,000l liquid, 4,000kg solid, 1 unit; de-icing sprayer 18m, 7,000l, 2 units; excavator, 1unit; agricultural sprayer 15m, 1000l, 1 unit; agricultural tractors, 4 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: Priority of snow clearance in order is as follows: 1. Runway 09/27; 2. Taxiway 'B'; 3. Taxiway 'E3'; 4. Taxiway 'A'; 5. Taxiways 'E1, E2''; 6. Taxiway 'F'; 7. Apron 1; 8. Apron 3.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? After moderate snow we are ready to achieve 'black top' on the runway within 5-10 minutes. After strong snow, we are ready to achieve 'black top' on the runway within 25-30 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: KCH S-Solid – flowing product – and Aviform L50 – liquid product. Response time is five minutes and holdover time is six hours. During the last season, we used 140 tons of Aviform and 10 tons of KCH S-Solid.
12.2 Comment on storage capabilities of the chemicals that you use: Liquids are stored in containers of 60,000l. Flowing product are stored in bags with a capacity of 50kg.
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? We have not any corrosion problems with de-icers (CLEARWAY), only urea (carbamide) is the aggressive and corrosive. Due to corrosion this chemical is used only for inside areas of the airport, ex. parking, technical roads etc.
12.5 Have you employed any special means to economise on chemical use? Application controls the amount of fluid on the surface.
12.6 Do you have any other comments on experience with chemicals? During strong freezing rain and drizzle the most efficient chemical is liquid urea (carbamide) but only to -4oc. Due to aggressive corrosion we do not apply in on runway and taxiways.
12.7 Do you use other chemicals or sand on operational areas? No, we do not use other chemicals or sand on operational areas.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: We do not have any ice warning systems.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? We would like to purchase an 'ICE ALERT' ice warning system by Findlay Irvine.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: None.

14. AIRCRAFT DE-ICING

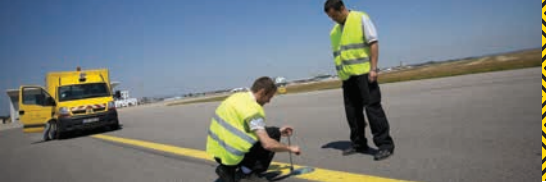
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Yes, our airport directly provides aircraft anti/de-icing operations. We use liquid chemicals for aircraft anti/de-icing, including CLARIANT SAFEWING MP II FLIGHT, Type II and CLARIANT SAFEWING MP I 1938 ECO, Type I. For anti/de-icing aircraft we use special vehicles. The Kitokorii EFI 2000, 2 units, and the Kiitokori EFI 4000, 1 unit.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We have special stands for anti/de-icing aircraft. Aircraft de-icing is carried out on Apron 1 – stands 1-3, 16-18 and 24-29, next to TWY 'F' – stand 40, and also on Apron 3.
14.3 Is glycol recovered? If so, please state methods: We do not recover glycol.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? We usually use two or three friction testers: SAAB Friction Tester, BOWMONK AFM 2 Airfield Friction Tester and GRIPTESTER 210.
15.2 Have you any comments on the reliability of friction indexes? All our comments are included in each SNOWTAM.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? The introduction of sanding on the new concrete apron.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: We plan to purchase two Panthers, 6X6, 12,500l water, in 2015.
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 SMS full implementation.

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: As planned in year 2012 in 2013 we started with the first step of implementation of so called test high grass management. In 2013 we made only on grass cutting to the floor at the end of JUN. Beside that we start with the process of monitoring the rodent population on the airfield and performed the rodent population control, using the allowed rodenticide with acceptable low risk for environment and birds of prey, which are protected by law. The results for year 2013 indicating an essential reduce of confirmed bird strikes of bird species from the red list of the bird strike assessment analyse (buzzard).
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, Scarecrow (Premier) and in 2014 the green laser (Aerolaser).
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 – 6x6, year of manufacture:2014, 12500 l water, 1500 l foam, 250 kg dry powder, pump Rosenbauer capacity 6000 l/ min; 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 agreement for 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 Mercedes 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: 100 t UREA, 5000 l of potassium formiat, 2 t calcium acetate. 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)? Plan for 2014.
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? Skoda Octavia ASFT, Renault Kangoo STFT, Saab friction tester (reserve).
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/compacted snow. For slush/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.

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: Total length/width: 3316 x 45, TORA: 3159, TODA: 3311, ASDA: 3233, LDA: 2766; RWY 26L: Total length/width: 3312x45, TORA: 3255, TODA: 3399, ASDA: 3040, LDA: 2703; RWY 08L: Total length/width: 2565 x 45, TORA: 2565, TODA: 3040, ASDA: 2565, LDA: 2234; RWY 26R: Total length/width: 2565 x 45, TORA: 2565, TODA: 2703, ASDA: 2565, LDA: 2148. Remarks: 26L has a 150m 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 427m. The 26R landing threshold is displaced 417m. A maximum weight limit of 562,000 kg 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 III(B); RWY 26L: CAT III(B). Runway 08L/26R is a non-instrument runway and will only be used when Runway 08R/26L is temporarily non-operational by reason of maintenance or incident.

3. SAFETY MANAGEMENT SYSTEMS

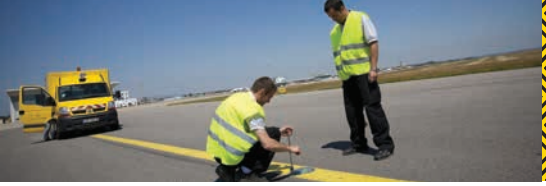
3.1 The ICAO Manual on Certification of Aerodromes specifies that: "The aerodrome operator shall establish a Safety Management System for the aerodrome." Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Gatwick 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 May 2013 found no issues with the requirements of the Aerodrome Licence. GAL was PAS55 certified – Asset Management System – with effect from October 2012. PAS55 annual audit carried out during October 2013.

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. Gatwick Airport Directive – Airside Safety Training lists FOD avoidance and clearance as one of the items which must be included in individual's induction training. 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, which includes the use of magnetic bars, in addition to manual FOD removal. FOD bins are provided on aircraft stands for collection of small items. There is a process in place for regular emptying of the FOD bin. 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. Gatwick Airport provides a central recycling point. FOD bags have recently been introduced for use by Airfield Operations staff whilst carrying out airfield inspections.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Any FOD items which are too large to be placed in the FOD bins, should be reported to Airfield Operations, who will arrange collection/removal. Any FOD issues are raised at quarterly Airside Safety Group meetings chaired by GAL and attended by third party airside companies. FOD walks are undertaken as part of the Airside Safety Group meetings, approximately every six months. 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 requires 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 intends to roll this out across the whole airport during 2014.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): An additional midnight multi-vehicle surface inspection is carried out daily by Airfield Operations. This includes the use of specialist sweeper vehicles.

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) has been made on the RETs. 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. 'Start of TODA' signage is installed on Runway 08L/26R. When 08L/26R is not operational, the 'Start of TODA' sign is covered to make it not visible to pilots. Runway threshold indication light system 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? Gatwick Airport Directive – Airside Driving and Vehicle Operation details the three types of airside driving permit: A Zone – Aprons, Stands and Airside roads; M Zone – the Manoeuvring Area excluding Runways, but including Taxiways; M + R





Zone - the Manoeuvring Area including Runways. Driver trainers must be registered and approved by the Gatwick Airfield Operations Training Manager. They must use training materials provided by Gatwick Airport to ensure consistency. Specialist airfield driving maps, clearly showing the manoeuvring area (maps updated every six 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. National Air Traffic Services (NATS) have delivered a number of Airfield Resource Management courses. NATS provides an airline briefing pack for airlines new to Gatwick.
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 or procedures, which may need to be addressed to try and prevent a recurrence. All runway incursion investigations include a playback of RTF comms and ground radar images 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. Gatwick Airport has a nominated 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 has 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 three 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: a) The presence of birds on the airfield and in the surrounding area is minimised; b) An environment not conducive to the presence of birds is created; c) Birds on the airfield are detected and dispersed; d) Warning can be passed to aircraft and ATC about the presence of flocks of birds on the airfield; e) 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. Aircrew 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 aircrew 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.
6.2 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, netting of open water, ie. ponds.
6.4 Do you carry out a bird strike risk assessment? Yes – via AHVLA (Animal Health and Veterinary Laboratories 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 – use of Ultima electronic database.
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: Fire 1: Mitsubishi Shogun; Fire 3: Panther, water 12,500l, foam 1,500, monitor discharge rate – 5,000l/min, Monnex dry powder 70kg, Monnex discharge rate – 1.35kg/sec; Fire 4: Panther, water 12,500l, foam 1,500, monitor discharge rate – 5,000l/min, Monnex dry powder 70kg, Monnex discharge rate – 1.35kg/sec; Fire 5: Panther, water 12,500l, foam 1,500, monitor discharge rate – 5,000l/min, Monnex dry powder 70kg, Monnex discharge rate – 1.35kg/sec; Fire 6: Panther, water 12,500l, foam 1,500, monitor discharge rate – 5,000l/min, Monnex dry powder 70kg, Monnex discharge rate – 1.35kg/sec; Fire 7: Panther, water 12,500l, foam 1,500, monitor discharge rate – 5,000l/min, Monnex dry powder 70kg, Monnex discharge rate – 1.35kg/sec.
7.2 Future developments – are there plans to purchase or dispose of any equipment?
A high access platform has been 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.
8.3 Average snow depth: 1-2cm.
8.4 Maximum snow in 24 hours: See below.
8.5 Annual number of days of de-icing activities: Pavement anti-icing/de-icing – 37. Winter 2012-2013 – four major occasions of wet and dry snow mix, with a maximum depth of 6cm. Winds also caused one occasion with drifting snow.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? During Weather State Clear, when Met Office does not forecast snow, and Weather State 1, when Met Office forecast snow in the next 7 days but not expected to accumulate, no disruption to the operation of the Airfield predicted – minimum staff resource on duty (12 hour shift): 1x Airfield Duty Manager, 4x Airfield Operations Controller, 4x Airfield Operations Support Team; (on call): 1x Airfield Operations Senior Manager. During Weather State 2 – Met Office forecast snow in the next 7 Days and expected to accumulate which may cause disruption to the operation of the airfield – minimum staff resource on duty (12 hour shift): 1x Airfield Duty Manager, 4x Airfield Operations Controller, 4x Airfield Operations Support Team; (on call): 2x Airfield Operations Senior Manager, 10x Airfield Duty Manager, 28x Airfield Operations Controller, 24x Airfield Operations Support Team, 20x Airport Fire Service (Additional to Fire Cover), Transport Engineering Technicians, 80x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting duties, Bucket Loader Operators, Tipper Driver. During Weather State 3 – Met Office forecast snow in the next 24 hours and expected to accumulate which may cause disruption to the operation of the airfield – minimum staff resource on duty (12 hour shift): 1x Airfield Duty Manager, 4x Airfield Operations Controller, 4x Airfield Operations Support Team; (on call): 4x Airfield Operations Senior Manager, 10x Airfield Duty Manager, 28x Airfield Operations Controller, 24x Airfield Operations Support Team, 20x Airport Fire Service (Additional to Fire Cover), Transport Engineering Technicians, 80x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting duties, Bucket Loader Operators, Tipper Drivers. During Weather State 4 – Met Office forecast snow in the next 2 hours and expected to accumulate which may cause disruption to the operation of the airfield – minimum staff resource on duty (12 hour shift): 1x Airfield Operations Senior Manager, 2x Airfield Duty Manager, 8x Airfield Operations Controller. 8x Airfield Operations Support Team, 10x Airport Fire Service (Additional to Fire Cover), 50x Office Volunteers (Polar Bears), Transport Engineering Technicians; (on call): 130x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting duties, Bucket Loader Operators, Tipper Drivers. During Weather State 5 – snow is falling and accumulating but NOT likely to lead to airfield disruption and can be safely and efficiently managed by the Airfield Operations team – minimum staff resource on duty (12 hour shift): 2x Airfield Operations Senior Manager, 2x Airfield Duty






Manager, 8x Airfield Operations Controller, 8x Airfield Operations Support Team, 10x Airport Fire Service (Additional to Fire Cover), 50x Office Volunteers (Polar Bears), Transport Engineering Technicians; (on call): 130x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting Duties, Bucket Loader Operators, Tipper Drivers. During Weather State 6 – snow is falling and accumulating in sufficient amounts to cause disruption to the operation of the Airfield – minimum staff resource on duty (12 hour shift): 2x Airfield Operations Senior Manager, 2x Airfield Duty Manager, 8x Airfield Operations Controller, 8x Airfield Operations Support Team, 10x Airport Fire Service (Additional to Fire Cover), Transport Engineering Technicians, 50x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting Duties, Bucket Loader Operators, Tipper Drivers; (on call): 130x Terminal & Office Volunteers (Polar Bears). During Weather State 7 – snow has stopped falling and accumulating, but snow-clearing duties continue on the Airfield. Some disruption possible – minimum staff resource on duty (12 hour shift): 1x Airfield Operations Senior Manager, 2x Airfield Duty Manager, 8x Airfield Operations Controller, 8x Airfield Operations Support Team, 10x Airport Fire Service (Additional to Fire Cover), Transport Engineering Technicians, 50x Terminal & Office Volunteers (Polar Bears), Contractors arranged through Dyer and Butler, Dyer and Butler staff for escorting Duties, Bucket Loader Operators, Tipper Drivers; (on call): 130x Terminal & Office Volunteers (Polar Bears).

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: 9x Overaasen RS400 – Mercedes Actros 4x4 Runway Sweepers; 2x Oshkosh Snow Cutters; 2x Liquid Anti/De-icer Spreader; 1x Constant Friction Measuring Equipment. ASFT. Taxiway system: 9x Schorling – Unimog 4x4 Runway/Taxiway Sweepers; 3x Liquid Anti/De-Icer Spreader; 1x Combi Liquid/Solid Anti-De-Icer Spreader; 1x Rolba Snow Cutter. Stands, roads and other airside areas: 4x Small Liquid Anti/De-Icer Trailer Spreader; 12x Multihog Brush/Plough/Anti-De-Icer Spreader; 24x John Deere Tractor Brush; 12x John Deere Tractor 4 meter plough; 2x John Deere Tractor Sulky Solid Anti-De-Icer Spreader; 4x John Deere Gator Plough/Solid Anti-De-Icer Spreader; 4x Kabuto Plough/Solid Anti-De-Icer Spreader; 12x Pedestrian Snow Plough & Cutter. Spare: 5x Schorling Taxiway/Runway Sweeper. General equipment: 1x JCB Bucket; 1x Fuel Bowser; suitable amount Snow Shovels & Brooms. Transport Engineering and Airfield Duty Manager will maintain a detailed list of the vehicles and equipment available for snow clearance and will maintain the following minimum availability when Weather State 2 is promulgated: 14x Runway Sweepers (Overaasen or Schorling); 1x Snow Cutters; 4x Runway/Taxiway Anti/De-Icer Vehicles; 2x Small Anti/De-Icer Trailer Spreader; 8x Multihog Brush/Plough/Anti-De-Icer Spreader; 18x John Deere Tractor Brush; 8x John Deere Tractor 4 meter plough; 1x John Deere Tractor Sulky Solid Anti-De-Icer Spreader; 2x John Deere Gator Plough/Solid Anti-De-Icer Spreader; 2x Kabuto Plough/Solid Anti-De-Icer Spreader; 8x Pedestrian Snow Plough & Cutter.

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(s) in use, including rapid exits and starter strips; 2. All runway holding areas, taxiways and aprons that are to be used; 3. 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 3cm. 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: Current storage facilities on the Airfield at Gatwick Airport are as follows: Clearway3/Brothertons Safegrip+ – 170,000 litres; Konsin – 340,000 litres; Clearway 6S/Brothertons Aviform6 – 25,000 kg; Grit 20,000 kg.
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: Recently upgraded Vaisala system to provide three 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: 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 third parties, ie. 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. A dedicated remote area has been identified in the 2013/2014 Snow Plan, which will be used at the discretion of the Snow Co-ordinator during adverse weather conditions. Only airlines/de-icing companies that have submitted Risk Assessments and Method Statements will be allowed to utilise this facility.
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 – additional snow clearing equipment: 1x Snow blower; 8x Multihog; 18x Track Master; 20x wide brush and plough kit; new control system for application rate on Multi-hogs.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: As above.
16.4 Do you have any winter services equipment that you would like to sell? No.

LONDON STANSTED

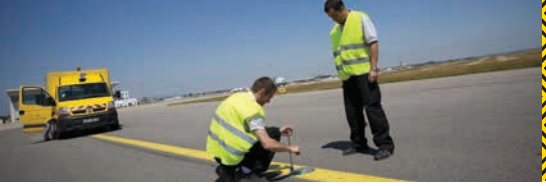
london stansted airport
PART OF M.A.G

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Stansted Airport Limited.

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 specifications: Runway width: 46m; shoulder width: 7.6m; area: 140,208sqm (not including shoulder); stabilised grass shoulders: 7.5m; area: 186,538sqm (including paved shoulders). Runway 04: PCN: 86/R/C/W/T; TORA: 3,046m; TODA: 3,338m; LDA: 2,748m. Runway 22 – as Runway 04; TORA: 3,049m; TODA: 3,316m; LDA: 3,049m. Taxiway specifications: Taxiway: Foxtrot; width: 23m; surface: asphalt; strength: 80/R/D/W/T. Taxiway: Golf; width: 27m; surface: asphalt; strength: 67/R/D/W/T. Taxiway: Hotel; width: 23m; surface: concrete; strength: 78/R/C/W/T. Taxiway: Juliet; width: 23m; surface: concrete; strength: 78/R/C/W/T (data extracted from UK AIP AD 2 EGSS).
2.2 Landing aids for each RWY (e.g. CAT II): Runway 04/22: Full ILS system to CAT III comprising: Glidepath & Localiser aerials; DME (distance measuring equipment); IRVR (Instrumented Runway Visual Range





equipment); full CAT III ground lighting including SALS (Supplementary Approach Lighting System), full 5-bar Calvert Approach Lighting (RWY 22)/5-bar abbreviated 780m system for RWY 04, Full runway lighting to meet CAT III requirements, controllable taxiway lighting to meet CAT III requirements; Ground Movement Radar together with the RIMCAS (Runway Incursion Monitoring & Collision Avoidance System); ASMGCS (Advanced Surface Movement Guidance Control System); 24hr Runway Guard Bars at each runway entry point.

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? Stansted Airport Limited (STAL) is a progressive and proactive organisation that cares for the environment and wellbeing of every employee and those who may be involved in, or affected by, any of its operations. It strives to run the airport safely, securely and responsibly and undertakes to comply with statutory safety obligations by: Maintaining its Safety Management structures and appropriate resources that support the development of a positive safety culture within STAL; fully complying to all Safety legal and other requirements, recognising that all incidents are preventable; maintaining and improving airport security for its passengers and employees; enabling the effective communication of Safety information to all employees and stakeholders; continually improving its Safety performance; assigning clear responsibilities for health, safety, security and environmental management; enhancing its Business Continuity planning, procedures and resilience; optimising the economic benefits of the airport, whilst limiting its impact on the environment and reducing its impact on climate change; striving for 'Vision Zero' in everything STAL does to 'Make Safety Personal'.
In order to achieve this, STAL's Safety Management Systems are built on seven core values and principles: LEAD: Demonstrate strong 'Leadership' through governance structure to ensure clear understanding and assurance that everyone is responsible for Safety; CREATE POLICY: Create Policy to re-affirm commitment to Safety and set stretching objectives and targets for all levels of the business which will reduce impact on the environment, prevent pollution and minimise injuries and work-related ill health. ORGANISE FOR HSE: Organise for Safety by maintaining accreditation to OHSAS 18001: 2007 and ISO14001: 2004, and ensuring the continual improvement of systems. All employees and those working on STAL's behalf will understand their responsibilities. Competency is ensured through effective and targeted training programmes that provide the knowledge and skills to support the Safety Management process; RISK MANAGEMENT: Have a robust Risk Management programme in place to identify, assess and control significant Safety risks; PLAN & IMPLEMENT: Plan and Implement pragmatic procedural standards across the business to ensure legal compliance and identify all operations that have associated Safety risks to ensure they are controlled; work in partnership with key stakeholders to deliver best practice Safety solutions based on participation and consultation supporting STAL objectives; manage our assets and equipment responsibly to ensure they function safely and with minimal environmental impact, whilst meeting core operational requirements; protect all Company data and information in accordance with Data Protection legal requirements and our Information Security policies; MONITOR & AUDIT: Monitor and Audit our Safety performance by recording and reviewing our incidents and our impact on the environment, analysing trends and continually improving our performance; publicly report on our Safety performance and plans though our Corporate Responsibility Report; REVIEW: Review this policy and the effectiveness of our management system on an as required basis. This SMS has been running in its current form since June 2003, and is a living system that is continually under review via an internal audit/review process accompanied by periodic external audits.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The AOA (Airport Operator's Association) driver training programme, which all staff across the airport complete in order to drive airside, includes specific training around FOD hazards and local management procedures. Each airside company has environmental responsibilities in accordance with our own DN's (Director's Notices).
b) Inspection by airline, airport, and airplane handling agency personnel: All airlines and their associated agents have responsibilities for the management of FOD within their common user areas and have procedures and systems in place for the management of apron surface inspections and FOD removal. FOD checks are also covered as part of the turnaround checks process carried out by the Airside Operations Officers.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): STAL provides personnel and facilities for the sweeping of hardstanding surfaces (airside) including specialist equipment specifically for this purpose. This facility is provided on a 24-hour basis, and the team is internal to the organisation. FOD bins, general waste compactors, oil can disposal bins and waste oil containers are provided and managed between STAL and a contracted waste management company for all common areas.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Ground Handling Licences have been issued to companies working at the airport outlining their responsibilities, including those relating to FOD prevention.
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 specific systems or software solutions in place for the management of FOD at this time over and above the current management processes.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Positive control through the Air Traffic Services provider (NATS) via radiotelephony procedures including the use of the Surface Movement Radar, RIMCAS (Runway Incursion Monitoring and Collision Avoidance System), ASMGCS (Advanced Surface Movement Guidance Control System), and 24-hour Runway Guard Bars.
5.2 Are any design or engineering changes being undertaken /required to eliminate perceived hazards? We continue to review incursion risks through a formal review process and following any actual event investigations.
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): The Surface Movement Detection system in use at STAL is a Nova 9004 system which has been upgraded with a Parkair RIMCAS surveillance system. During 2010 ASMGCS was installed. This provides an improved control of all vehicles and aircraft on the manoeuvring areas.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Other than the standard signs and markings we do not have any specific innovative warnings or guards, another than additional signage in known hot spots.
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? NATS (National Air Traffic Services) in conjunction with STAL has held a number of formal forums and drop-in briefings around runway incursion awareness. The target audience has been pilots, handling agents, controllers and the like. This process is set to continue as new learning comes from the statistical data and any local incident reviews. There is also a quarterly Manoeuvring Area Safety Team chaired by STAL. Beyond these forums, the driver training packages contain content around incursion awareness for staff that operate on the manoeuvring areas. 'Runway' driving permits are only issued if the need is legitimate. All staff nominated to attend these specific driving courses are chosen after careful selection and sign-off process.
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? STAL has engaged a number of key airport companies in the area of runway incursion preventative measures and reporting. We have developed an incident review process whereby we share the high level details of all airside incidents with the airport community. The key objective of this process is that we all work towards introducing key learning points to reduce the probability of re-occurrences. We have for many years instilled a just culture amongst the airport community and see that a shared and open learning ethos improves reporting quality.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: STAL has a comprehensive Bird Hazard Management Plan (policy). Part of this plan includes our 'Habitat Management Policy' in accordance with CAP 772 (Civil Aviation Publication 772 – Aerodrome Bird Control) requirements. The Policy supports all of the recommended best practises in relation to the reduction of bird attractants by controlled methods, i.e. herbicide and insecticide treatment, together with the grass management process.
6.1 Do your staff attend recognised bird control training courses? All operational staff who have the responsibility for the control of bird and wildlife activities attend CAA approved courses, in areas of xoperations or management as part of their initial competency requirements and every three years thereafter in accordance with CAP 700 (Operational Safety Competencies) requirements. Further to this, all staff are required to hold Shotgun & Firearms licences issued by the Police Authority for the use of the pistols and shotguns which are owned by STAL and undertake an on-airport bird competency check.






6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? A bird controller is available continuously on a 24/7 basis. This is further supplemented by additional personnel from the Airside Team who have shared responsibilities.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): STAL currently utilise the following resources for the control of birds: 'Scarecrow' digital bird distress call units installed in all operations vehicles, 7 units; 2x 20 bore Revo double barrelled shotguns; 1x 0.410" calibre 'Hush Power' silenced single barrelled shotgun; 1x 0.22" calibre Single shot air rifle with scope; 4x 1.5" calibre 'Apsley' Flare pistols with 12 bore adaptors.
6.4 Do you carry out a bird strike risk assessment? STAL is audited annually by FERA (Food, Environment Research Agency, now AHVLA). Part of this process includes a review of the ongoing bird risk analysis and any specific actions relating to the risk factors identified. Further to this, the STAL Bird Coordinator will review the risk as required and will make adjustments to the daily operational control practises to mediate the changing situation.
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 duties are routinely logged by the operators in accordance with the requirements of the CAP 772 recommended practice.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Although we have had periodic sightings of other wildlife, ie. rabbits, hares and foxes, the risk factors have not yet required a specific management policy or formal action plan to be initiated. Close surveillance methods and the use of the existing controls have been deemed as adequate based on the current risks.

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: Current inventory: Land Rover Discovery (AE02 NVA); 4X4; 2001/2002. Land Rover Discovery (YF58 BTO); 4X4; 2008/2009. Scania Domestic (EO15 AYH); 4X4; 2001/2002. Scania Domestic (EU09 FJN); 4X4; 2009/2010. Scania Hoselayer (X447 NHJ); 4X4; 2000/2001. Scania ALP (Aerial Ladder Platform) (H105 UBD); 6X4. Rosenbauer Panther CA5 (YK12 CXP); 6X6; 11,200l water, 1,400 foam, 1x 250kg Monnex fixed unit fitted with 30m hose reel, a quantity of CO2; 2012. Rosenbauer Panther CA5 (YK12 CX0); 6X6; 11,200l water, 1,400 foam, 1x 250kg Monnex fixed unit fitted with 30m hose reel, a quantity of CO2; 2012. Rosenbauer Panther CA5 (YK12 CEJ); 6X6; 11,200l water, 1,400 foam, 1x 250kg Monnex fixed unit fitted with 30m hose reel, a quantity of CO2; 2012. Rosenbauer Panther HRET (YJ62 RHA); 6X6; 11,200l water, 1,400l foam, 200kg Monnex and 2x hand-held CO2 extinguishers; 2013. Rosenbauer Panther HRET (YJ62 OTC); 6X6; 11,200l water, 1,400l foam, 200kg Monnex and 2x hand-held CO2 extinguishers; 2013.
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? Our Fire Training Simulator is not presently 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? Winter readiness period is 1 November to 31 April (inclusive).
8.2 Average annual days of snow: Average 3-5 days over the past five years.
8.3 Average snow depth: Average 2-5cm snow depth per event.
8.4 Maximum snow in 24 hours: Maximum 20cm snowfall in 24 hours.
8.5 Annual number of days of de-icing activities: Throughout the winter readiness period we have on average 60 days.

9. WINTER ORGANISATION

9.1 How many airport-employed winter services personnel are available per shift? Average of 8 per shift.
9.2 How many sub-contracted winter services personnel are available per shift? 16-24 on average per shift, increasing to 50 during a sustained event.

10. WINTER EQUIPMENT INVENTORY

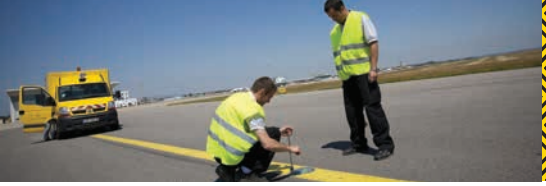
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): De-icer (DE-ICER 1), Scania, articulated liquid de-icer, Schmidt; de-icer (DE-ICER 2), Scania, articulated liquid de-icer. Schmidt; de-icer (DE-ICER 3), DAF 2300, articulated liquid de-icer, Küpper-Weisser; de-icer (DE-ICER 4), DAF 2700, articulated liquid de-icer, Küpper-Weisser; Head of Stand (DE-ICER 8), trailer liquid de-icer, Billericay Farm Services; de-icer (DE-ICER 9), trailer liquid de-icer, Billericay Farm Services; prime mover (snow clearance) (SNOW 1), Scania 114c, articulated plough/brush/blower unit, Overaasen RS200; prime mover (snow clearance) (SNOW 2), Scania 114c, articulated plough/brush/blower unit, Overaasen RS200; prime mover (snow clearance) (SNOW 3), Scania 114c, articulated plough/brush/blower unit, Danline DA2000; prime mover (snow clearance) (SNOW 4), Scania 114c, articulated plough/brush/blower unit, Overaasen RS200; prime mover (snow clearance) (SNOW 5), Scania 114c, articulated plough/brush/blower unit, Danline DA2000; prime mover (snow clearance) (SNOW 6), Scania 114c, articulated plough/brush/blower unit, Overaasen RS200; prime mover (snow clearance) (SNOW 9), DAF 2700, articulated plough/brush/blower unit, Danline DA2000; prime mover (snow clearance) (SNOW 11), DAF 2700, articulated plough/brush/blower unit, Danline DA2000; prime mover (snow clearance) (SNOW 14), DAF 2300, articulated plough/brush/blower unit, Overaasen SB90; snow blower (snow clearance) (BLOWER 1), SMI, specialist snow blower unit, SMI; snow blower (snow clearance) (BLOWER 2), SMI, specialist snow blower unit, SMI; snow blower (snow clearance) (Blower 3), Schmidt, specialist snow blower unit, Supra 50001; brush (snow clearance) (TRACTOR 1), Tractor, front mounted cylinder brush, John Deere – 6800; brush (snow clearance) (TRACTOR 2), Tractor, front mounted cylinder brush, John Deere – 6800; brush (snow clearance) (TRACTOR 3), Tractor, front mounted cylinder brush, John Deere – 6800; brush (snow clearance) (TRACTOR 4), Tractor, front mounted cylinder brush, John Deere – 6810; brush (snow clearance) (TRACTOR 5), Tractor, front mounted cylinder brush, John Deere – 6810; brush (snow clearance) (TRACTOR 6), Tractor, front mounted cylinder brush, John Deere – 6610; brush (snow clearance) (TRACTOR 7), Tractor, front mounted cylinder brush, John Deere – 6610; brush (snow clearance) (TRACTOR 8), Tractor, front mounted cylinder brush, John Deere – 6810; walkway brush (confined space snow clearance) (TRACTOR 15), Antonio Carraro, front mounted cylinder brush, Antonio Carraro; walkway brush (confined space snow clearance) (TRACTOR 16), Antonio Carraro, front mounted cylinder brush, Antonio Carraro; walkway brush (confined space snow clearance) (TRACTOR 17), Antonio Carraro, front mounted plough, Antonio Carraro; bunce micro-combi (snow clearance) (TRACTOR 9), Tractor, front mounted cylinder brush, John Deere – 6820; bunce micro-combi (snow clearance) (TRACTOR 10), Tractor, front mounted cylinder brush, John Deere – 6620; bunce micro-combi (snow clearance) (TRACTOR 11), Tractor, front mounted cylinder brush, John Deere – 6920; bunce micro-combi (snow clearance) (TRACTOR 12), Tractor, front mounted cylinder brush, John Deere – 6920; bunce micro-combi (snow clearance) (TRACTOR 13), Tractor, front mounted cylinder brush, John Deere – 6920; bunce micro-combi (snow clearance) (TRACTOR 14), Tractor, front mounted cylinder brush, John Deere – 6530; blade (snow clearance) (BLADE 1), front mounted hog (pushing) blade, John Deere – 8320; blade (snow clearance) (BLADE 2), front mounted hog (pushing) blade, John Deere – 8320; blade (snow clearance) (BLADE 3), front mounted hog (pushing) blade, John Deere – 8320; blade (snow clearance) (BLADE 4), front mounted hog (pushing) blade, John Deere – 8320; blade (snow clearance) (BLADE 5), front mounted hog (pushing) blade, John Deere – 8400; blade (snow clearance) (BLADE 6), front mounted hog (pushing) blade, John Deere – 8400.

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: Phase 1: Runway and associated infrastructure to enable operation to recommence. Phase 2: Additional movement areas that allow the runway to return to full capacity. Phase 3: Remaining taxiways, links and cul-de-sacs.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: In general, and from the winter inventory list (Q10), the following equipment groups are employed for the associated areas as follows: a) Runway and taxiway areas – prime movers and snow blowers. b) Taxilane areas – prime movers, brushes and blades. c) Apron areas – brushes, blades and walkway brushes.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Dependant on the climatic conditions and traffic levels we would normally expect to be able to achieve blacktop conditions in around 45 to 60 minutes, after the snowfall has finished.

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: The pavement de-icers used at STAL are: Isomex 3 (liquid) and Glycomex (liquid). The quantities used last season (2012/13) at an application rate of 20g/sqm or 40g/sqm was 359,428l Isomex 3, 37,300l Konsin and 217,279l Glycomex.
12.2 Comment on storage capabilities of the chemicals that you use: The existing storage capabilities used for the storage of de-icing products at STAL are fit-for-purpose and meet with our business requirements in all regards. All bulk tanks are fully-bunded and the delivery systems for transfer-





ring media to the vehicle tanks are of good quality and reliability. Total storage capacity of 350,000l.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Solid de-icer not 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, the newer vehicles automatically switch off the spray bar when going over an area already treated, using GPS.
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? We use graded grit for airside roads and passenger walkway routes.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: We use a 'Vaisala' system; this is linked directly to our Meteorological Service Provider's network.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No plans.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Provided that the data outputs are within their calibrated limits the data has always been of great benefit to the management of winter conditions, particularly when you have access to up-to-date weather forecasting data.

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, STAL provides aircraft anti-icing services for the infrastructure only.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? The majority of de-icing activities are conducted on the aircraft parking stands. However there are plans to trial remote de-icing on designated taxiways this winter in certain circumstances.
14.3 Is glycol recovered? If so, please state methods: At present there are no glycol recovery systems in use at STAL.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? We currently use the Mu Meter Mk6 CFME device as manufactured by Douglas-Tugmaster in the UK.
15.2 Have you any comments on the reliability of friction indexes? Although the concept of an internationally agreed friction index is a positive step forward, it is clear that there are significant differences between the dynamics of aircraft braking performance when compared to the use of any CFME equipment. For this reason it is understandable that such an index has not been ratified through ICAO and meeting the approval of IATA and other international bodies.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? No, although the snow plan is reviewed annually.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes – in the capital plan for 2013/2014 we will ideally purchase additional snow equipment and runway 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.

LYON-SAINT EXUPÉRY

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Lyon-Saint Exupéry.

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 18R/36L: 4000x45m, shoulders 2x7.5m paved; RWYs 18L/36R: 2670x45m, shoulders 2x7.5m paved. RWY 18R: TODA 4000m, ASDA 4000m, LDA 4000m; RWY 36L: TODA 4000m, ASDA 4000m, LDA 4000m; RWY 18L: TODA 2670m, ASDA 2670m, LDA 2670m; RWY 36R: TODA 2670m, ASDA 2670m, LDA 2670m.
2.2 Landing aids for each RWY (e.g. CAT II): RWYs 18R/36L: CODE 4E, Precision instrument: 36L CATIII, 18R CATI. RWYs 18L/36R: CODE 4E, Precision instrument: 36R CATIII, 18L CATI.

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 but continuous improvement actions are made regularly.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: The airport operator proposes training to ground handling personnel such as Airside Driving Authorisation (TRV) training.
b) Inspection by airline, airport, and airplane handling agency personnel: Ramp monitoring performed by Aéroports de Lyon's staff: Airside Monitoring & Inspection Unit (AMI Unit) and Airside Sweepers. Aircraft parking position pre-use/post use check by AMI Unit's staff and ground Handlers' ramp staff. Runway inspections performed by AMI Unit.
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): Poster campaigns, weighing (for statistics), analysis, archiving.
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? Monitoring done by ATC (Vehicles equipped with a geo-localisation system called MOSQUITO).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? During LVP, any operational movements are reduced to a minimum.
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: No.
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 maneuvering area, extra training for those who have to cross runways. Recurrent training after a period of 3 years for those who drive in the 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 activities are based on the European Action Plan for the Prevention of Runway Incursion, and carried out jointly with the ATC and pilots. Regular meetings take place (Local Runway Safety Team/Safety Promotion Committee).

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Grass cut to a height between 15 and 20cm; elimination of trees and bushes along runways; tilling of the soil and cultivation of cereal crops is not permitted; presence of stagnant or exposed water avoided (drainage); nesting control; building and infrastructures adaptation.
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 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 9mm); whistling cartridges (6 and 9mm); mid-range exploding cartridges (26.5mm); long range silent – then exploding – rockets (Lacroix Capa) discharged from Revolvers; bird scaring laser (handheld); acoustic broadcasting of natural and synthesised distress calls (mobile recorder and speaker, in the car); 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 speciality dedicated to wildlife hazard management (software called AWHM: Airport Wildlife Hazard Management).
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 centralised and recorded electronically in a daily report. All data is available at any time.
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: VIM90; 6X6; 9000l water, 250kg powder; 3 units. Spare VIM90; 6X6; 1 unit.
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, we have a fire training simulator that can be made available for other airports training.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 November-15 April.
8.2 Average annual days of snow: 9 days.
8.3 Average snow depth: 1 to 40cm.
8.4 Maximum snow in 24 hours: 40cm.
8.5 Annual number of days of de-icing activities: 120 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Two teams of 25 airport-employees, sub-contracted: 2 teams of 20 agents.

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 BOSCHUNG with blade 6.40m; 2 BOSCHUNG with blade 8.40m; 4 trucks 4x4 with blade; 2 tractor 300CV with tri-axes blade; 2 tractors 816 with blade; 1 tractor 100CV with blade; 1 AEBI with blade; 3 multi-purpose vehicles with blade; 1 tractor 80CV with blade (+1 in reserve); 1 sweeper with blade (+1 in reserve); Surface ice - black ice - residual snow layers; spreading of de-icing agent (over a width of 60m on RWY).

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 following will be cleared: the main RWY over a width of 60m, its side stripes and over its entire length; the secondary RWY over a width of 60m, and over its entire length; the TWY over a width of 22.5m and according to an order of priority laid down by local authorities; the aprons as dictated by operational requirements.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? It depends on snow depth, air temperature and ground temperature. After moderate snow, the 'black-top' of the runway is usually achieved in 40 minutes for the 4000m runway length.

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 (liquid) and Acetate (solid). In 2012, we used 175m3 of pavement de-icer (around 227 tons).
12.2 Comment on storage capabilities of the chemicals that you use: We have a 290,000 litres of clearway storage capacity.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Below -6°c we mix solid and liquid de-icer (ratio of 20% to 25% of solid de-icers). Effectiveness is good, but we have to wait between 20 and 30 minutes for a good effectiveness.
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? Electrical features installed in all vehicles.
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: Two probes on taxiways, which indicate ground temperature.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? One temperature probe for a Runway will be purchased in 2014.
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: No, it is done by ground handling companies.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? No dedicated de-icing positions.
14.3 Is glycol recovered? If so, please state methods: The stand is swept after each de-icing by a vacuum sweeper vehicle.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT 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? No.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: An additional ASFT trailer. One truck with liquid (30,000 litres) /solid (24 cubic meters) storage 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: No.
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: Madeira 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 05/23: RWY length: 2,781m. Runway 05: TORA: 2,631 (including 150m of pavement before threshold). Runway 23: TORA 2,631m (including 150m of pavement before threshold); RWY width: 45m; shoulder widths: 3m; total apron area: 82,487sqm; ramp area: 110,809sqm.
2.2 Landing aids for each RWY (e.g. CAT II): Visual approach for both runways only. Runway 05 – PAPI system with 3 degrees glide-scope on both sides of the runway; Runway 23 – 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

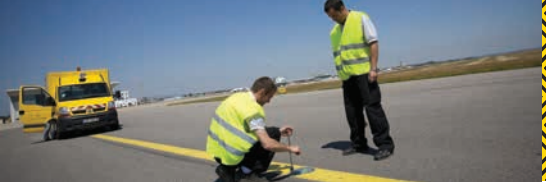
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: It is mandatory to have training on this issue before starting to operate in the manoeuvring area.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport Duty Manager inspects the runways and aprons 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, as well as sweepers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination and reporting is done by the Airport Duty Manager (24 hours).
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 coordinated by local ATS (TWR).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? The measures taken were effective until 2010 and, until now, there has been 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. Runway 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 implemented in order to reduce the attraction of the airfield to birds, however, have recently been awarded the realisation of a new study (Birds Life), lasting three years, to understand the reasons for the increase of birds and act appropriately and preventively to prevent the risk.
6.1 Do your staff attend recognised bird control training courses? Staff are concerned with the matter and aware of the risks. There is no specific course but briefings are made by the Airport Operations and Safety office.
6.2 Are your bird control staff working on the





airfield continuously, hourly, less than hourly? 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 the 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: Oshkosh P19; 4X4; 3,850l water, 492l foams, 227kg powder, 68kg Hallon; 1989. Oshkosh T1500; 6X6; 6,000l water, 776l foam, 317kg powder, 68kg Hallon; 1991. Oshkosh T3000; 6X6; 11,356l water, 1,590l foam, 227kg powder, 100kg NAF. P; 1999. Oshkosh Striker 3000; 6X6; 11,356l water, 1,590l foam, 204kg powder; 2012.
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 facility.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Not applicable.
8.2 Average annual days of snow: Not applicable.
8.3 Average snow depth: Not applicable.
8.4 Maximum snow in 24 hours: Not applicable.
8.5 Annual number of days of de-icing activities: Not applicable.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Not applicable.

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): Not applicable.

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: Not applicable.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Not applicable.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Not applicable.

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 applicable.
12.2 Comment on storage capabilities of the chemicals that you use: Not applicable.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Not applicable.
12.4 Have you experienced any corrosion problems with de-icers? Not applicable.
12.5 Have you employed any special means to economise on chemical use? Not applicable.
12.6 Do you have any other comments on experience with chemicals? Not applicable.
12.7 Do you use other chemicals or sand on operational areas? Not applicable.

13. ICE WARNING SYSTEMS

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

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: Not applicable.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Not applicable.
14.3 Is glycol recovered? If so, please state methods: Not applicable.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? A friction test was done by TRADETARGET in November 2013, and to determine the coefficient of friction was performed continuously at an average speed of 65km/h and 95km/h, at night time, in dry weather, and using GRIPTESTER equipment.
15.2 Have you any comments on the reliability of friction indexes? In the overall results of the evaluation of friction coefficient, 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

aena aeropuertos

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. A Safety Bulletin related to FODs was sent to all the multiples agencies in November 2013.
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 (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? The control is done by an external company.
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 50 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? Annually, an exhaustive Birdlife Risk Study Management is conducted and evaluated, involving various air operators, Spanish Aviation Safety Agency (AESA), pilots and aircraft and engine manufacturers and expert staff from AENA and SENASA. The 2012 Birdlife Risk Study Management defined new mitigation measures in order to reduce the birdlife risk in the airport activities. Moreover, annually, since 2011, a Birdlife Committee was implemented in order to share and analyse information about: the bird population, mitigation measures, new proposals, areas of attraction, recorded incidents, other information concerned to the birds study in the vicinity of the airport and its influence area.
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 (litres) 3.000,00, Fire Pump (litres/minute) 400,00; Mercedes Atego: Water Tank (litres) 3.000,00, Fire Pump (litres/minute) 1.500,00, Foam Tank (litres) 360,00; Rosenbauer Panther 8x8: Water Tank (litres) 13.500,00, Fire Pump (litres/minute) 6.750,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.620,00; Rosenbauer Panther 8x8: Water Tank (litres) 13.500,00, Fire Pump (litres/minute) 6.750,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.620,00; Rosenbauer Panther 8x8: Water Tank (litres) 13.500,00, Fire Pump (litres/minute) 6.750,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.620,00; Rosenbauer Panther 8x8: Water Tank (litres) 13.500,00, Fire Pump (litres/minute) 6.750,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.620,00; Rosenbauer Panther 8x8 HRET: Water Tank (litres) 12.000,00, Fire Pump (litres/minute) 6.000,00, Foam Tank (litres) 1.500,00; Man Protect Fire 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 5.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Man Protect Fire 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 5.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Man Protect Fire 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 5.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Man Protect Fire 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 5.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Man Protect Fire 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 5.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Oshkosh Striker 3000 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 6.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Oshkosh Striker 3000 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 6.000,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00; Saval Kronenburg Mac-11 6x6: Water Tank (litres) 10.000,00, Fire Pump (litres/minute) 4.500,00, Dry Chemical System (Kg PQS) 250,00, Foam Tank (litres) 1.200,00.
7.2 Future developments – are there plans to purchase or dispose of any equipment? An additional 10.000 litres Firefighting Vehicle to replace a Rosenbauer Panther 8x8 HRET accidentally destroyed.
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? There are human and material resources permanently; however the period with usually winter conditions occurs from 15th November to 15th March.
8.3 Average snow depth: In the period from 01/01/1950 to 31/01/2009 there were 14 snowfalls with an approximate depth of 10cm in which the snow covered the surface during approximately 24 hours.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Airfield Maintenance: 2 airport employees per shift and up to 150 sub-contracted employees. Firefighters: 24 airport employees per shift. Marshallers: 11 airport 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): Runway equipment: Runway sweeper with truck Mercedes ACTROS 2041 with snow equipment Øveraasen, Øveraasen, RS400 MKIII, 9 units; snow blower, Rolba, Zaugg Modelo 1500, 2 units; liquid spreader, MAN, Boschung 15 M^3 62037, 3 units. Apron equipment: Mini loader, Bobcat S130, 10 units; loader, Volvo, L180, 6 units; truck, MAN, FE 40.414, 5 units; snow truck, MAN, 6X6 TGS 33.360, 5 units. Airside road equipment: Snow truck, MAN, 6X6 TGS 33.360, 2 units. Landside road equipment: Mini loader, Bobcat, S130, 4 units; snow truck, MAN, 4X4 TGS 33.310, 2 units; all roads 4x4, Mitsubishi, L200, 2 units. General machinery: Fuel supply tank, 1 unit; vehicle, 7 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 deicing areas. Aprons: Firstly 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 personnel who operate machinery, performing theoretical and practical training, including several drills to test routes and machinery formations established in the Airport 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 4 runways and associated taxiways, so the cleaning of each runway is done in about 30 minutes. Approximately 40 minutes adding the time needed to friction coefficient verification.

12. EXPERIENCE WITH CHEMICALS

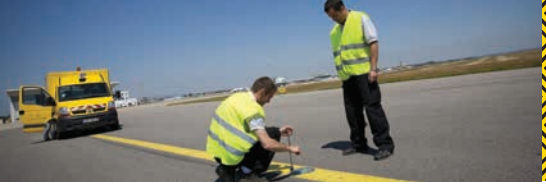
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: De-icer used last season (no too much adverse weather conditions): Potassium Formate: 63,160 litres. Urea: 35,452kg. In the last two seasons there had been no adverse weather conditions (episodes of heavy frost or snow) at Madrid-Barajas Airport, so we cannot report effectiveness analysis.
12.2 Comment on storage capabilities of the chemicals that you use: The potassium formate is stored in four tanks of 50,000 litres each, and two tanks of 33,000 litres each, so there's a total storage capacity of 266,000 litres. Urea is kept in a closed vessel to have it protected from adverse atmospheric conditions of temperature and humidity. Airport has storage 150,000kg, but the storage capacity is bigger than this if necessary.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: It was used solid urea pre-moistened with potassium formate in preventative treatments, been effective in every case it was used. The distribution of the material has been properly because there were no extreme high winds.
12.4 Have you experienced any corrosion problems with de-icers? No accident or corrosion problems detected, because as noted, 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 whenever atmospheric conditions are such that they will cause serious problems in the airfield. So saving is made having effective weather forecast information.
12.6 Do you have any other comments on experience with chemicals? Preventative treatments are very effective, so acting before early moments of the snowfall can avoid snow curdle into the floor, or even to form a layer of ice, 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: Spanish State Meteorological Agency send four temperature forecast daily and issue 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

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 deicing handler (IBERIA). 18 vehicles in total manufactured by JBT: TM 1800 (1 ud), LM 2000 (4 uds), Tempest with enclosed cab and airfresh (12 uds), Tempest with open cab (1 ud).
Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Dedicated de-icing areas.
Is glycol recovered? If so, please state methods:





Yes. An authorised company manages glycol. The company 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 locally implemented since November 25th.
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.

MALTA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Malta 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): Runway 13: asphalt strip, 3,542x60m. Runway 31: asphalt strip, 3,355x60m. Runway 23-05: asphalt strip, 2,377x45m; Runway designator: 05; TORA: 2,376m; TODA: 2,529m; ASDA: 2,376m; LDA: 2,376m; see Note 2. Runway designator: 05P; TORA: 1,578m; TODA: 1,731m; ASDA: 1,5778m; see Notes 1 & 2. Runway designator: 23; TORA: 2,376m; TODA: 2,559m; ASDA: 2,376m; LDA: 2,376m; see Note 2. Runway designator: 23Y; TORA: 1,927m; TODA: 2,110m; ASDA: 1,927; see Notes 1 & 2. Runway designator: 23Q; TORA: 1,634m; TODA: 1,817m; ASDA: 1,634m; see Notes 1 & 2. Runway designator: 23R; TORA: 1,686m; TODA: 1,869m; ASDA: 1,686m; see Notes 1 & 2. Runway designator: 13; TORA: 3,542m; TODA: 3,590m; ASDA: 3,542m; LDA: 3,542m; see Note 2. Runway designator: 13F; TORA: 2,543m; TODA: 2,591m; ASDA: 2,543m; see Notes 1 & 2. Runway designator: 13E; TORA: 2,117m; TODA: 2,165m; ASDA: 2,117m; see Notes 1 & 2. Runway designator: 31; TORA: 3,355m; TODA: 3,755m; ASDA: 3,555m; LDA: 3,555m; see Note 2. Runway designator: 31C; TORA: 2,276m; TODA: 2,676m; ASDA: 2,476m; see Notes 1 & 2. Runway designator: 31D; TORA: 1,847m; TODA: 2,247m; ASDA: 2,047m; see Notes 1 & 2. Notes: (1) The declared take off run available (TORA) for intersection take-offs initiates at the point where the referenced taxiway centreline meets the runway edge line and ends at the referenced runway end-bar. The distance shown on aerodrome intersection take-off signs (in metres) at the corresponding runway holding positions is based on this principle. (2) Runway End Safety Area not available.
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? The improvement of the structure/dedicated staff. Procurement of software and increase in safety cases and investigations.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Awareness campaign and during new entrants and revision, monthly Safety Alert Campaign.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport holds regular inspections on the movement areas.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Mechanical sweeping, FOD bins, FOD controls, increase in FOD bins
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airlines, Ground Handling Service Providers, Fuel Suppliers, and Airside 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): No, but making use of e-database.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? ATC Visual & Inspections overseeing operations.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes, regular monitoring/inspections and audits. Any concerns are addressed within safety cases.
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): Through ATC.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Paint/signs/red warning lights on top of traffic lights and enhancement of surface markings.
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 vehicle operators & airside users undergo strict training procedures with testing in both verbal and written formats. Also in the process of publishing revised/updated Airfield Driving Regulations and Policies.
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, through the regulator – Committee for Runway Incursions.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Continuous grass cutting, checking of sensitive habitat areas for birds, pruning of trees to avoid flocks, use of acoustic system, and, when necessary, culling.
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 on the aerodrome.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Acoustic bird dispersal sound systems from Scarecrow UK including a GPS based system (Ultima) from the same supplier.
6.4 Do you carry out a bird strike risk assessment? Yes – currently in process, including a study of bird strikes within a 13km radius of the ARP.
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): Recording of each inspection is obligatory.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Very rarely – dogs – provisions are made with local animal welfare authorities for their safe removal.

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: 3x Rosenbauer Panther; 6X6; (FL 33.600); 12,000l water, 1,500l foam, 125kg dry powder; 2000. 1x Rosenbauer RIV, 2,500l water, 300l foam, 250kg dry powder; 2012.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Just been upgraded.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Full Training Grounds for ARFF. Training grounds used primarily for internal training but also provide opportunity to train third parties.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Mild winter.
8.2 Average annual days of snow: No snow.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport's methods? Regular safety alerts, continuous improvements/revision of procedure to reflect any changes following the outcome of safety cases and investigations.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Currently (and gradually) upgrading operational vehicles.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes, two 4X4 vehicles.

MILAN LINATE

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, 256,000sqm; Taxiway+holding bay 134,000sqm; North Apron 322,000sqm; West Apron 65,000sqm; TORA: 2,442m.
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 operators' disposal.
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 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, foxes and nutrias. Bloodless capture.

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: Poseidon, 2, Autohydrofoam, MAN, 6 X 6, H20 litres 10,200, foam litres 1,200; Dragon X 6, 1, Autohydrofoam/Powder, IVECO, 6 X 6, powder Kg 600, H20 litres 8,900, foam litres 1,250; Dragon X 6, 2, Autohydrofoam, IVECO, 6 X 6, H20 litres 10,500, foam litres 1,250; Superdragon, 1, Autohydrofoam/Powder, IVECO, 8 X 8, powder Kg 600, H20 litres 11,800, foam litres 1,400; Rampini, 2, Sirmac, 4 X 4, powder Kg 600, foam litres 600; ASA, 1, Rescue vehicle, IVECO, 4 X 4, H20 litres 600; APS, 1, Autopump, IVECO, 3000; 1 NBCR vehicle, BAI; Actros, 1, Support tanker, Mercedes, 4 x 4, H20 litres 25,000.
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: 7-10cm.
8.4 Maximum snow in 24 hours: about 20-25cm.
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 supplies: 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

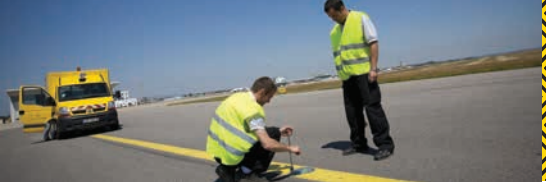
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Safety KA; Safety SD. Safety KA has been used to prevent deposit of snow on pavement. Safeway SD has been used in case of 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

SEA AEROPORTI DI MILANO 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): Total areas: Runway 17L-35R: 235,000sqm; Taxiway: 552,000sqm; Apron T1: 1.15 million square metres; Apron T2: 319,000sqm. TORA: 3,920m.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 35R/L – CAT III b; RWY – 17L 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 in 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 the apron for analysis.
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): 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: Illuminated red bars, together with microwaves anti-intrusion systems, are used. There are sign markings like 'Runway Ahead' and 'No Entry', in addition to the anti-intrusion system (microwave) for each taxiway serving the runway. Besides that, a lighting system for pilots is being tested.
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 the airport authority, following 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 the Bird Control Unit has been created to ensure bird control and exclusion in the airport. The BCU is composed of a group of professional figures (biologists). The training activity refers to birds' biology and attitudes, the procedures to be carried out in order to avoid the presence of birds in the airport, and on the monitoring data collection. The training activity refers also on procedures of airport circulation and the 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 sound and 2000w power; shotguns; distress calls; 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

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Superdragon Autohydrofoam/powder; IVECO; 8X8; 600kg powder, 11,800l water, 1,400l foam; 10 units. Dragon X6 Autohydrofoam; IVECO; 6X6; 10,400l water, 1,400l foam. Rampini quick intervention; Sirmac; 4X4; 600kg powder; 850l foam; 3 units. Actros support tanker; Mercedes; 6X4; 35,000l water.
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? 1 November-31 March.
8.2 Average annual days of snow: 4-5 days.
8.3 Average snow depth: 7-10cm.
8.4 Maximum snow in 24 hours: About 30cm.
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? About 198 airport employed winter services personnel. About 195 sub-contracted winter services personnel.

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: Turbo cutters, Fresia F90ST, 5 units; self-propelled sweeper blower, Schmidt, 1 unit; suction sweepers with front roller, 3 units; self-propelled sweeper blower, Fresia F2000, 8 units; self-propelled sweeper blower, Schmidt, 2 units; self-propelled sweeper blower, Boschung, 1 unit; blower driven sweeper, Rolba, 2 units; tractor blades with support 4m, 23 units; tractor blades with brush or blades, 8 units; Fresia F90ST with blade and sprinkle liquid, 1 unit; snow compactors, 2 units; tractor with rotary brush, 2 units; spreaders multi de-icing, 4 units – 2 Giletta, 1 Küpper Weiser, 1 Schmidt; versatile tractor, 3 units; tractor with rotary brush 2m, MultiHog, 4 units; friction tester, 2 units; total units: 71. Third parties supplies: Truck blade 4m and 6m, 21 units; dumpers, 46 units; wheel loader 2.5m, 30 units; tractor with blade 2.7m, 10 units; total units: 107. Others: Tractor with blade, 16 units; dumpers, 16 units; wheel loader, 8 units; mini-tractors with a blade, 7 units; total units: 47.

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 17R-35L with Taxiways 'GE', 'GW', 'L', 'EM', 'EW', 'BE', 'BW'; Taxiway 'C'; 2. Runway 17L-35R with Taxiways 'CA', 'E', 'AB', 'AA'; Taxiways 'W' and 'K'; 3. Taxiway 'Y' and all the apron taxiways of Terminal 1 and the de-icing area; Apron Terminal 1, Terminal 2 and Cargo.
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: Safegrip FR 432,000l; Safegrip SF 50,000kg. Safegrip FR has been used to prevent the deposit of snow on the pavement. Safegrip SF has been used in the case of ice on the pavement, and subsequently treated with liquid.
12.2 Comment on storage capabilities of the chemicals that you use: Safegrip FR 220,000l; Safegrip SF 40,000kg.
12.4 Have you experienced any corrosion problems with de-icers? No problems occurred with chemical use.

13. ICE WARNING SYSTEMS

13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? We are installing two new weather stations with road sensors, in order to record the road temperature and freezing point.

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, 7 units, Vestergaard Beta Model 15, 9 units, JBT Tempest, 6 units.
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, 1999, 1 unit; Volkswagen SFT Sharan 2008, 1998, 1 unit.
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.
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: We have on order one MultiHog, five combi-units and five snow blades.

OSTRAVA

Leos Janacek Ostrava Airport

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Ostrava Mosnov.

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: 130,000sqm. ACFT stands: APN CENTRAL – 5xCAT C, 2x CAT D, (or 1x CAT F); 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 and NORTH 3.
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 and personnel are trained according to these guidelines.
b) Inspection by airline, airport, and airplane handling agency personnel. Inspections are done 4 times a day by airport operation dispatcher.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): 4x 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. (One 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 are trained every two years. Rules are defined in airport guidelines. Every third month a 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 uses trained birds, firearms, and 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 website it 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: 2x Rosenbauer PANTHER 6X6, 12500l water, 1500l foam, 250kg powder, 2010; 2x Mercedes ACTROS BUFFALO 3 and 4, 6X6, 6000l water, 800l foam, 250kg powder, 2008; 1x MB ACTROS, 6X4, container transporter, 2009; 1x Bronto Skylift F32 RLX, withdrawable platform, 2009; 1x MB SPRINTER – chemical protection, 2009; 1x MB SPRINTER – transport vehicle, 2009; 1x Nissan PATROL -– rescue car 2006; 1x Peugeot PARTNER Teepee, technical support, 2009; 1x Ambulance FORD, 1999; 1x Mitshubishi L20; 1x 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? 1 October-30 April.
8.2 Average annual days of snow: 120 days.
8.3 Average snow depth: 10cm.
8.4 Maximum snow in 24 hours: 25cm.
8.5 Annual number of days of de-icing activities: 45 days.

9. WINTER ORGANISATION

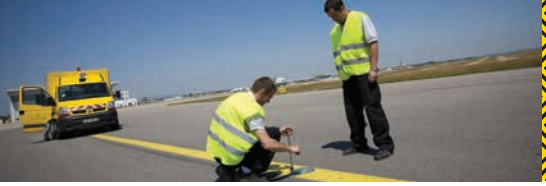
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Seven persons per shift (12 hours).

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; 3x compact plough + jet broom Overaasen; 2x plough truck + jet broom Overaasen; 1x plough truck + jet broom TATRA 815 + Schorling; 1x MB truck plough + gritter; 1x MB UNIMOG, plough and sander-gritter; 2x snow cutter; 3x tractor plough; 1x small plough tractor.

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 04/22; 2. TWYs; 3. APN CENTRAL; 4. APN SOUTH, NORTH; 5. Other surfaces.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: 4 plough trucks clear RWY first, then TWY A, E and APN CENTRAL. The snow banks are pulled to sides of RWY and then snow cutter moves them from RWY. The same procedure is applied on TWYs and APN.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 50 minutes to clear the 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: 1x MB UNIMOG, plough and sander-gritter; 1x MB truck, liquid chemicals. 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: Podgorica 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 of runway 2500mx45m; strip dimensions 2620mx300m. RWY 18: TORA: 2,500m/2005; TODA: 2,500m/2005; ASDA: 2,500m/2005; LDA: 2,500m; take-off from intersection with TWY B. RWY 36: TORA: 2,500m/2007; TODA: 2,500m/2007; ASDA: 2,500m/2007; LDA: 2,500m; take-off from intersection with TWY E. Apron area 28,000sqm; apron area for general aviation 5,220sqm.
2.2 Landing aids for each RWY (e.g. CAT I): RWY 18 – Non-instrument approach (approach light unique system), PAPI (both); RWY 36 – CAT I (ALPA ATA), PAPI (both).

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? Safety Management Manual has not been completed yet.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Thorough Safety Awareness Training Course and regular refreshment of knowledge, which must be completed by every employee working at airside. FOD prevention is a part of the above-mentioned training course also, and adequate operational procedures are established for FOD control and removal.
b) Inspection by airline, airport, and airplane handling agency personnel: Regular airline audits control this issue, and also the staff of Podgorica Airport as the handler, exercise daily control over the manoeuvring surfaces and aprons.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Through use of a carpet and apron FOD containers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc.): We have established a safety alert form, which is distributed to all employees within airside 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): Currently there are no special systems or software solutions applied, but according to hand filed reports we do daily analysis.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? In accordance with an agreement of coordination between Podgorica ATC and the airport operator, the responsibility of monitoring manoeuvring surfaces and giving authorisation for vehicle and aircraft movements falls to ATC. The airport operator is responsible for aprons and access roads on the airside.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No design or engineering changes have been 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 of the 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? The airport operator has organised safety awareness training for all staff working at the airport (ATC staff, military staff, refuelling company staff, catering suppliers etc.) through airport's training centre. Safety alerts booklets have also been introduced for all present staff at the airport, and also an SMS box is available for safety matters which occur at the airport.
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? Through internal procedures we raise safety awareness for all staff employed at the airport, encouraging people to report occurences dealing with safety personally, by phone or in written reports which can be submitted anonymously through the installed SMS box. According that we apply 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: With regards to terrain covered with grass at airside, it is a matter of a permanent cutting grass process, as well as continuous monitoring of the surfaces from the fire fighting service watchtower. In the case of greater presence of birds the procedure for the dispersal of birds is activated.
6.1 Do your staff attend recognised bird control training courses? No recognised courses are attended.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Continuously through regular daily inspections of manoeuvering surfaces and also through reporting events from the position of aircraft crew, ATC, handling staff etc.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Sirens mounted to vehicles and shotguns.
6.4 Do you carry out a bird strike risk assessment? We have not done so 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 we have log book with recorded bird dispersal activities, and also report on the occurrence of birds (QP4.80).
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Occasionally wild dogs appear, attracted by hares. Regular activities of cutting the grass, reducing food resources and shelter for hares, have been performed.

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; MAN; 6X6; 12,000l water, 1,500l foam; 2004; 2 units. Amertek; 4X4; 4,000l water, 500l foam; 1992.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No.
7.3 If your airport possesses a Fire Training Simula-






tor, 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? 1 November-31 March in accordiance with guidelines QP3.37 And QP3.74.
8.2 Average annual days of snow: 2 days (for the last three years).
8.3 Average snow depth: 3cm.
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 subcontracted winter services personnel are available per shift? About 20 persons employed per shift, but that number can be increased depending on the intensity of precipitation.

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 the subcontracted equipment list: 2x trucks with snowploughs, 2x urea spreaders, 1x sweeper, 1x snow blower, 1x truck which can be equipped with a snowplough or a snow blower.

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 as follows: 1. RWY; 2. Taxiways N and B; 3. Apron (one stand minimum); 4. General avitaion apron (one stand minimum); 5. Taxiways J and P.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: One passing of trucks with snowploughs from the edge of runway to the centre line, followed by snowploughs which operate from the centre line to the edge of the runway. After that snow blowers throw snow out of the runway and a sweeper cleans the runway surface and urea spreaders sprinkle the tarmac.
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)) and 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? Not currently.
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: 3,715x45m; PCN 62/R/B/X/T; shoulders: 2x7.5m; TORA/ASDA/LDA:3715 m; TODA: 4015m. RWY 12/30: 3,250x45m; PCN 62/R/B/X/T; shoulders: 2x7.5m; TORA/ASDA/LDA: 3,250m; RWY 12 TODA: 3,400m; RWY 30 TODA: 3,550m. RWY 04/22: 2120x60m; PCN 45/F/B/X/T; RWY is closed for take-offs and landings. (Taxiing, parking and handling of aircraft approved.) Total Apron Area: 635,000sqm. Total Pavement Area: 2.2 million sqm.
2.2 Landing aids for each RWY (e.g. CAT II):
RWY 06: ILS CAT I, PAPI, ALS length 480m;
RWY 24: ILS CAT II/III, PAPI, ALS length 900m;
RWY 12: ILS CAT I, PAPI, SALS length 420m;
RWY 30: ILS CAT I, PAPI, ALS length 900m.

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. Prague Airport has SMS in compliance with ICAO Doc. 9859, without any significant changes.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

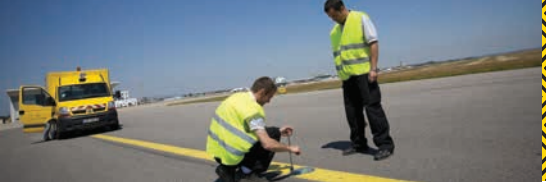
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: General FOD training is the part of periodical Security and Safety training, which is mandatory for all personnel with permission to enter the SRA zone.
b) Inspection by airline, airport, and airplane handling agency personnel: 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 to 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 to the 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 the responsibility of the Apron Safety Team. The representatives of all handling, cargo and refueling companies providing services at the airport, as well as the representatives of the main airlines and AOC, are 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 areas (all vehicles are equipped with a 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 markings. All CAT II/III holding points are equipped with guard lights and stop bars. RWY 06/24 has markings with black borders to highlight the markings on the concrete surface. TWY and apron: TWY centre line marking has been widened to 30cm; where an information sign would normally be installed, but where is impractical to do so, information markings have been painted on the TWY centre line, prior to TWY intersection. TWYs with concrete surface have markings with black borders. There are illuminated 'Low Visibility Operations' signs 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 had sspecial training provided by the ATC training center and 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. The Civil Aviation Authority and Air Accidents Investigation Institute have a 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, that are dangerous to the 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 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 sunrise to sunset.
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 analyse 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); 200l water, 20l foam); 2003; 1 unit. Mercedes-Benz Atego; 4X2; 2,500l water, 200l foam; 2000; 1 unit. Scania; 4X4; 2,500l water, 200l foam; 2011; 1 unit. Mercedes-Benz Buffalo; 6X6; 8,000l water, 1,000l foam; 1998; 2 units. PANTHER II Rosenbauer HRET; 6X6; 12,500l water, 1,500l foam, 250kg powder; 2009; 1 unit. PANTHER II Rosenbauer; 6X6; 12,500l water, 1500l foam, 250kg powder; 2008; 1 unit. PANTHER Rosenbauer; 6X6; 12,000,l water, 1,500l foam, 250kg powder; 2003, 2004; 2 units. Volkswagen LT 46 – technical support; Scania Bronto Skylift RLX 42 – aerial platform with ladder (42 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-sized truck vehicle with 6X6 and crew cab design in 2014, and both of the MB Buffalos with one new medium-sized truck. In accordance with the new runway system we plan to reinforce with one heavy truck with HRET and hydrochem technology (the category of PANTHER) and have located it to new subsidiary fire station.
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, or in the Czech Republic. We are provided with ICAO training abroad.

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: 29 days based on the statistics of the last 13 years, and 56 days last winter (2012/2013).
8.3 Average snow depth: 84cm based on statistics of the last 13 years, and 140cm last winter (2012/2013).
8.4 Maximum snow in 24 hours: Not applicable.
8.5 Annual number of days of de-icing activities: Not applicable.

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: 3x Operational Dispatchers, 2x Operational Coordinators (Foremen), 16x internal and 12x external drivers.

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 snow blower, Kahlbacher, 2 units; snow blower, Schmidt 5000, 1 unit; snow blower, Rolba 4000, 1 unit; snow blower, 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 and RWY exits and TWY parallel to RWY in use, Apron NORTH (number of stands covering real traffic), access to Fire Fighting Rescue Service stations, entries to the equipment of the Aeronautical Meteorological Service and radio navigation aids relating to RWY in use, access to aircraft parking position and hangars; 2. Second RWY and RWY exits and TWYs; 3. Apron EAST and Apron SOUTH; 4. Rest of the Apron NORTH; 5. Rest of the Apron EAST and Apron SOUTH; 6. Rest of movement area, the equipment of the Aeronautical meteorological Service, radio navigation 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 manoeuvring area, RWG – Runway Working Group; AWG – Apron Working Group; and GWG – Gate Working Group. The Landside Working Group is responsible for cleaning of whole landside. The Snow Co-ordinator co-ordinates action with TWR Controller. RWY, when being cleared, is closed for aircraft operations by SNOWTAM. The complete RWG moves to RWY threshold and starts the clearing 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 is loaded and removed. Surface de-icing: Acetates are used for de-icing on runways, taxiways and aprons. Urea can be used 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), approximately 900,000l. Roads/parking lots: salt, approximately 400 tons. We are satisfied with the effectiveness at low temperatures; however, it would be useful to increase the holdover time of de-icers, particularly in freezing rain or freezing fog.
12.2 Comment on storage capabilities of the chemicals that you use: Storage for 200,000l directly at the airport.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Our experience with solid de-icers was 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 sand on operational areas is prohibited by CAA, and urea is prohibited due to environmental reasons.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Boschung Mecatronic – eight 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 a very good tool for the monitoring of the pavement condition. It also helps alert us to 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 three companies (ground handlers): Czech Airlines Handling, with five de-icing vehicles; Menzies Aviation, with two de-icing vehicles; and Czech Ground Handling with two 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 the 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): Runway 09/27: RWY length: 2,946m; TORA: 2,946m; RWY width: 45m; shoulders: none; ramp area: approximately 64,200sqm; TWY width: 23m.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 09 – CAT I Simple Approach Lighting System; Runway 27 – 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 training is being conducted along with licensees' extension training.
b) Inspection by airline, airport, and airplane handling agency personnel: Airport employees conduct inspections of FOD on operating areas several times a day. Airport procedures for controlling FOD are presented to 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 are no other agencies involved.
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 special Pula Airport software ('IMS') in order to log all daily inspections of operating areas in terms of FOD 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): The 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 at airports with one runway and few 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 participate in safety refreshment trainings courses on a constant basis.
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 were set up jointly with the other parties active in the process 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: Careful planning, and use of a lawn mower on the airfield and surrounding areas, reduce the attraction of birds to the airfield.
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? 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 is presently in 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, the 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: Panther I; Rosenbauer; 6X6; 12,000l water, 1,500l foam, 250kg powder; 2009. Panther II; Rosenbauer; 6X6; 12,000l water, 1,500l foam, 250kg powder; 2007. Panther III; Rosenbauer; 6X6; 12,000l water, 1,500l foam; 2005. Faun; Rosenbauer; 6x6; 9,000l water, 1,000l foam; 1984. Mazda B2500 TD; Mazda; 4X4; 2004.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Construction of a new RFFS hangar has recently been completed and is now in use.
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? 1 November-15 April.
8.2 Average annual days of snow: 1-2.
8.3 Average snow depth: 5-20cm.
8.4 Maximum snow in 24 hours: Approximately 20cm.
8.5 Annual number of days of de-icing activities: 17-25.

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, a winter service is formed of maintenance personnel and technical service personnel. The number of available personnel per shift would be at a minimum 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): Anti/de-icing truck, Man-Sroder, 18.232 F-Automatic, 1 unit; pavement sweeper, FMS, 1 unit; de-icers spreader, 1 unit; 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: 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 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 has rarely been moderate snow on Pula Airport's runway in the last three or four years. It has happened only once, and '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 for the last two or three seasons we have had to use it at all. Urea de-icer is effective enough for our meteorological conditions.
12.2 Comment on storage capabilities of the chemicals which you use: We have 1,250kg of urea in storage and more than 1,250kg in 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, as of now we have not.
12.5 Have you employed any special means to economise on chemical use? No, we have not.
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, we do not.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: We do not have an ice warning system because meteorological conditions at Pula Airport are very good. At the 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 the above-mentioned meteorological conditions.

14. AIRCRAFT DE-ICING

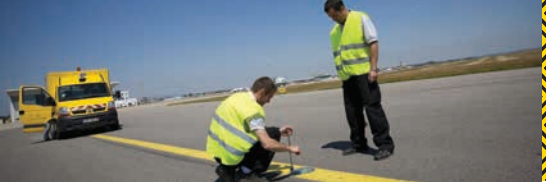
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Anti/de-icing truck, Man-Sroder, 18.232 F-Automatic, 1 unit.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking 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.

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 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

RIX

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Riga 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): Runway 18/36: RWY length: 3,200m; TORA: 3,200m; RWY width: 45m; shoulder widths: 7.5m; total apron area: 373,200sqm, number of stands: 52. From March 6 2014 until August 31 2014 large-scale reconstruction works will take place, including runway resurfacing. Runway will be closed nightly 00:00-06:00 (local).
2.2 Landing aids for each RWY (e.g. CAT II): Runway 18 – CAT I; Runway 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 was 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, and a method for the 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 with the 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 runway and taxiways, and 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.

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? Guard lights and stop bars are installed on RTHPs, signs for vehicles entering the manoeuvring area and ILS critical area are installed. All ground staff performing works on runway use Tower VHF frequency and ICAO English phraseology for clearances.
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 ATC control area. The runway protected area border on grass is marked with plastic markers every 50m.
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 are issued occasionally. Special Driving rules and extensive training programme for driving in the ATC control 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 bushes 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? MJ Airports and ACI courses.
6.2 Are your bird control staff working on the airfield: Continuously during high season.
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, with a screen in the ATC Tower; 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 rarely observed. 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: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Scania; 4X4; 2,500l type A; 2009 ; 1 unit. Scania; 6X6; 8,000l type A; 2009; 1 unit. SIDES VMA; 6X6; 9,500l type A; 1999; 2 units. Rosenbauer Panther; 6X6; 12,500l type A; 2013; 1 unit.
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? 25 October-30 March.
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? Two Aerodrome Duty Engineers, two workers and thirteen 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/snowplough, MOAZ DE-224, 2 units; front-loader, CASE and Liebherr, 2 units; tractor; various; 6 units; snow blower; Ovaraasen 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: 1. Runway; 2. Operational taxiways; 3. RFFS; 4. Apron 1; 5. Apron 2; 6. Apron 3; 7. Apron 4; 8. Service roads; 9. 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: four vehicles on the runway, two on taxiways. After two full-length runs on runway, two of the vehicles move to the taxiways, the other two 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? 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 2013/2014 Kemira Clearway liquid 120 tonnes and solid 180 tonnes per winter.
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 galvanised steel parts get in contact with vaporised 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. Not applicable.

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: Not applicable.
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 the apron, but by winter 2014/15 we will start to use the new de-icing platforms near the RWY.
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 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: One or two large sweepers 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: No.
16.4 Do you have any winter services equipment which you would like to sell? None.

ROME CIAMPINO

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Roma Ciampino – G.B. Pastine 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): As published in the Aviation Information Publication Italy: Runway 15: RWY length: 2,324m; RWY width: 300m; TORA: 2,204m; TODA: 2,429m; ASDA: 2,204m; LDA: 2,204m. Runway 33: RWY length: 2,324m; RWY width: 300m; TORA: 2,204m; TODA: 2,288m; ASDA: 2,204m; LDA: 2,204m. Total airport site area: 225 hectares.

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? Aeroporti di Roma (ADR) has had an SMS in place since 2007, and there is continuous improvement made to the hazard list following our hazard identification process and our risk management procedure.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Personnel are trained at first.
b) Inspection by airline, airport, and airplane handling agency personnel: Inspections twice a day (reported)
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Daily sweeping, and every time requested by safety officers.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Made by Aeroporti di Roma by means of first training personnel, and issuing safety brochures on airside procedures.
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 evaluations considering safety reports sent to SMS.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Safety officers control the behaviour of drivers during their inspections on the airside. Aircraft movements are controlled by the tower on the manoeuvring area, while on the apron the tower only gives instructions
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 simple SMGCS.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Guard lights; big red markings with 'RUNWAY AHEAD' and runway ID on the holding points; big red markings with 'NO ENTRY' and runway ID on the other runway exits.
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 companies with access to the manoeuvring area have representatives sitting in the Local Runway Safety Team. Recommendations from the team are disseminated to the airport community.
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 procedure for runway safety was first set up by the airport company, and then shared with members of Local Runway Safety Team.

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 company has a plan, reviewed annually, to reduce the presence of birds at airside.
6.1 Do your staff attend recognised bird control training courses? Every safety officer involved in bird control and reduction, is trained on a regular basis every two years. The training is carried out by an expert ornithologist and is on the job.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? From dawn to dusk there are trained personnel to control and scare away birds.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): The systems we use are: Long Range Acoustic Device (LRAD) – loud speakers on a car; distress calls; shot gun.
6.4 Do you carry out a bird strike risk assessment? The annual study is comprehensive of the Bird Strike Risk index (less than 0.3 in the year 2013).
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 they do.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Just few foxes. They are protected by law, so we need a permit to catch and take them away.

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: Aerodrome category for firefighting: CAT 8 ICAO; rescue equipment in compliance with CAT 8 ICAO. Capability of removal of disabled aircraft: towbard service by handlers. Equipment for lifting and transportation of all aircraft types up to code 'E' (with support from LIRF Airport in max 6 hours).

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 December-30 April.
8.2 Average annual days of snow: Once every five years.
8.3 Average snow depth: Few centimetres.
8.4 Maximum snow in 24 hours: Few centimetres.
8.5 Annual number of days of de-icing activities: 15 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 15 (just in case of snow).

11. PROCEDURES AND METHODS

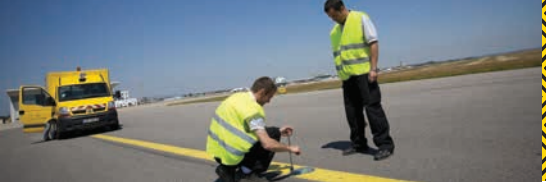
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1. First of all runway; 2. Then taxiways to the apron; 3. Commercial Aviation apron; 4. General Aviation apron.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Use of snow-sweeper on the runway, use of snow-sweeper on the apron.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? About 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: Safeway KA: about 8,000l a year with snowfall, about 2,000l a year without snowfall.
12.2 Comment on storage capabilities of the chemicals that you use: We can store all the chemicals we use in our workshop.
12.4 Have you experienced any corrosion problems with de-icers? No reports.
12.5 Have you employed any special means to economise on chemical use? Not necessary.
12.6 Do you have any other comments on experience with chemicals? Looking to possible devices to prevent ice from small water patches.
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: Not applicable.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Not applicable.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Not applicable.





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: Two FMC.
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? Surface Friction Tester.
15.2 Have you any comments on the reliability of friction indexes? We consider friction indexes reliable for standard measurements. We don't have enough experience with operational measurements.

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: New pavement de-icer sprayer.

ROME FIUMICINO

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Leonardo da Vinci-Fiumicino 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):
As published on the Aviation Information Publication Italy: Runway 07: RWY length: 3,307m; RWY width: 45m; TORA: 3,307m, TORA Int take-off A: 2,890m; TODA: 3,367m, TODA Int take-off A: 2,950m; ASDA: 3,307m, ASDA Int take-off A: 2,890; LDA: 2,892m. Runway 25: RWY length: 3,307m; RWY width: 45m; TORA: 3,307m, TORA Int take-off BC-CD: 2,485m; TODA: 3,367m, TODA Int take-off BC-CD: 2,545m; ASDA: 3,307m, ASDA Int take-off BC-CD: 2,485; LDA: 3,307m. Runway 16C: RWY length: 3,602m; RWY width: 45m; TORA: 3,602m, TORA Int take-off 16C: 2,825m, TORA Int take-off CD: 2,235m; TODA: 3,802m, TODA Int take-off 16C: 3,025m, TODA Int take-off CD: 2,435m; ASDA: 3,802m, ASDA Int take-off 16C: 3,025m, Int take-off CD: 2,435; LDA: 3,002m. Runway 34C: RWY length: 3,602m; RWY width: 45m; TORA: 3,002m; TODA: 3,062m; ASDA: 3,602m; LDA: 3,002m. Runway 16L: RWY length: 3,307m; RWY width: 45m; TORA: 3,902m, TORA Int take-off A: 3,620m; TODA: 3,962m, TODA Int take-off A: 3,008m; ASDA: 3,902m, ASDA Int take-off A: 2,948m; LDA: 3,902m. Runway 34R: RWY length: 3,902m; RWY width: 45m; TORA: 3,902m, TORA Int take-off A: 3,540m; TODA: 3,962m, TODA Int take-off A: 3,008m; ASDA: 3,902m, ASDA Int take-off A: 2,940; LDA: 3,902m. Runway 34L: RWY length: 3,902m; RWY width: 45m; TORA: 3,902m; TODA: 3,962m; ASDA: 3,902m; LDA: 3,902m.
Total airport site area: 1,554 hectares, airside area: 1,328 hectare, landside area: 226 hectares.

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?
Aeroporti di Roma has had an SMS in place since 2007, and there is continuous improvement made to the hazard list following our hazard identification process and our risk management procedure.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport's programme to control FOD in terms of:
a) Training: Courses for all staff present at airside.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Yes, we use sweeping, magnetic bars and 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): No, there aren't.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Surface Movement Radar (SMR) monitors aircrafts equipped with transponder.
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.
5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Driving licences and specific 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? A reporting system has been implemented for all stakeholders, and a special agreement with our ATM service provider has been set for the analysis of runway incursion. The SMS also applies and promotes a no blame culture in every safety initiative.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Organic waste and green area management, monitoring of the surrounding areas of the airport and management of artefacts.
6.1 Do your staff attend recognised bird control training courses? Yes, they attend yearly courses.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? From sunrise to sunset.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Long range acoustic devices, distress calls, Scarecrow, closed circuit cameras, and guns with blanks surrounding runways.
6.4 Do you carry out a bird strike risk assessment? Yes every year, and we use the risk index approved by the 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)? Yes they do, according to the service manual.
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: N°12 IVECO MAGIRUS SUPER DRAGON X8; airfield firefighting vehicle; 6X6; 11800l each one. N°1 ARISFIRE; command vehicle; 4X4. N°2 ASA 8 MERCEDES BAI; scale rapid evacuation. N°1 MERCEDES VARIO BAI; operations command vehicle. N°1 DANGEROUS GOOD ACCIDENT; command vehicle. All vehicles belong to the National Fire Brigate – Airport Department (Distaccamento aeroportuale del Corpo dei vigili del fuoco).
7.2 Future developments – are there plans to purchase or dispose of any equipment? There are no purchases of other AFF vehicles planned.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Airport firm doesn't have a Fire Training Simulator. There's a simulator that belongs to the National Fire Brigade.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 December-30 April.
8.5 Annual number of days of de-icing activities: 30 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 28 (22 Snow Emergency Squad Operators and 6 De-icer Operators).

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): Agricultural tractor, Fiat 540, 1 unit; runway de-icing sprayer, Iveco 115.17, 1 unit; runway de-icing sprayer, OM 90F, 1 unit; salt spreader, Epoke, 1 unit; compact sweeper, Schorling, 2 units; compact sweeper, Fresia, F90 ST, 2 units; de-icer truck, Safeaero, SDI 217, 3 units; de-icer truck, Safeaero 22EH, 1 unit; de-icer truck, Vestergaard Elephant Beta, 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:
1. Runway 16R/34L, taxiways and a portion of apron;
2. Runway 07/25 and taxiways and a second portion of apron; 3. Runway 16L/34R and taxiways.
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:
Safeway KF. 10,000l of product in water could achieve -20 degree Celsius freezing point.
12.2 Comment on storage capabilities of the chemicals that you use: 50,000l.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Mixing ratio used is 50% with water.
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: Not available.

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. Safeaero de-icer trucks, 4 units and Vestergaard de-icer trucks, 2 units.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? On parking area. In snow conditions on remote dedicated area.
14.3 Is glycol recovered? If so, please state methods: Our storage system is made of cubitainers, 1,000l each.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Sarsys devices.

16. FUTURE DEVELOPMENTS

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

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: 2,950m; TORA/TODA/ASDA: 2,450m; LDA. RWY16: 2,450mx45m; shoulders: 7.5m; total apron area: 60,520m; ramp area: 64,080m.
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 and runway lights CAT II, PAPI); 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 vehicles (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, 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 is 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 Gard Super Pro.
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: 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-1 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 de-icing 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, 5 units; solid and liquid spreader with snowplough, Mercedes-Schmidt SST-50, 1 unit; liquid sprayer, Mercedes-Schmidt ASP 25m span, 1 unit; snow blower, Rolba R3000, 1 unit; snow blower, Schmidt Supra 3000, 1 unit; snowplough, Mercedes-Schmidt 4m width, 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: 1. Runway 34/16; 2. TWY A and H; 3. 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 holdover times etc: Aviform L-50, 43,800l.
12.2 Comment on storage capabilities of the chemicals which you use: 60m3.
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: Not applicable.

14. AIRCRAFT DE-ICING

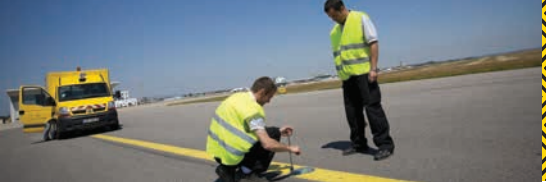
14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: 2x FMC LMD 2000.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-ice on the parking area.
14.3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

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SAAB SFT 340i.
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): Runway 09/27: RWY length: 3,600m; RWY width: 45m; shoulders: 2x7.5m; RWY strength (PCN): 70/F/B/X/T. Runway 27: TORA: 3,600m; ASDA: 3,600m; TODA: 3,600m; LDA: 3,600m. . Runway 09: TORA: 3,600m; ASDA: 3,600m; TODA: 3,600m; LDA: 3,300m. Landing aids for each RWY (e.g. CAT II): Radio aids: ILS: RWY 09 – CAT I; RWY 27 – CAT IIIB; DME, DVOR. 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; visual approach slope indicator systems: PAPI for each RWY. 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 to the SMS Manual the system should be updated every two years on the basis of the safety analysis and risks and hazards assessments. Last updated edition is from 2013. The Airport Operator is planning for the Budget 2014 to send its experts to take part in specialised ICAO training 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 apart 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 the Safety Management Department of Sofia Airport.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeper, Boschung Jet Broom BJB 800, 1 unit; sweeper, Bucher CityCat 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 ATC Sofia Tower. Aircraft movements are monitored by ATC Sofia Tower. All movement areas are monitored by ground radar.
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All marking, signs and lighting systems 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 on airport territory. Training and practice in 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 the Safety Management Department of Sofia Airport. A 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 are working continuously (24/7).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Stationary electronic bird deterrent system – Phoenix Wailer Mk III.
6.4 Do you carry out a bird strike risk assessment? Yes. 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. The Bird & Wildlife Control Unit deals with the 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: UNIMOG; Mercedes; 4X4; 1,000l/100l; 1 unit. SAURUS; Mercedes AS 12+250; 6X6; 10,000l/1,200l, 2 units. Tatra; CAS 815; 6X6; 8,000l/8,00l; 2 units.
7.2 Future developments – are there plans to purchase or dispose of any equipment? We are in the process of ordering one new Fire Fighting 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.
8.2 Average annual days of snow: January: 12; February: 10; March: 3; November: 1; December: 9.
8.3 Average snow depth: January: 10.4cm; February: 9.2cm; March: 0cm; November: 0cm; December: 4cm.
8.4 Maximum snow in 24 hours: January: 60cm; February: 43cm; March: 16cm; November: 3cm; December: 30cm.
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 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): 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, Boschung, 2 units; brush blower with plough, Fresia, 2 units; specialised snow cleaning combined machine, Boschung, 1 unit; specialised snow cleaning combined machine, Bucher, 2 units; spreader, IFA, 1 unit; de-icing machine, Boschung, 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: 1. Runway; 2. Taxiways (entrance and exit); 3. Apron; 4. Other Taxiways.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The general method is: First push out snow with ploughs and brushes, then throw out the snow with the rotor sweeper. Use spreader if necessary and finally friction testing
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 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 holdover times etc: Carbamid (urea), 200t.
12.2 Comment on storage capabilities of the chemicals that you use: 200t.
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.
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.

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: Three GH operators provide aircraft de/anti-icing treatment at Sofia Airport – Sofia Airport, Swissport Bulgaria and Goldair Handling Bulgaria. The following vehicles and fluids are in use: GH operator Sofia Airport: Ford 1800TM, 2 units; FMC TEMPEST II, 2 units; de/anti icing fluid, Type II Kilfrost ABC K-Plus. GH operator Swissport Bulgaria: JBT Tempest, 3 units; de/anti icing fluid, Type I/IV, Kilfrost. GH operator Goldair Handling Bulgaria: JBT TM 1800, 3 units; de/anti icing fluid Type II, Kilfrost UK ABC 3.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? We use two dedicated platforms for aircraft de-icing (PAD): PAD 'EAST', with one position for treatment of aircraft ICAO code E; PAD 'WEST' is for simultaneous treatment of two aircrafts ICAO code C or one aircraft ICAO code 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 and 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

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): Runway 05/23: RWY length: 2,550x45m; TORA: 2,550m; TODA: 2,550m; ASDA (Runway 05): 2,800m; ASDA (Runway 23): 2,550m; LDA (Runway 05): 2,550m; LDA (Runway 23): 2,390m.
2.2 Landing aids for each RWY (e.g. CAT II): CAT-I RWY 05.

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 training.
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 FOD. 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 its own software solution called Galiot. Every piece of FOD that is found needs to be filed in Galiot. In 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 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 set up the reporting procedures 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: Habitat management focus: Identification of wildlife attractants (sources of food, water and shelter) on and in the vicinity of the airport and their elimination or exclusion.
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 module in the 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 the Wildlife Management module 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: Heavy fire fighting vehicle; MAN; 6X6; 8,500l, 1000l; 1 unit. Heavy fire fighting vehicle; MERCEDES; 9000l, 1000l; 1 unit. Heavy fire fighting vehicle; MERCEDES; 8500l, 1000l; 1 unit. Commander vehicle; Jeep Cherokee; Toyota Land Cruiser; 1 unit. Commander vehicle; Jeep Cherokee 2.8 CRD; 1 unit. Trailer; Zigler with medical equipment; 2.5t; 1 unit.
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 a Fire Training Simulator.

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: One to two times per year – 5 days in total.
8.3 Average snow depth: Few centimetres (up to 2-3cm).
8.4 Maximum snow in 24 hours: Nil.
8.5 Annual number of days of de-icing activities: 2-3 days.

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

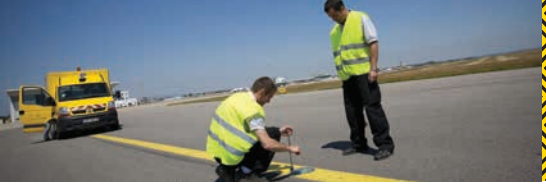
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow plough, Rasco PK3.2, 1 unit; snow plough, Rasco Vertus 3.2, 1 unit; tractor, Valtra N101H, 2 units; solid de-icing chemical dispenser, Rasco TRP1.0 EPOS 5, 1 unit; towed liquid de-icer tanker, Rasco LIQUID 8.0, 1 unit; liquid de-icing preparation, Rasco MMS 6.0, 1 unit; liquid de-icing solution tank 10000l and lots of other equipment available under the contract with the road company.

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: Order of priority of snow clearance: 1. Runway; 2. Taxiways; 3. Apron; 4. Curb; 5. Landside.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: A fast moving plough formation moves the snow from the inner part of the paved surface to the outer part without covering the lights.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? 2 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, 2 tons used last season, if applied on time it is very effective – holdover time up to 12 hours.
12.2 Comment on storage capabilities of the chemicals that you use: 10 tons.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids,





"blow-away factor" etc: Depending on meteo situation/forecast and movement area surface status, solid or liquid de-icers are applied.
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: Nil.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? Nil.

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: 1x de-icing vehicle – Stadler, Type IV- Clariant
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? On 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? Runway Surface Friction Tester ASFT Skoda Octavia CFME (500l).
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, change or improve.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: We plan to purchase more FOD cleaning units, self-propelled conveyer-belt loaders (2 units), a self-propelled air start unit, a boarding/de-boarding vehicle for passengers with reduced mobility, taxiway and apron edge lights, and 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: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

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: True BRG: 090.27 degrees; Dimensions of RWY (m): 3,070 x 45; Strength (PCN) and surface of RWY and SWY: 60/F/B/X/T asphalt/concrete; THR coordinates: 592447.97N; RWY end coordinates: 0244836.55E, 592447.49N; THR Geoid undulation: 0245135.32E, GUND 60ft; THR elevation and highest elevation of TDZ precision APP RWY: THR 129ft. TORA: 3,070m; TODA: 3,370m; ASDA: 3,130m; LDA: 2,820m. Displaced THR 250m. RWY 26: True BRG: 270.32 degrees; Dimensions of RWY (m): 3,070 x 45; Strength (PCN) and surface of RWY and SWY: 60/F/B/X/T asphalt/concrete; THR coordinates: 592447.49N; RWY end coordinates: 0245135.32E, 592448.00N; THR Geoid undulation: 0244820.49E, GUND 60ft; THR elevation and highest elevation of TDZ precision APP RWY: THR 131ft. TORA: 3,070m; TODA: 3,130m; ASDA: 3,130m; LDA: 3,070m. Apron A: Asphalt/concrete; Strength PCN: 81/F/A/X/T; Apron B: Asphalt/concrete; Strength PCN: 32/F/B/Y/U; Apron C: Asphalt/concrete; Strength PCN: 32/F/B/Y/U. Apron A: 256 510sqm; Apron B: 5,814sqm; Apron C: 8,941sqm. TWY A: Width: 23m; Asphalt/concrete; Strength PCN: 78/F/A/X/T; TWY B: Width: 23m; Asphalt/concrete; Strength PCN: 71/F/A/X/T; TWY C: Width: 23m; Asphalt/concrete; Strength PCN: 26/F/A/X/T; TWY D: Width: 18m; Asphalt/concrete; Strength PCN: 26/F/B/X/T; TWY E: Width: 23m; Asphalt/concrete; Strength PCN: 47/F/A/X/T; TWY F: Width: 23m; Asphalt/concrete; Strength PCN: 97/F/A/X/T.

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; IP cameras).
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? Manoeuvring 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, pyrotechnics, Clarratts Scarey Man, Purivox gas cannon system.
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 9,000l; foam 1,000l; renovated in 2011; pump 6,000l/min. LJ21 Scania 113h; 6x6; 1996; reg. nr 132AIR; Rosenbauer; water 9,000l; foam 1,000l, renovated in 2011; pump 6,000l/min. LJ31 Scania 480R; 6x6; 2009; Reg nr. 137BCE; Wawrzaszek; water 9,000l; foam 1,000l; pump 6000 l/min.
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. Two new fire trucks in 2014 (tender already finished).
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: 28cm.
8.4 Maximum snow in 24 hours: approx. 50cm.
8.5 Annual number of days of de-icing activities: 35 days.

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, 12 units; 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 units; de-icer equipment: spreader for solid and liquid Schmidt Stratos, 3 units; friction tester: ACE skiddometer BV-11 – 3 units; tractors: Valtra with several functions, 4 units; Bobcat, 1 unit; Wille 455, 1 unit; 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: 1. 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 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: Unisalt SF 200 tons. Unisalt BA150 tons. Unisalt is effective and reacts very quickly.
12.2 Comment on storage capabilities of the chemicals that you use: We store approximately 30-60 tons of Unisalt SF (dry) and 60 tons of Unisalt BA (liquid).
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 (six 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 and cost effective.

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 four 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 – 3 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? Yes, we upgrade them every year.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, two fire trucks.
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

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: 2,500mx45m; TORA: 2,500m; total apron area: 46,212sqm; Commercial Aviation apron: 450mx76m; General Aviation apron: 156mx77m.
2.2 Landing aids for each RWY (e.g. CAT II): Approach and runway lighting: RWY 14 – PAPI both 3°, THR LGT, colour: WBAR green; RWY 32 – 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 the 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, and/or specific courses (such as Ramp Agent Training and GSE Operator Training).
b) Inspection by airline, airport, and airplane handling agency personnel: At least once a year inspections and/or audits are performed by airlines.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airfield sweeper – FOD Boss – is used.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Maintenance of movement and manoeuvring area is the responsibility of the airport operator Tivat Airport (Airports of Montenegro).

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Not applicable (radio communication only).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Not applicable.
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): Not applicable.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Not applicable.
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? Not applicable.
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? Not applicable.

6. BIRD AND WILDLIFE CONTROL

6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: The 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 guns and shotguns.
6.4 Do you carry out a bird strike risk assessment? Not applicable.
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: Rosenbauer Panther; MAN; 6X6; 12,000l water, 1,500 foam; 2004, 2 units.
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 applicable.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? Not applicable.
8.2 Average annual days of snow: Not applicable.
8.3 Average snow depth: Not applicable.
8.4 Maximum snow in 24 hours: Not applicable.
8.5 Annual number of days of de-icing activities: Not applicable.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Not applicable.

10. WINTER EQUIPMENT INVENTORY

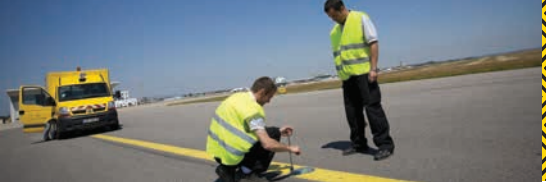
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Not applicable.

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: Not applicable.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Not applicable.
11.3 After moderate snow, how quickly do you expect to achieve 'black top' on the runway? Not applicable.

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 applicable.
12.2 Comment on storage capabilities of the chemicals that you use: Not applicable.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc: Not applicable.
12.4 Have you experienced any corrosion problems with de-icers? Not applicable.
12.5 Have you employed any special means to economise on chemical use? Not applicable.
12.6 Do you have any other comments on experience with chemicals? Not applicable.
12.7 Do you use other chemicals or sand on operational areas? Not applicable.

13. ICE WARNING SYSTEMS

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

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: Not applicable.
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Not applicable.
14.3 Is glycol recovered? If so, please state methods: Not applicable.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? ASFT T10 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? Not applicable.
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.

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 m2, 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 airport's 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 enter the parking stand.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Continuous sweeping from 6am to 3am. 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 manoeuvring 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 (manoeuvring 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-punitively (safety report).

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? Internal Training.
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): 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 fulfill 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 is used by all Austrian airports.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 October-31 March.
8.2 Average annual days of snow: 20.
8.3 Average snow depth: 81cm average over the last 10 years.
8.4 Maximum snow in 24 hours: Season 2012/2013: 45 cm.
8.5 Annual number of days of de-icing activities: 131.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 360 airport employees in total (230 airport employees and 130 sub-contracted). Approimately 63 airport employees and 15 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 units; Jetbroom 9000, Boschung, 8 units; Snowblower, Kahlbacher, 9 units; Snowblower, Schmidt, 3 units; Snowplough, Mercedes Unimog, 5 units; Tractor with Snowplough, Steyr, 11 units; Liquid Deicer, Schmidt, 15000l, 3 units; Multi Deicer, solid wet, Schmidt-Nido, 1 unit; Small Multifunction Deicer with plough or brush, Boschung Pony, 6 units; Snowplough, Pfau/Schmidt, 3 units; Small Tractor with Snowplough and Deicer, Iseki; Tractor with Snowplough and Deicer, Reform.

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. RWYs and apron; 2. TWYs.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY: 12 JetbroomRunway, 3 Snowblower, 2 Unimog with plough – one run concept. TWY: RWY vehicles according to TWY width. APRON: 6 Jetbroom 9000, several snowploughs 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 75 minutes, 'black top' within 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: Vehicles acc. to 10.1.
12.2 Comment on storage capabilities of the chemicals that you use: 500,000l liquid, 40,000kg 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 environmentally friendly and is consequently less effective and very expensive.
12.7 Do you use other chemicals or sand on operational areas? Special ICAO Split.

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: 10x Safeaero 220 and 5x 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: No.
16.4 Do you have any winter services equipment that you would like to sell? No.

WARSAW

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): Runway 11: RWY length: 2,800m; TORA: 2,300m; TODA: 2,300m; ASDA: 2,560m; LDA: 2,560m; RWY width: 50m; shoulders: 2x5m; MAG BRG: 110 degrees. Runway 29: RWY length: 2,800m; TORA: 2,800m; TODA: 2,800m; ASDA: 2,950m; LDA: 2,300m; RWY width: 50m; shoulders: 2x5m; MAG BRG: 290 degrees. Runway 15: RWY length: 3,690m; TORA: 3,690m; TODA: 3,690m; ASDA: 3,690m; LDA: 3,690m; RWY width: 60m; shoulders: 2x5m; MAG BRG: 147 degrees. Runway 33: RWY length: 3,690m; TORA: 3,690m; TODA: 3,690m; ASDA: 3,690m; LDA: 3,030m; RWY width: 60m; shoulders: 2x5m; MAG BRG: 327 degrees. Total apron area: 342,564sqm.
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? The Safety Management System section's main activities since its establishment have focused on ensuring the safety of aerodrome operations (including risk and hazards appraisal) during the biggest programme of infrastructure development in the history of Warsaw airport. The works are due to finish by 3 November 2014. Other duties of the section include safety training of all enterprise employees, as well as distributing training materials to all companies active at Chopin Airport. Implementation of dedicated SMS software has been postponed – operational status is to be reached by the end of 2015. Safety Management System plans for the next year (2014) to implement ICAO Annex 19 and new EASA rules regarding airports.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

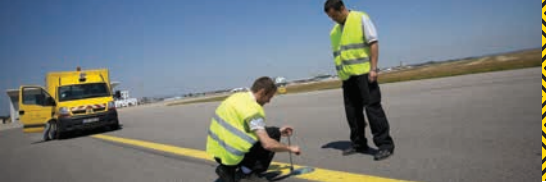
4.1 Describe your airport's programme to control FOD in terms of:
a) Training: All employees working at the apron and manoeuvring area are trained before obtaining permission to work. Training programme comprises the procedures necessary to be followed during airside activity. FOD prevention procedure is among them.
b) Inspection by airline, airport, and airplane handling agency personnel: Every person on 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 are 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): The Maintenance Service makes periodical and on request mechanical sweepings of an airside concrete or grass surface. 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 the primary method is visual monitoring done by ATC. Surface Movement Radar (SMR) is treated as advisory measure. Additionally the 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 areas Taxiway M3 will be closed in 2014. It will be replaced by a new, rapid exit taxiway to be built outside of the 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, and continuously illuminated stop-bars implemented in the most dangerous areas (hot spots) – several times they were 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? The Manual on Vehicular and Personnel Movement Regulations at Warsaw Airport describes the rules for vehicular and pedestrian traffic – which 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 the 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 a height that is not attractive to birds; the cutting of trees at the airport; removal of bird nests from the trees around the airport; acoustic bird dispersal system installed at each approach area and at runway crossing, 10 units; use of acoustic bird dispersal arrangements – ULTIMA V3 and PATROL TWO; use of pyrotechnic shotgun; development of a map of the presence of different kinds of birds; the development of a map of the migration routes of birds near the airport; a control on pigeon breeding around the airport – with the assistance of the City Guard and land owners.
6.1 Do your staff attend recognised bird control training courses? Bird Management Conference and Workshop, 2011, London Luton.
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): Acoustic bird dispersal system (recorded distress calls), BG SUPER PRO AMP BirdControl, 10 units; ULTIMA V3 Scarecrow Bio-Acoustic System; PATROL TWO, 2 units; pyrotechnic shotgun, mod. 36 Combat, 1 piece; falconer, six falcons and one 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)? The presence of different kinds of birds on or close to manoeuvring area is registered and analysed 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. The 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; 9,000l; 2007. Eagle; E-One; 4X4; 5,000l; 1999. Tiger; E-One; 6X6; 9,000; 2007. Eagle; E-One; 6X6; 12,000l; 1999. Eagle; E-One; 6X6; 12,000l; 1999. Eagle; E-One; 6X6; 12,000l; 1999. Panther; Rosenbauer; 8X8; 12,600l; 2012. Panther; Rosenbauer; 8X8; 12,600l; 2012.
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 not present.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 1 November-15 April.
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 employees 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): Snow removal vehicles, 16 units: truck tractor with a plough, Mercedes-Benz; Overaasen RS 400; Schorlig P17; runway sweepers, Overaasen RS 200. Compact sweepers with sprinkler-spreaders, Boschung BJB 8000, 5 units; runway sweeper, Schmidt CFB 5500 S, 1 unit, supported by two tractors, Unimog, with MF 33 snow ploughs and sprinkler-spreaders, Schmidt NIDO N90. Sprinkler-spreaders, 4 units, including Schmidt ASS 6000; Kupper Weisser STA 95; Dammann FEA 20036; Dammann-Boschung FEA 2024. Snow Blowers, 4 units including Bucher Rolba 3000, 2 units; Kahlbacher KFS 160M-HY, 1 unit; Ural-Rotor, 1 unit. Loaders/excavators to enable the efficient loading and unloading of granulated chemicals, JCB, 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: 1. Runway 11/29 or Runway 15/33, depending on TWR, and at 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: Snowplough and snow sweeper 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? Dependant 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 used at Warsaw Airport.
12.2 Comment on storage capabilities of the chemicals that you use: Liquid de-icer is stored in four 60, 90 and 48 litre 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.
5.2 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 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 sprinklers 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

ZURICH AIRPORT

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: 2,500m; TORA: 2,500m; TODA: 2,560m. RWY 14/32: 3,300m; TORA: 3,300m; TODA: 3,360m. RWY 16/34: 3,700m; TORA: 3,700m; TODA 3,760m. All RWYs 60m in width. Surface area data: RWY 10/28: 150,000sqm; RWY 14/32: 198,000sqm; RWY 16/34: 222,000sqm. TWYs: 550,000sqm. Apron: 900,000sqm. Technical area: 143,000sqm.
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 received the Airport Certification in June 2006. Thus, it was 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, Safety Management (including hazard and 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, safety monitoring (including an occurrence reporting and investigation process) and finally, continuous improvement (including safety audits, spot checks and safety assessments).

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 training and the distribution of information such as 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 seven days a week from 3.30 to 21.30. During the remaining time an on-call service is established. The early shift cleans all aircraft stand surfaces at least once daily. 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 are swept by the 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, though 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 centreline 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 ASDEs 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 centreline 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, flyers and the runway safety reports) to address identified hazards and to promulgate incident investigation findings. Furthermore, licensing requirements were introduced for all vehicle drivers on the airfield (including initial training, skills test and a 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 takes place every three years to monitor trends in runway incursion numbers and effectiveness of measures is published. Additionally, the Runway Incursion Investigation Team investigates every single runway incursion event and interviews involving partners on a voluntary basis.

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. Cutting of the long grass is stopped by the end of September, so that the grass surfaces can regenerate to the necessary height of 15-20cm. No fertilisations. 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. Mouse abatement is carried out with traps as well as a 4km mice fence with self-service traps (fox). Additionally, there is an 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 was performed in 2011 by the German DAVVL bird strike experts for the co-workers of the Airport Authority. Annual refreshers also take place, while 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? Continuously, at least every hour. Outside air traffic hours bird control staff are 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 other firearms permitted for hunting 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 one or two 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 is audited at least once a year. Additional, daily bird scaring tours are carried out before the departure 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 ornithological station in Sempach (if necessary DNA analysis is also made). The gamekeepers also 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 us to identify a bird strike rate per 10,000 movements 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; 8X8; 12,500l water, 1,500l extract; 2005/2006; 5 units. Crash Fire Tender; MANSK 14-1005 MAN Kronenburg; 8X8; 8,000l water, 1,500l extract; 1994. Command vehicle; Volvo XC90; 4X4; 2006. Passenger vehicle; Skoda Octavia; 4X2; 2007. Fire engine; Scania Vogt; 6X6; 5,500l water, 1,000l extract, 1,000kg powder, 90kg CO2; 2003; 2 units. Scania P420 Rusterholz; 4X4; 2,680l water; 2007. Extinguishing vehicle for multi-storey car park; Mercedes Vito 115CDI; 4X2; 400l water, 12l foam extinguisher; 2010. Pioneer vehicle; Mercedes Brändle; 6X6; 1998. Pioneer vehicle; Mercedes 1634AF Rusterholz; 4X4; 1998. Auto Aerial Ladder; Mercedes Econic 1833; 4X2; 2009. Passenger evacuation stairs; Mercedes Contrac; 4X4; 1993. Respiratory protection vehicle; MAN M90 Walde; 4X2; 1996. Oil protection vehicle; Mercedes 412 D; 4X4; 1999. Oil and water protection vehicle; Mercedes 416CDI; 4X2; 2007. Hose transport vehicle; Mercedes Unimog Hänni; 4X4, 1979. Lighting vehicle; Mercedes 409 D; 4X4; 1987; 2 unit. Mercedes Unimog Hänni; carbonic acid vehicle; 4X4; 1981. Cross-country stacker; Manitou Perkins; 4X4; 2002. Crew transporter; Mercedes Sprinter; 4X2; 2002. Crew transporter; Mercedes 316CDI; 4X2; 2012. Transport vehicle; VW T5; 4X2; 2005. Truck with crane; Mercedes 3346; 6X6; 2008. Loading vehicle for container; Scania R124; 8X4; 2001. Transport vehicle; FIAT Doblo Cargo; 4X2; 2005. First Responder vehicle; Mercedes Vito 116CDI; 4X2; 2012.
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, new Crash Fire Tender, seven vehicles, 2015-2020.
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

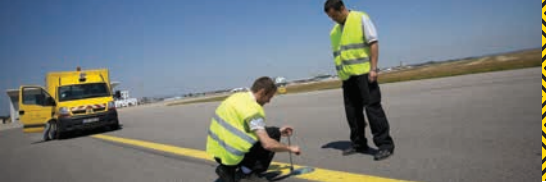
8.1 What is the designated period of winter readiness? Winter readiness from 15 October–14 April.
8.2 Average annual days of snow: Annual days of snow approximately 29 days.
8.3 Average snow depth: Average snow depth 17cm.
8.4 Maximum snow in 24 hours: 17cm (17 December 2012).
8.5 Annual number of days of de-icing activities: De-icing activities during 29 days (only de-icing).

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 130 airport 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): Snow clearance airside (Flughafen Zürich AG owned equipment): Compact jet sweeper, Boschung, plough 6m, 9 units; compact jet sweeper, Boschung, plough 8.4m, 14 units; rotary snow, Øveraasen, TV 1520, 3 units; rotary snow, Rolba, R-10,000, 2 units; rotary snow/loader, Bucher, R-600, 1 unit; loader/blower, Schmidt/Supra, 3 units; snow-blade*, Ramphog 6m, 1 units; snow-blade*, Øveraasen 6m, 1 unit; snow-blade*, Ammann 6m, 1 unit; plough**, Peter/Zaugg 4m, 32 units; truck (for plough), Mercedes, 6 units; *trax from contractors, **truck from contractors. De-icing vehicles: Multi de-icer, Küpper-Weisser 40m, 4 units; multi de-icer, Küpper-Weisser 8m, 2 units; multi de-icer, Pony 4m, 2 units; multi de-icer Tractor 4m, 1 units. Snow-clearance landside: Plough/gritter, Unimog, 1 units; plough/gritter, Mercedes, 1 units; plough/gritter, John Deere, 3 units; plough*, various, 2 units; plough/holder, Zaugg 1.5m, 1 unit; plough/pony, Zaugg 1.5m, 2 units; *truck from contractor.





Contractors airside snow deportations: Deportation trucks, various, 13-30 units; wheel loader, various 3m3, 6 units; Rolltainer, various, 40m3, 3 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: Air and landside have equal priorities. First priority airside: RWY 16/34, 3.7 km (incl. TWYs); RWY 10/28, 2.5 km (incl. TWYs); RWY 14/32, 3.3 km (incl. TWYs); 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 seven trucks (mounted plough and blow-sweeper each), two trucks (mounted plough only), one rotary snow, and one 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.
12.2 Comment on storage capabilities of the chemicals that you use: Storage capacity 900,000l – 24 hour additional supply guaranteed.
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 have been used. It may not be disclosed.
12.4 Have you experienced any corrosion problems with de-icers? Some problems with corrosion of vehicles.
12.5 Have you employed any special means to economise on chemical use? Heated aircraft stands at 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; three sensors per RWY (nine in total), one sensor 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 as part of 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 microorganisms in the soil. The highly concentrated part is distilled and recycled; the rest as carbon denitrification goes to the Zurich waste water treatment or to 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.

ZVARTNOTS

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

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Zvartnots 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): Runway 09: TORA: 3,850m; TODA: 4,250; ASDA: 3,850m, LDA: 3,850m. Runway 27: TORA: 3,850m; TODA: 4,150m; ASDA: 3,850m; LDA: 3,850m.
2.2 Landing aids for each RWY (e.g. CAT II): Runway 09 – CAT II; Runway 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, where feasible, should join airport staff in daily airside inspections. This practice helps increase familiarity with local airfield conditions, and promotes effective communication between airport and airlines.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintaining control of FOD includes using several methods – sweeping and 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 cooperation 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? Six 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 the prevention of bird strikes in the 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, bird strikes reduced by 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 works 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 BirdXpeller 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: Crash Fire Rescue; Striker-3000; Oshkosh; 6X6 (Oshkosh); 11,350l water, 1,590l AFFF, 225kg dry chemical; 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 center, 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 November to March
8.2 Average annual days of snow: 10-15 days.
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 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 40.

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, Scania Vammas, 3 units; snow plough, PM-130, 11 units; snow collector, D-902, 1 unit; snow collector, DE-226, 1 unit; snow plough and liquid chemical reagent machine, KAMAZ PM-116, 1 unit; ZIL-4502 (N70) liquid chemical reagent machine, 1 unit; ZIL-130 (N95) solid chemical reagent machine, 1 unit; grader (N72), 1 unit; loader (N107), 1 unit; dump trucks, 3 units; universal mechanism, Bobcat, 1 unit (mini loader); Mitsubushi L-200, 1 unit; Gazel N27, 1 unit; Nissan N255, 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: 1. Runway; 2. Taxiways, main taxiway; 3. Aprons; 4. Holding bays; 5. 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 RWY axis-line to the edges, then the collected snow of the edges is cleared by the rotors. The cleaning process can be changed according to wind direction.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? RWY snow cleaning must be done immediately when the snow begins, between take off/landing intervals.

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: Chemical reagents used last season: Solid: ANS (nearly 6 tons) and Clearway SF3 (nearly 15 tons). Liquid: Clearway F1 (nearly 3 tons), Safeway KA-HOT (nearly 13 tons). The mentioned chemical reagents can be used till -400c, except granular ANS chemical reagent (-120C).
12.2 Comment on storage capabilities of the chemicals which you use: Solid: nearly 78 tons. Liquid: nearly 56 tons.
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 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 normal 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 none.
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? Skiddometr 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.





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SWISS PRECISION

CATEGORY: DE-ICING

PROVIRON EXPANDS INTO AIRCRAFT DE-/ANTI-ICING

At Proviron, snow and ice control is an art combined with science. For over 15 years, Proviron has successfully established itself in the market as a reliable and trusted manufacturer/supplier of environmentally friendly runway and commercial de-icers. Proviron supplies acetate and formate based de-icers in both liquid and solid form to the European and Asian aviation industry.

In 2013, Proviron stepped into a new de-icing era when the company entered the aircraft de-/anti-icing fluid (ADF) market. Proviron teamed up with its long-term partner Cryotech (USA), a world leader in de-icing technology, to manufacture (under license) Cryotech's ADF products in Europe. Cryotech's ADF products are very popular with airline operators in the US. Proviron will manufacture the full range of ADF products (Type I, II and IV), all of which are FAA approved and fully comply with the latest SAE AMS requirements.

By adding aircraft de-/anti-icing products to its already successful range of runway de-icers, Proviron has strengthened its position as one of the leading companies in the de-icing industry. Proviron is very focused on customer service and flexibility, with a team of specialists ready to assist you with your inquiries.

Proviron

kemira

KEMIRA'S ENVIRONMENTALLY FRIENDLY DE-ICERS

Kemira supplies the world's airport industry with a wide range of organic salts designed as sound solutions for the environment while at the same time ensuring safe take offs and landings, even in harsh winter conditions.

The company specialises in the production of organic salts based on acetic and formic acid for runway de-icing application. Other important activities include the development, production and marketing of those products, under the Clearway trade name, available in both liquid and solid form.

Solid de-icers are used in severe de-icing conditions such as freezing rain and heavy snowfall and are most effective when used in combination with liquid products. Liquid Clearway products are used mainly for preventive use. The product creates a thin layer between the runway surface and the ice, therefore ice and snow does not bind to the runway and mechanical cleaning is easier.

Kemira offers industry-approved products, strong R&D and flexible production capacity in several locations. The company has recently expanded its production capacity in The Netherlands and has an excellent logistical network, which creates the ability to deliver the product to customers within 24 hours.

Kemira has a corporate reputation for consistency and quality, backed up by its ISO 9002, ISO 4000 and ISO 18001 certifications.

AIRPORT SNOW CLEARANCE WITH SWISS PRECISION FROM ZAUGG

Powerful ZAUGG P21 airport snow sweepers ensure the clearance of runways and other airside manoeuvring areas – quickly, efficiently and with Swiss precision. With operating speeds of over 40km/h the necessary clearing performances are achieved. Whether for the clearance of snow, slush, ice or dirt in winter or for blowing away dirt in the summer – the snow sweepers from ZAUGG are suitable in every respect. These highly efficient airport devices are available with working widths of over 6m and in towed versions or permanently installed on a modified truck chassis.

ZAUGG SnowShark wedge-shaped plough for the rapid and simple clearance of snow around the runway and taxiway edge lighting at airports and airfields.

ZAUGG Rolba self-propelled snow blowers for airports are extraordinarily dynamic and resilient thanks to their powerful engines. The well-known and worldwide proven ZAUGG Rolba 2-stage snow blowers are ideally suited to all snow types. The high performance of the snow blowers is based on the generous dimensioning of the units. High engine performances can be converted into impressive clearing performances thanks to the optimum matching of cutter and blower housing.

The powerful ZAUGG Rolba R3000 is the ideal tool for clearing snow on airport runways. The arctic version can also be used at temperatures as low as -50°C.

The new ZAUGG Rolba R5000 is a further development based on the predecessor model. Zaugg has completely reconceived and redesigned the new R5000 and manufactures it at its works in Eggiwil, Switzerland. The new Rolba R5000 from Zaugg has a drive unit that propels the two axles separately. The driver's cab is mounted on silent blocks directly above the snow blowing unit, ensuring outstanding visibility.



ZAUGG Rolba self-propelled snow blowers for airports are extraordinarily dynamic and resilient thanks to their powerful engines.

CATEGORY: WINTEREQUIPMENT

WORLDWIDE SUCCESS FOR BOSCHUNG GROUP

In 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 maintenance of airports, roads and municipalities.

The Boschung Group counts nowadays a total of nearly 650 employees and well-established branch companies in Germany, France, Austria, USA, Russia and China. Furthermore a network of experienced agents and partners operating worldwide are its guarantee of a successful and promising future.

The Jetbroom – a special, unique and extremely economical all-year multifunctional sweeper/blower machine – is one of the Group's best sellers on airports worldwide, and is also available in a towed version (Jetbroom-T). Various spreaders and de-icers (solid, liquid, solid/liquid) for all purposes, snow blowers/cutters, multi-purpose and multifunctional carriers, and compact and mounted sweepers are rounding up its product range for an efficient maintenance service.

Together with Boschung Mecatronic Ltd. – specialised in ice early warning systems, automatic thawing agent spray systems, BORRMA-web and the brand-new Runway Contaminant Depth measurement system – the Boschung Group supplies the whole equipment needed for the maintenance of various working surfaces from a single source – demonstrating perfectly its 'Surface Condition Management' (SCM) philosophy!



The Jetbroom – a special, unique and extremely economical all-year multifunctional sweeper/blower machine – is one of Boschung Group's best sellers on airports worldwide.

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CATEGORY: FRICTION TESTING

ACTIVE MONITORING OF RUNWAY FREEZING POINT WILL SAVE 30% OR MORE IN DE-ICING COST

Safety is the primary objective for most roads and runways all over the world. Weather is a major, unpredictable variable. Storms, rain, poor visibility and icy conditions reduce road and runway safety. This makes weather management a key component for any operator. Using the right sensing and forecasting equipment enables you to plan and execute the proper and safe responses to varying road and runway conditions. Moreover, the user will ease the environmental impact and reduce cost. Early warning signals save time, money and the environment, because de-icing and snow removal is precisely targeted, more effective and less wasteful.

ASFT offers a wide range of systems for roads, railways and airports, including weather and surface condition monitoring, warning and forecasting. Its systems have been operational around the Swedish road network for 30 years, and have remarkable reliability, modular design for easy maintenance and, most importantly, are built on an open architecture which provides a versatile platform to build on, and the flexibility for unlimited integration and future development.

Acting as support in the decisions on where and when to use de-icing, the use of sensor data will aid and optimise winter operations on roads and runways. And the use of active freezing point surveillance as a base for the need for de-icing can reduce the use of de-icing by up to 30%!

In conclusion – the use of proper forecasting tools improves road safety, reduces cost by making operations more effective and lessening usage of de-icing, thus also reducing the negative environmental effects.

ASFT offers a wide range of systems for roads, railways and airports, including weather and surface condition monitoring, warning and forecasting. Using the right sensing and forecasting equipment enables operators to plan and execute the proper and safe responses to varying road and runway conditions.

IT HAS HAPPENED BEFORE, AND IT WILL HAPPEN AGAIN – WINTER!

Many airports are inadequately prepared to operate in snow and extreme winter conditions due to limited training capabilities and experience. The result is accidents, increased costs and temporarily closed down operations.

The rewards of having a comprehensive action plan in place, together with properly trained and experienced field staff, by far outweigh the time and money spent when the winter approaches.



LHG Learning Center aims to increase the safety and efficiency of the world's airports and is made up of three pillars: Conference, Institute and Forum (CIF).

LHG Learning Center aims to increase the safety and efficiency of the world's airports and is made up of three pillars: Conference, Institute and Forum (CIF).

The Annual Conference gives airports, manufacturers, and others in the industry a chance to get together in order to attend lectures, take part in discussions to identify common challenges, look at and try out new products and get a closer look at the training facilities. The next conference will be held on 18-21 March 2014.

The Institute offers hands-on training in a capacity free environment. The training is always customised and based on every customer's individual needs.

The Forum is a permanent network through which a continuous dialogue and work for joint development of standards and regulations are held.

CATEGORY: WINTER EQUIPMENT

THE EFFICIENT JCB FASTRAC – CUTS CANCELLATIONS, AND GRASS

The JCB Fastrac offers a year-round versatile airport maintenance solution – proven at airports such as Belfast City, Heathrow, London Luton and London City – and with heavy snow fall affecting airports throughout Europe and North America over the last few years, there is no better time to discover the machine that will keep your airport running, whatever the weather.

Whether it's a blower, brush or plough, the Fastrac works with multiple attachments for all-round snow clearance duties. With front, rear and deck mountings as well as full power front and rear PTOs, the Fastrac is perfect for operating a wide range of snow and ice clearance equipment, making it an integral machine for winter airport maintenance.

Travel speeds of up to 80kph (50mph) provide rapid response rates and minimum down time, while selectable four-wheel drive and differential locks provide outstanding traction in difficult conditions. Truck standard ABS braking and excellent all round visibility to maximise operational safety and control. Spacious, well-appointed two-man cab with full suspension system ensures optimum operator comfort, whilst helping to minimise fatigue during long shifts.

A high performance prime mower provides year-round versatility that offers compatibility with a range of specialist attachments for both winter and summer maintenance, without compromising on performance.

JCB also has a wide range of equipment to help clear snow from taxiways, parking areas and passenger access points: telescopic handlers, wheel loading shovels, backhoe loaders and Teletruks. Plus, there is excellent service and parts support through its worldwide dealer network.



Whether it's a blower, brush or plough, the JCB Fastrac works with multiple attachments for all-round snow clearance duties. For more information visit www.jcb.com/airports/.

CATEGORY: WINTEREQUIPMENT

ØVERAASEN LAUNCHES NEW 'PERFORMANCE LINE'



Øveraasen's new 'Performance Line' features a futuristic and aerodynamic design that is combined with well-functioning, reliable and proven components.

For more than a hundred years, Øveraasen has dedicated its resources towards the development of winter services equipment. The company has a wide range of products for road, railway and airports. With a main focus on the airport business, Øveraasen is today one of the world's leading companies in this sector.

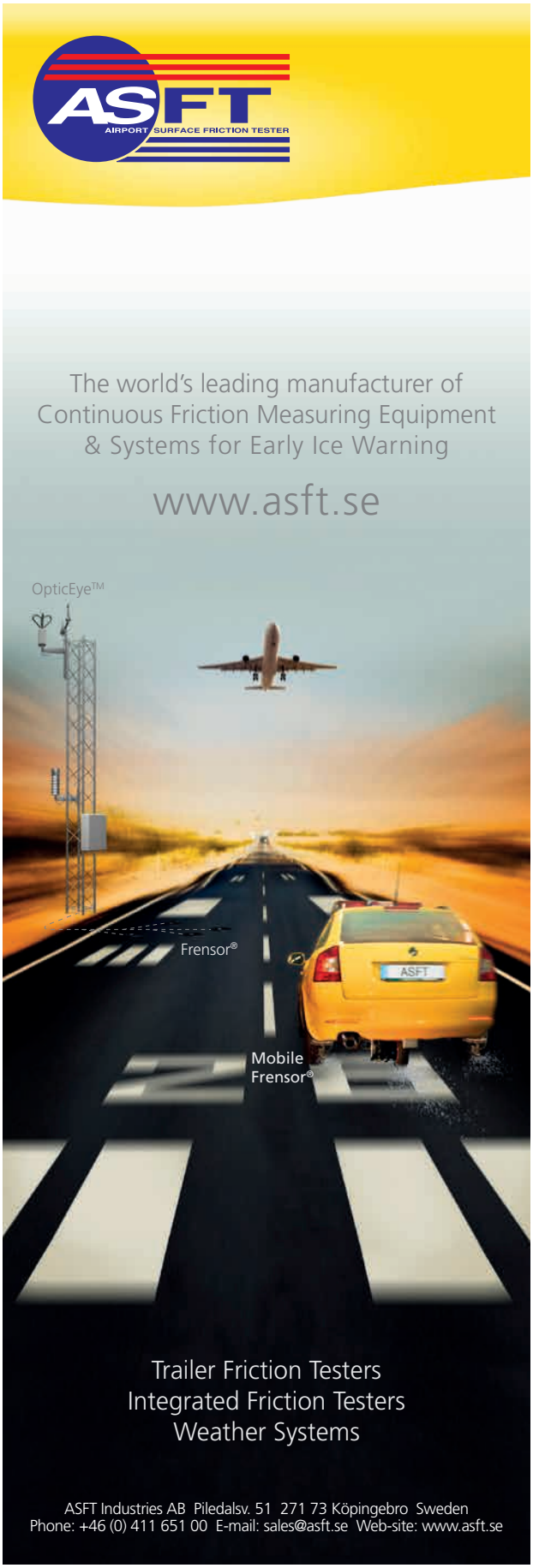
At the Inter Airport Exhibition 2013 in Munich, Øveraasen launched its new 'Performance Line', which consists of the RS 200 and RS 400 runway sweepers, the RSC 250 compact sweeper and the TV 1000 high capacity blower.

The new products have been designed according to the latest requirements in respect to emission standards. Their futuristic and aerodynamic design is combined with well-functioning, reliable and proven components.

The Øveraasen snow sweeper line is completed with a compact version built on a standard Mercedes or Scania truck. The new machine has several important advantages being used on the towed machines for years.

The Øveraasen TV 1000 is equipped with the unique 'Flying Cab', which allows individual positioning of the driver's position – thus enabling use of the blower for loading snow onto trucks, or with the cab in front position, clearing snow on runways and taxiways without any disturbing snow on the windshield.

Introducing the new range of products, Øveraasen has not only confirmed its world leading position for high capacity airport snow removal equipment, but taken a long lead to its competitors. The company is proud of what it has achieved and judging from the response, signing of new contracts is expected in the near future.



CATEGORY: DE-ICING

KILFROST – THE IMPORTANCE OF LOGISTICS AND EFFECTIVE DE-ICING

Kilfrost, a global leader in the supply of de/anti-icing fluids to the aviation industry, explains the importance of logistics and effective de-icing solutions in order to be prepared during the harsh winter weather.

Effective de/anti-icing solutions are essential during freezing conditions and precipitation for a number of reasons. Ice and other frozen contaminants can cause aircraft wings to be coarse and uneven, disrupting the smooth flow of air, increasing drag and reducing the ability to generate lift. In addition, if large blocks of ice become dislodged during take-off, this presents a serious risk to engines and propellers. It is also essential that engine inlets and sensors on the exterior of an aircraft are free from ice or snow.

In March 2013, the UK Met Office recorded the coldest March since 1962, with a mean temperature of 2.2°C. The rest of Europe did not escape the grip of the cold snap, with the German weather service recording the second coldest March for 50 years and a record snowfall in Moscow.

Kilfrost's Chief Executive Gary Lydiate explained: "Winter has arrived in many parts of the globe and begun testing everyone's 'winterisation' procedures. This is particularly true in North America, which has had a severe start. The impact in Europe will really arrive in the New Year. Our preparations across the world mean that we stockpile major amounts of finished product to meet all our customer needs."

Kilfrost has seven depots across Europe, each containing two million litres of product for aviation use. A typical short-haul aircraft can require up to 500 litres, so these stocks can be depleted extremely quickly in severe weather. As a result, an effective logistics network is essential. Kilfrost manages one-third of the world's aircraft de/anti-icing fluid needs, and during the 2012/13 winter period delivered over 1,400 tankers of fluid.

SAFEAERO ADDS NEW AIRPORT CUSTOMERS

Safeaero added two new customers in Italy with a new 220EH de-icer delivered to Bergamo Orio al Serio Airport in July 2013, while Florence Airport has ordered a 220 model and takes delivery in January 2014. "This is very exciting news for us," said Lars-Gunnar Nilson, Managing Director of Safeaero. "It's always important to gain new customers and we look forward to a continued partnership with both airports well into the future."

Vienna Airport also added the Safeaero 223XXL to its existing fleet of ten 220s in October. The airport is proud to boast having the largest de-icer available on the market today amongst its fleet. Some of the unique features of the 223XXL include a maximum nozzle height of 23m, a maximum operator's eye height of 17m, and a tank capacity of 13,000 litres. The large tank capacity reduces the refilling sequences during peak times and enables the unit to stay longer on the de-icing pad, which may reduce the size of the de-icer fleet. The 223XXL also offers the new 'hot@nozzle' and 'mix@nozzle' mixing system for Type I and Type II/IV fluids. The Type I mixing system is adjustable stepless according to OAT from 4 to 75% and the Type II/IV mixing system is adjustable in fixed steps 25/50/75/100%. This all-new mixing system ensures maximum efficiency with minimum use of glycol, which makes it a very environmentally friendly system.

Vienna Airport has also received the upgraded version of the de-icer management system. This wireless system coordinates and manages all de-icer activity and collects all detailed data for each single de-icing operation. All collected data can be used to prepare statistics and direct billing.

Swissport Helsinki has also installed the de-icer management system and is using it primarily for data collection and direct billing. The system was also installed on de-icers from other manufacturers within the Swissport fleet.

The new forced air system, SafeAir, was very successful in the test period with Swissport in Helsinki last season and is now available on all Safeaero 200 series models.

CSA was the first recipient of the new SafeAir system this fall with the delivery of a new Safeaero 220. For optimal reach of the air nozzle, the blower fan is placed on the nozzle arm and connected to the nozzle with a telescopic tubing. The air nozzle is operated in horizontal and vertical directions parallel to the fluid nozzle for optimal flexibility. The air nozzle has an extremely wide range for optimal and fast operation.

Safeaero added two new customers in Italy with a new 220EH deicer delivered to Bergamo Orio al Serio Airport in July 2013, while Florence Airport has ordered a 220 model and takes delivery in January 2014.





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Runway & commercial de-/anti-icers:

- Provifrost® KA ECO *Liquid potassium acetate*
- Provifrost® KF ECO *Liquid potassium formate*
- Provifrost® NF *Solid sodium formate*
- Cryotech® E36 *Liquid potassium acetate*
- Cryotech® NAAC *Solid sodium acetate*
- Cryotech® CMA *Solid calcium magnesium acetate*
- Cryotech® CMA40 *Solid blend of 40% CMA and 60% rock salt*

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JCB's extensive range of specialist equipment provides year-round versatility to your fleet. The Fastrac tractor is the master of many tasks, operating multiple attachments for snow-ploughing, de-icing, snow blowing and sweeping in winter or mowing grass in summer. Our world-leading Loadall telehandlers, backhoes, excavators and wheeled loaders can perform numerous duties – from loading grit and clearing snow to digging ditches and shifting pallets. Combined with the best dealer back-up in the business, JCB machines will keep your airport running all year round.

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For further information, contact your local dealer or call +44 (0)1889 561424.

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