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From regional gateways such as Budapest and Ljubljana to international hubs like Amsterdam Schiphol and Madrid-Barajas, the experiences and best practices of a broad range of airports, of all sizes, 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, ensuring a varied and colourful range of responses with the highest level of accuracy. 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. To complement the survey itself, we invited several airports to share additional insights into their airside safety strategies.

BOB GRAHAM, OPERATIONS DIRECTOR, BIRMINGHAM AIRPORT

What airside developments has your airport undertaken recently, or do you plan to undertake?

Birmingham Airport has been undertaking major investments over the past three years in its airside infrastructure, with the most significant being a £65 million (€80m) runway extension and resurfacing. The runway at Birmingham has now been extended to over 3,000m, allowing a much better capability for long haul operations. We have recently opened a new £12 million (€15m) ATC tower and replaced many of the navigation aids including Radar and ILS.

Are there any particular innovations you are applying airside at your airport?

We have recently invested in new ILS to both runways, installed LED lighting to the resurfaced pavement, and resurfaced the main runway. For the major works, we developed APV-Baro RNAV Approaches to both runways to mitigate periods of known ILS outage and introduced an industry-first ‘works-mode’ for the runway lighting that sees the main guard lights extinguished and a set of green ones illuminated when the runway is closed to clearly reinforce to the contractors that it is safe to enter.
What are the key airside safety challenges you face at your airport in particular?
Birmingham is a crosswind runway, so the selection of surface type and drainage are very important. We chose to reinstall wide spaced FAA specification grooving – often colloquially referred to as ‘tropical grooving’ – because experience with the previous surface had shown us that the wider grooving performed better in very heavy rain.

What, in your view, are the key elements of an effective airside safety strategy?
Experienced management team leading competent and well-trained frontline teams, aligned with a thorough understanding of your risks that allows resource to be prioritised to those areas where the need is greatest, and where it can have the most significant results.

ZOLTÁN ORMÁNDI, HEAD OF AIRSIDE MANAGEMENT, BUDAPEST AIRPORT

What airside developments has your airport undertaken recently, or do you plan to undertake?
At Budapest Airport we are analysing the possibility of capacity improvement to install reactive jetway equipped parking positions at Terminal 2. The main goal of the improvement process is to accommodate the second ICAO Code E aircraft at the non-Schengen apron not touching the passenger walking process of low-cost airlines.

Are there any particular innovations you are applying airside at your airport?
To improve the efficiency of daily operations in 2014, the airport operator implemented the mobile runway and taxiway closing markers. The installation and retracting of mobile markers are very easy – one airfield officer is enough to close and open the involved areas.

What are the key airside safety challenges you face at your airport in particular?
At Budapest Airport, in the near future, we are focusing on the certification process of the airport based on 139/2014 EU Regulation. Also, a key issue will be in 2015 to implement the shotgun to improve the bird and wildlife control.

What, in your view, are the key elements of an effective airside safety strategy?
Training, training, training, and continuous monitoring of the airfield, implementing the new innovations. It is also very important to standardise the airfield as we can. Worldwide or EU-wide standard TWY naming and stand ID systems.

MARTIN KUCERA, AIRPORT OPERATIONS DIRECTOR, PRAGUE AIRPORT

What airside developments has your airport undertaken recently, or do you plan to undertake?
The key element of our airport infrastructure development is a parallel runway, which we plan for operations in 2025 at the latest. An extension of terminal capacity will follow the runway project according to the traffic demand.

Are there any particular innovations you are applying airside at your airport?
We made partial adjustments of the main apron in order to increase the capacity for aircraft with a wingspan up to 36m. One stand is actually being redesigned for Code F aircraft operations.

LIBOR KURZWEIL, QUALITY, SAFETY AND PROCESS MANAGEMENT DIRECTOR, PRAGUE AIRPORT

What are the key airside safety challenges you face at your airport in particular?
Despite the fact that many procedural changes in aircraft deicing took place in the last years and the process has been improved significantly, it remains our main challenge.

What, in your view, are the key elements of an effective airside safety strategy?
At the highest level it is an understanding and support of SMS by the top management of the company and the Airport Operations Manager. At the practical level, maintaining and improving airside safety highly depends on good partnership and communication with all stakeholders involved in aircraft operations.

STEFFI BAUMGARTEN, SAFETY EXPERT, SAFETY OFFICE, ZURICH AIRPORT

What airside developments has your airport undertaken recently, or do you plan to undertake?
GBAS: On 14 October 2014 the first landing using the precision landing system GBAS (ground-based augmentation system) was used by a Swiss Airbus 320 at Zurich Airport. The new landing procedure now enables a GPS approach from the north on runway 14 even in low cloud or poor visibility. EMAS: The RESA of Runway 28 has a length of 90m. Due to topographical reasons an extension isn’t practicable. In order to increase safety at the end of Runway 28, Zurich Airport is planning to install an Arrestor System.

Are there any particular innovations you are applying airside at your airport?
Zurich Airport has developed a special system for the handling of aircraft deicing wastewater, in which physical and chemical as well as natural degradation processes were conducted. Depending on the carbon concentration, the wastewater will be delivered to the different processes. Furthermore, Zurich Airport has developed a new training programme for snow and ice removal, which can be used on mobile devices.

What are the key airside safety challenges you face at your airport in particular?
Zurich Airport has a complex layout, which reflects some safety challenges on a day-to-day basis during the operations, as well as on a safety strategy basis: The crossing of two runways and several dependencies between all three runways (safety, capacity, noise, responsibility).
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), Taxi Apron Runway width, shoulder widths, total apron area, ramp area, other: Runway O4: Total dimensions (TORA): 2,014x60; Width full strength (m): 45; LDA (m): 2,014; Runway 22: Total dimensions (TORA): 2,014x60; Width full strength (m): 45; LDA (m): 2,014; L: CAT IB/1; PAPI: Y. Runway 06: Total dimensions (TORA): 3,500x60; Width full strength (m): 45; LDA (m): 3,250; ILS: CAT III/E; PAPI: Y. Runway 24: Total dimensions (TORA): 3,500x60; Width full strength (m): 45; LDA (m): 3,500; ILS: Y. Runway 36: Total dimensions (TORA): 3,453x60; Width full strength (m): 45; LDA (m): 3,453; ILS: CAT II/E; PAPI: Y. Runway 18C: Total dimensions (TORA): 3,300x60; Width full strength (m): 45; LDA (m): 3,300; ILS: CAT III/E; PAPI: Y. Runway 36C: Total dimensions (TORA): 3,400x60; Width full strength (m): 45; LDA (m): 2,850; ILS: CAT II/E; PAPI: Y. Runway 18L: Total dimensions (TORA): 3,400x60; Width full strength (m): 45; LDA (m): 2,850; Runway 36R: Total dimensions (TORA): 3,400x60; Width full strength (m): 45; LDA (m): 2,850; ILS: CAT III/E; PAPI: Y. Runway 18R: Width full strength (m): 60; LDA (m): 3,530; ILS: CAT II/E; PAPI: Y. Runway 36L: Total dimensions (TORA): 3,800x75; Width full strength (m): 60. Taxiways: Total length: 43km, of which 43km is suited for CAT III operations. Aprons/ramps: Total number: 228, of which 100 are equipped with boarding bridges and 21 are solely for freight handling. The other ramps are used for remote passenger handling, aircraft buffering and parking.

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, Amsterdam Airport Schiphol (AMS) continuously improves safety at the airport in its processes. Of course, this means sometimes reappraising some parts of the safety management system.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training: Regulations concerning FOD are described in Amsterdam Airport Schiphol’s Safety and Security Handbook. Every employee is tested upon his or her knowledge of this handbook before they are allowed to work 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 concerning FOD. Before the docking of an aircraft the ramp is inspected by the handler. Before ATC actively uses 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 discardedULDs, which can prove dangerous as FOD. Pack-up activities of freight must be done within the perimeter of the freight service to prevent packing material flying around and becoming 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): Amsterdam Airport Schiphol is planning to combine efforts in the prevention of FOD by creating more awareness across 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 have taken place, which then lead to trend reports through which necessary action is taken, for instance the campaign Clean Schiphol. Low fences are placed in the vicinity of taxiways and runways, again to catch debris that flies around in the wind. Obviously these fences are regularly cleaned. Amsterdam Airport Schiphol is still looking at and following developments around FOD-radar. At the moment it is in the middle of completing a tailor-made system that can be used to register high/Low tech FOD. Any measure that could prevent a pilot or vehicle driver from 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? Yes, Amsterdam Airport Schiphol (AMS) continuously undertakes/required to eliminate perceived hazards? 5.2 Are any design or engineering changes being The Airside Safety Survey 2015

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 UNLV. 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 from 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, and extra training for those who have to cross runways. Recurrent training take place, which then lead to trend reports through which necessary action is taken, for instance the campaign Clean Schiphol. Low fences are placed in the vicinity of taxiways and runways, again to catch debris that flies around in the wind. Obviously these fences are regularly cleaned. Amsterdam Airport Schiphol is still looking at and following developments around FOD-radar. At the moment it is in the middle of completing a tailor-made system that can be used to register high/Low tech FOD. Any measure that could prevent a pilot or vehicle driver from 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? Yes, Amsterdam Airport Schiphol (AMS) continuously undertakes/required to eliminate perceived hazards? 5.2 Are any design or engineering changes being implemented to improve safety at the airport? Yes, Schiphol Airport is a zero tolerance environment, with a Just Culture. 6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? Yes, courses are provided by Bird Management LTD (formerly Fera).

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 (Primetake), lasers (Aerolaser), and acoustics (Scarecrow Bioacoustics).

6.4 Do you carry out a bird strike risk assessment? Yes, a yearly assessment by an external advisor.

6.5 Do you do a count of your airport’s bird population problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Hares – structural population reduction.

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? 6.7 CRASH FIRE RESCUE

7.1 Please detail your CFT vehicle inventory stating: vehicle type; chassis brand and model; axle capacities (4x4, 6x6); capacities (kg/litre and type); year of manufacture: 5.3 What safety devices are currently employed? (A-SMGCS: Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X ARMS)
7x E-One Titan HPR; 8x8; 2002-2004; 2x E-One Titan HPR; 8x8 with boom; 2002-2004; Titan HPR 8x8, 12,150 AFFF U10A extinguishing performances (performance parameters for TITAN HPR 8x8 European Style): Water capacity: 12,150l (3,210 gallons); foam capacity: 750l (198 gallons); estimated dry shipping weight: 28,549kgs (62,940lbs); estimated service weight: 41,133kgs (90,300lbs); gross vehicle weight rating: front: 23,586kgs (52,000lbs), rear: 23,586kgs (52,000lbs). Engine: Make: Detroit Diesel 12V MTU; model: Series 2000 engine, 5750kW (1,0058HP) at 2100 rpm; size: 23.89k (145 cubic inches); bore: 130mm (5.12 inches); stroke: 159mm (5.91 inches); torque: 4,234Nm (3010lb-ft) at 1,350 rpm. Transmission/transfer case: make: Allison; model: M-6610A; gear ratio: 4.001:1 – first, 2.68:1 – second, 2.01:1 – third, 1.35:1 – fourth, 1.00:1 – fifth, 0.67:1 – sixth, 0.456:1 – reverse; differential: 30:70 biasing differential; torque converter: Allison; power divider: Cushman 385 w/PTO; style: hydraulic, multiple disc wet clutch; ratio to pump: 0.8:1:0; approach angle: 30 degrees, departure angle: 30 degrees, interaxle clearance angle: 12 degrees; underbody clearance: 460mm (18 inches), undercarriage clearance: 50 degrees above to 20 degrees below horizontal. Reeled water/foam handline: nozzle reach: 46m (150ft); horizontal rotation: 180 degrees; point: 9m (30ft) front of bumper; straight stream: width dispersed stream: 6m (20ft); width dispersed stream: 23m (75ft); reach straight stream: 19.5m (65ft); reach dispersed stream: 9m (30ft); reach: 7.5m (25ft); dry chemical tumret discharge: discharge rate: 7kgs/sec (16lbs/sec) minimum; range: 30.5m (100ft); pattern width: 5.2m (17ft). 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. 2x Mercedes Atego; 2007/2008. Mercedes Atego vehicle specifications: Manufacturer: Hilton. Chassis: Mercedes-Benz, Atego 1628 F, 4X2. Water capacity: 3,000l (Golida WSB 3010). Foam capacity: 200l. Pump flow rate: 3000lpm at 16 bar. Automatic foam proportioning system 3%. Bumper turret: Akron Brass 3645 1900lpm. Horizontal rotation 180 degrees. Vertical travel 45 degrees above to 20 degrees below horizontal. 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 runways. 8.2 Average annual days of snow: 7 days per winter season. 8.3 Average snow depth: Less than 1cm. 8.4 Maximum snow in 24 hours: Less than 5cm. 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 sub-contracted winter services personnel are available per shift? Per shift maximum 110 employees for runway de-icing and snow clearing. 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; + blow-sweeper, 12 units; truck + plough, 5 units; snowblowers, 3 units; runway light sweepers, 2 units; sprinkle-devices, salt, 9 units; sprinkle-devices, solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: No, but environmental issues will become more pronounced in the near future. 10.2 Do you use other chemicals or sand on operational areas? At this moment we use potassium formate and we are using more sand as well. 11. ICE WARNING SYSTEMS 11.1 State model and number of ice warning systems: Every runway and service apron has its own weather stations with runway sensors. The ASFT runway friction testers are also outfitted with mobile sensors. With the sensors it is possible to measure the surface temperature, ground temperature at -30cm, dew point and the amount of liquids still available. This helps to determine whether spraying should be used or not. 11.2 Have you plans to purchase further ice warning systems and if so, which model(s)? No. 11.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Thanks to the information gained from the weather station sensors the necessity for and amount of surface de-icing chemicals can be determined far more accurately. This enables us to reduce the costs of winter operations and improve our environmental performance. 12. AIRCRAFT DE-ICING 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, NAAC, sand. 12.2 Comment on storage capabilities of the chemicals which you use: The airport stores up to 430,000 litres of potassium formate. 12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Our solid de-icers – NAAC granules – with glazed front. 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 runways (3) and aprons (4) – state of the art de-icing trucks by Dammann. 12.6 Do you have any other comments on experience with chemicals? No, but environmental issues will become even sharper in the near future. 12.7 Do you use other chemicals or sand on operational areas? Amsterdam Airport Schiphol sprays runway de-icing fluid – potassium formate (standard setting 25g per metre) – to prevent icing and snow build-up. For the runway it uses sprinkle-devices of 33m in width and for taxiway and aprons of 16m in width. 12.13 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? On average it takes 30 minutes to clear the runway, including the exits. 13. ICE WARNING SYSTEMS 13.1 State model and number of ice warning systems: Every runway and service apron has its own weather stations with runway sensors. The ASFT runway friction testers are also outfitted with mobile sensors. With the sensors it is possible to measure the surface temperature, ground temperature at -30cm, dew point and the amount of liquids still available. This helps to determine whether spraying should be used 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: Thanks to the information gained from the weather station sensors the necessity for and amount of surface de-icing chemicals can be determined far more accurately. This enables us to reduce the costs of winter operations 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 Swissport. 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 (CDF) with four pads operated by KLM Ground Services. The CDF increases de-icing (hour) capacity, improves overall safety and enhances environmental performance. We use dedicated de-icing positions primarily. So this 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 five glycol recovery trucks on the aprons. The de-icing water is temporarily stored in six big silos and from there transported by truck to a third-party water treatment plant outside the airport.

15. FRICION TESTING
15.1 What model(s) of friction tester do you use? We have two ASFT friction testers (VW Sharans) outfitted with Frensor mobile sensors.
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 closely based on runway usage and runway status.

ANTWERP

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Antwerp 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):
Dimension Runway 11/29 (m): 1,510x45, TORA 11 (m): 1,510; TORA 29 (m): 1,510. TODA 11 (m): 1,510; TOLA 29m (m): 1,510. ASDA 11 (m): 1,510; ASDA 29 (m): 1,510. LDA 11 (m): 1,366; LDA 29 (m): 1,510. Total concrete: 154,310sqm.
2.2 Landing aids for each RWY (e.g. CAT II):
LDA 11 (m): 1,510; TODA 11 (m): 1,510; ASDA 11 (m): 1,510; LDA 29 (m): 1,366; TORA 11/29 (m): 1,510; TORA 29 (m): 1,510; ASDA 11 (m): 1,510; ASDA 29 (m): 1,510. ASDA 11 (m): 1,510. LDA 11 (m): 1,366; LDA 29 (m): 1,510. Total concrete: 154,310sqm.
2.3 ATC Radar and Surveillance equipment:
FAA: 4000 units, 8000l, 12,000 sqm.
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.

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 the visibility is low, Antwerp Airport starts 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): N/A.
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other low-cost technologies: Guard lights at 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 the airport must follow special training with safety lessons.
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
6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Trying to avoid food (seeds) attraction by mowing and close attractive breeding places in hangars.
6.2 Do your staff attend recognised bird control training courses? Yes – training courses by the Belgian Air Force and courses for hunters.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Gunfire, birdscare cardigans, gas canons and alarming scream noise from several species.
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); manufacturer and number of units (e.g. example, compact jet sweeper, Schmidt, CJS 720, 4 units): Snow plough, MB Track: 3x low snow blowers, Dord: deicing vehicle, 8000l potassium acetate, Schmidt.

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Six persons per shift, no sub-contracted winter service.
9.2. FUTURE DEVELOPMENTS
9.1.1 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 Track: 3x low snow blowers, Dord: deicing vehicle, 8000l potassium acetate, Schmidt.

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 Track: 3x low snow blowers, Dord: deicing vehicle, 8000l potassium acetate, Schmidt.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance main of operational facilities (runways, taxiway, aprons etc) stating identity of each facility: First Runway 11/29, then taxiways and Aprons 1 and 2.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Start sweeping on the runway axis with two snow blowers in close formation. The first on the axis, the second 3 metres out of the axis in the back of the first, then working the snow out to the edges, taking care not to cover the runway light system. When ready, there will be a stabilisation of the runway with kalium acetate to get good and stable friction. Special procedures necessitated by extreme weather conditions are described in the airport manual – Winter Operations.
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: Kalium acetate is very effective for de-icing and stabilisation of the runway. In case we need a strong reaction (black ice) we spread solid natrium acetate and moistur the product with kalium acetate.
12.2 Comment on your experiences of the capabilities of the chemicals that you use: Stainless steel tanks – 30,000 litres kalium acetate storage.
12.5 Have you employed any special means to economise on chemical use? The new Schmidt van is much more economic in use then our previous Mercedes.

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Two sensors (Frigistors) on the runway.
13.2 Have you plans to purchase further ice warned 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 second warning indication
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for us. In the first instance, personal inspection and control are not considered 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.

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

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: Airport Commander plans for the acquisition of a new friction tester.

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, plus shoulders of 7.5m on each side. The runways are designated as follows: Runway 03R/21L: physical length 4,000m; Runway 03L/21R: physical length 3,800m. The runways are parallel and the distance between their centrelines is 1,575m. According to the physical characteristics as published in the AIP Greece, the declared centrelines are: Runway 03R TORA (m): 4,000; Runway 21L TORA (m): 4,000; Runway 03L TORA (m): 3,800; Runway 21R TORA (m): 3,800. Ramp area: 45,975sqm. Non-operational areas: 11,853sqm. Total apron area: 57,828sqm.

2.2 Landing aids for each RWY (e.g. CAT II):

The runway’s landing aids are able to serve CAT II approaches. Approach lighting: Precision approach CAT II lighting system, 900m, all runways, PAPI, left side/3 degrees MEHT 18m, all runways. Runway Lighting: (CAT II), Runway C/L lights: 15m spacing (white/red-white/red). Runway edge lights: 60m spacing (white, LIH); runway 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 were made within 2013 on the revised version of the Aerodrome Operations Manual, Volume 1, Aviation SMS Manual, following the amendment of ICAO Doc. 9859, Third Edition and the issuance of ICAO Annex 19, Safety Management and Annex 14. Under this frame, within 2014, further reappraisal of risks and hazards were identified by external SMS audits and relevant follow up actions were followed by the involved entities.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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

a) Training: Athens Airport has provided a training package to ground handling personnel through a ‘Train the Trainer’ programme, as well as through Ariside Driving Permit (ADP) training, including elements regarding the management of FOD.

b) Inspection by airline, airport, and airplane handling agency personnel: FOD inspections are performed at Athens International Airport (AIA) by various entities, such as the airport: Ariside Monitoring & Inspection Specialists’ Unit (AMIS Unit), Ariside Sweeps staff, ramp management, ariside safety staff, as well as by an external Aircraft Maintenance Management Agency.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD collection: daily apron sweeping with airport sweeping vehicles, daily use of the FOD BOSS blanket and/or the magnet bar, FOD bins, and special containers for residual, toxic and hazardous waste).

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Through the Ariside Safety Committee, Runway Safety Team, safety trainings and safety awareness meetings with stakeholders, brochures, airport banners, communication of incidents with the involved entities, FOD Collection Days at the airport, meetings regarding the management of FODs, Aviation Safety Newsletter, Aviation Safety Bulletin, Ariside Safety Campaigns. Moreover AIA, under its aviation SMS umbrella, communicates and coordinates relevant safety issues to SMS safety groups such as Ariside Safety Team, Safety Action Group, and Safety Review 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. AIA is a relatively new airport with a lot of operational/safety/emergency aspects.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? VCCA in Airport Station Operations Control, Ground and Tower Traffic control of HCAA.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No. AIA is a relatively new airport with adequate hazard prevention design.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMAS; Ariside A/S SADE-X, the Modulated X Airport Surface Detection Equipment).

5.4 How does your ground radar system work? (FOD) PREVENTION

5.5 What specific procedures are there for airport personnel that support wildlife management. The members of the Wildlife Control Team organise and provide training on an annual basis to other airport personnel that support wildlife management.

5.6 Are your bird control staff working on the airport continuously, hourly, less than hourly? At least one dedicated person, a member of the Wildlife Control Team, monitors and records wildlife activities on the airport from the aviation day until aviation night and, depending on the level of wildlife strike risk, applies short-term measures as necessary. Competent personnel from the Airfield Services Department support the Wildlife Control Team on a 24-hour basis, as needed.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Equipment includes: Sound devices installed on 13

ATHENS

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses?

The members of the Wildlife Control Team (all with university degrees in life sciences), have been trained by the German Bird Strike Committee and the UK’s Food and Environment Research Agency (Bird Strike Avoidance Team). Ongoing training includes participation in ACI training courses (e.g. March 2010), online refresher courses provided by the Embry-Riddle Aeronautical University Worldwide (January-February 2011), 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 and problem-solving skills. Training regarding the implementation of the Safety Management System and the Integration of the Wildlife Management Plan in the Safety Management System is also provided.

6.2 Are your bird control staff working on the airport continuously, hourly, less than hourly? At least one dedicated person, a member of the Wildlife Control Team, monitors and records wildlife activities on the airport from the aviation day until aviation night and, depending on the level of wildlife strike risk, applies short-term measures as necessary. Competent personnel from the Airfield Services Department support the Wildlife Control Team on a 24-hour basis, as needed.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Equipment includes: Sound devices installed on 13
aircraft, designed and installed in-house, and based on the vehicle’s CD player broadcast recorded distress or alarm calls that have been recorded in cooperation with university specialists, as well as loud digital sounds; 2 portable sound devices broadcasting distress calls purchased from Scarecrow Bio-Acoustic Systems (UK); 4 shotguns firing blank 12 mm ammunition; 1 Avian Dissauder laser pistol purchased from Sea Tech (US). 6.4 Do you carry out a bird strike risk assessment? Wildlife Strike Risk Assessment and Management procedures as per the ICAO standards have been incorporated in the airport’s Wildlife Management Plan. Wildlife strike risk assessments are performed on a monthly basis 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 Logbook (EWS) for purposes relating to wildlife activities, measures applied and the effectiveness of the measures, airport habitat conditions and weather data which is stored in a database especially 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-sized mammals like rodents, foxes and badgers. Insecticides are applied at least once per year to reduce the populations of insects during the most critical period of their lifecycle, rodenticide bait stations are used for rodents (further to the reduction of the populations of the insects), while trapping and relocation or culling is used for foxes and badgers.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/tonne and type); year of manufacture.

Air crash tender -- ROSENBAUER Panther; BuIt; MAN 38,1000 VFAGE/Rb8; engine: MAN V12 diesel engine, Euro 2; output: 735 kW (1,000 HP) at 2,300 min-1; water tank capacity, material: 12,500 l, GFP; foam tank capacity, material: 2 x 750 l, GFP; HP powder unit: 1,000 kg; Year of manufacture: 2000. 7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, we’re planning to an advanced modular aircraft fire training simulator. 7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes/Yes (fire pit).

PART 2: WINTER SERVICES

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? 15 December-15 March annually.

8.2 Average annual days of snow: Not Available (snowing average 1-2 days of snow every 2-4 years).

8.3 Annual number of days of de-icing activities: A few hours per day during an average of 3-5 days per month, between December and March.

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 in de-icing mode.

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, CJ 720, 4 units): Aircraft equipment: Schmidt TLS 630, 4 units; Schmidt CJ5, 4 units; Vehicle ACTROS MB2640 with Schmidt Airport Sprayer (ASP), 2 units; Vehicle ACTROS MB2640 with Schmidt plough and spreader, 1 unit; Vehicle UNIMOG Schmidt plough and spreader, 2 units / Schmidt Large Snow Cutter (optional); Vehicle Atego 1823 Schmidt brush, 2 units; Vehicle Tractor John Deere Schmidt plough, 1 unit; Vehicle Kramer Schmidt plough, 1 unit; Vehicle Sk151 Schmidt plough, 2 units.

11. PROCEDURES AND METHODS

11.1. Please describe the order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: According to the prevailing weather conditions and the existing operational needs, the priorities are as follows: RWY adjacent TWR, at least three high speed exits and a taxi lane, followed by the terminals. Simultaneously, aprons by taxiways between the measures. 11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: NA vehicles and operators, with the external contractor assistance, where required, follow the priorities set in the Aerodrome Operation Manual (AOM) snow plan. The RWY and adjacent TWR formation consists of 4 Towed Jet Sweepers (TJS), 4 Compact Jet Sweepers (CJS), 2 Airport Sprayers (ASP) and 1 Unimog with snow cutter. The cleaning routes, which are described to the AOM snow plan, may vary according to the Airport Duty Officer instructions or the prevailing weather conditions. 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 velocity, etc; pricing ratios differ between .10-.40 gr/m2.

13. ICE WARNING SYSTEMS

13.1. State model and number of ice warning systems: Official notifications and warnings are published by the Hellenic National Meteorological Service (HMS). No specific equipment installed aside.

14. AIRCRAFT DE-ICING

14.1. Does the airport directly provide aircraft anti/ de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units: Athens International Airport S.A. (the Airport Company), does not provide aircraft de-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: 3 trucks FM Tempeast II, 2 trucks Vestergaard.

14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-anti-icing operations take place on each aircraft parking stand.

14.3 Is glycol recovered? If so, please state methods: The glycol is not recovered.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS Friction Tester, SAAB 9-5 Wagon Surface Friction Tester (SFT), 2 units.

BARCELONA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Barcelona-El Prat 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): All this information is included in the Barcelona El Prat Airport (LEBL) AIP.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 28P: CATIII; RWY 07L: CAT I (implementation CAT II/III during first semester 2015); RWY 25L: CAT III; RWY 07R: CAT III/II; 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 recognised by the Spanish Aeronautical Authority (AESA) as a certified airport. This certification was renewed thanks to Apron Management Services implemented in September 2012 on the two main aprons (T1 and T2). Also, the airport has undergone external audits by 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. AESA oversees all certification processes and conducts periodic audits, the results of which are translated into a Corrective Action Plan (CAP) to run through the airport. The airport regularly reports to AESA the CAP’s monitoring. The SMS’s main premise is continuous improvement. The internal procedure BCN-PSG01, Risk Management System, is a systematic procedure, and requires 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: ITSO ‘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. BCN Safety Newsletter looks at the issue of FOD at Barcelona-El Prat Airport, and what you can do to avoid FOD and prevent incidents caused by FOD.
b) Inspectors by airline, airport, and airplane handling agent personnel: Handling agents perform inspections of aircraft manoeuvring areas several times a day, and its activity is controlled by the airport management. More frequent inspections are required if construction work is being carried out in these areas. In addition, flight crews should immediately report any FOD they observe on taxiways and runways to air traffic control (ATC). The ground crew are responsible for ensuring that no FOD is present on the stand prior to aircraft movements to and from the stand.
c) Maintenance (use of sweeping, magnetic bars, number of jobs, FOD disposal points etc): The airport uses FOD containers. At Barcelona-El Prat Airport, an essential part for preventing FOD is regular cleaning of airside areas. It is also important to place FOD bins near the aprons for personnel to deposit any FOD they find. The bins are marked with the letters FOD, and are therefore clearly identified as containers for disposing of FOD.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Safety level agreements between airlines and handling agents.

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?
Currently, 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 warning systems 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.

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
6.1 What is the primary method of bird control training courses?
There is continuous training at the airfield for all components of Animal Control Service. Specific trainings in the case that they are needed.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly?
The Wildlife Control Service (WCS) consists of three units working simultaneously in the airport and on its vicinity during all daylight hours (from sunrise to sunset).
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacture: Equipment used: 14 falcons for each WCS unit, 1 trained dog for each WCS unit, blank pistols, vehicle-mounted distress call systems to scare birds, laser torch from Lord Tirogerieni.
6.4 Do you carry out a bird strike risk assessment? Risk assessment follows the guidelines of AESA and is validated by this organisation. Wildlife strikes are registered in a database, using different sources of information (WCS, TWR, airlines, etc.). All this data is used to know in deep the wildlife strike problem and to assess the risk. A risk index is calculated for each species that is involved in bird strikes, based on the probability (the number of collisions registered in five years), and the severity (based on size and flocking behaviour).
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 30 minutes or more each WCS unit registers all the actions taken to repel or trap birds and the species observed. This information is collected in daily reports. In these reports, WCS also record all the strikes reported by ATC and other bird observations as notified by ATC or aircraft pilots.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Sometimes, dogs enter the airfield, escaping from aircraft holds. WCS is in charge of capturing them and all animals are returned to their owners. Feral cat trapping is done by WCS agents.

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 Sides; Renault; 6x6, 10,000; water, 1,200l polyester foam; 2004. 4x Rosenbauer Panther; MAN; 8x8, 13,500l water, 1,650l polyester foam; 2006. 2 Rosenbauer Panther HRT; MAN; 8x8, 12,000l water, 1,500l polyester foam; 2011.

PART 2: WINTER SERVICES

8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? From 1 December to 15 March.
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-employees, 6 outside-hiring.
9.2 Are the airport-employees and hiring 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 and snowplough truck, Maquisalasft; Liquid potassium acetate spreader, Maquisalasft, 2 units; road sweeper, Schmidt friction tester, Sunny, S444444.
service is provided on the parking area. 14.3 Is glycol recovered? If so, please state methods; No.

15. FRICITION TESTING

15.1 What model(s) of friction tester do you use? SARISYS SAAB-95 98874.

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME:
Belgrade Nikola Tesla International Airport

2. MOVEMENT AND MANEOUVREING AREA DATA
2.1 Please list the identities of primary operational facilities and the surfaces areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):
- Runways: 23.72m (runway 30), 23.72m (runway 12). RWY 12: TORA: 3,400m (3,000m 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.
- Three aprons: Apron A: 10 parking positions with PBB for C category aircraft (wing span from 31.81m to 44.42m), including 1 position for aircraft with 50.39m wingspan; 15 positions for general aviation (wing span from 12.04m to 23.72m). Apron B: 6 open parking positions for C category aircraft (wing span from 32.92m to 34.31m), 1 open parking position for aircraft with 50.39m wingspan. Apron C: 10 parking positions for C category aircraft (6 with PBB and 4 open positions), with restrictions 5 parking positions (3 with PBB and 2 open positions) for 65m wing span aircraft.
- 2.2 Landing aids for each RWY (e.g. CAT II): RWY 12: precision instrument approach CAT II/III. RWY 30: precision instrument approach CAT I.

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. Every employee at the airport must pass the test before entering restriction area.
- b) Inspection by airline, airport, and airplane handling agency personnel: A parking position FOD check is done before and after aircraft turnaround by the ramp agent. Every employee must remove FOD from the apron, if they see any. Runway and taxiway FOD check is performed by vehicles.
- c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD containers are located at every parking position. Cleaning trucks are used for apron cleaning.
- d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): A third party company/agency has attended a basic safety awareness course and has been given document about apron movement, which states that every person must collect FOD from the apron/roadway/runway. If they collect such items, 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 is monitoring 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).
- Belgrade Nikola Tesla International Airport does 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 (controlled service road), which cuts taxways.
- 5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people working 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 to the national law (every aviation subject in the Republic of Serbia must have one).

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 and plants that do not attract birds, and constant patrol around the runway and taxways using two specially equipped vehicles.
- 6.1 Do your staff attend recognised bird control training courses? The Head of the Bird Control Unit completed FERRX’s course – Airport Bird Hazard Management – on 22 November 2012, in York, UK. All bird control staff have completed Phoenix’s (UK) course about wildlife management.
- 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 is the primary method of monitoring bird and wildlife activity on the airfield?
- No, we do not have significant

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kilotrle and type); year of manufacture: Panther; MAN 36.1000 VFAEG; 12,500l water, 1,500l foam, 250kg powder. 10,000/min pump capacity at 10 bar, 300/min at 40 bar; 6,000/ min water gun capacity at 10 bar, range 80m. Panther; MAN 38.1000 VFAG; 8X8; 12,500l water, 1,900l foam, 750kg powder. 6,000/min pump capacity at 10 bar, 300/min at 40 bar; 6,000/min water gun capacity at 10 bar, range 80m. Skanell; Lajand.; 10,000l water, 900l foam, 100kg powder. 6,000/min pump capacity at 10 bar, 300/min at 40 bar; 6,000/min water gun capacity at 10 bar, range 80m. 2x Mercedes; Mercedes; 4X4; 3,000l water, 400l foam. 3000l/min pump capacity. Command vehicle, WV Crafter.

7.2 Future developments – are there plans to purchase or dispose of any equipment? Purchase plans: 2015 – fire fighting vehicle, B88 with telescopic nozzle; 2016 – rescue stairs. No disposal plans for equipment.

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

PART 2: WINTER SERVICES

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: 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 de-icing activities: 23 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 50 employees a 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 sweeper, Dvarasan, RS 400 MK II & III, 6 units; snow blower, Schmidt, SUPRA 5001, 1 unit; combination de-icing spreader, Schmidt, AC4000, 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; snow sweeper, SICARD 314, 4 units; snow blower, SICARD 7500 SMI, 1 unit; combination de-icing spreader, Kuper-Weisser, 1 unit; backhoe loader, Hitachi with snowplough, 1 unit; skid steer loader, BOBCAT 175 with snowplough, 1 unit; backhoe loader, VENIERI 10.33B with RYW light clearing equipment, Telefsdal, 1 unit; truck, FIAT 697 with snowplough, 2 unit; tractor, KOTI with snowplough, 8 units; tractor, IMT 539 with solid de-icer spreader, 1 unit; UNIMOG with snowplough 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 equipped 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:


11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Runway and Taxiways A, B, C, D & E: 6 snow sweepers, Overaasen RS 400 MK II & III, in a formation, following 1 snow blower, Schmidt SUPRA 5001. After them, 1 backhoe loader, VENIERI 10.33B, with runway light clearing equipment, Tellofsdal, and at the end 1 combination de-icing spreader, Schmidt ACE 4000. Before and after the snow clearance, one of the ASF vehicles checks braking conditions on manoeuvring areas and reports it to the TWR. Apron: Tractors, truck, Fiat and UNIMOG, clear the snow from the aircraft stands approximately 5m away from the bridges, where it is pushed further from the apron to the green areas by 6 snow sweepers, Overaasen RS 400 MK II & III, backhoe loader, Hitachi, and SACIDR snowblower.

11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? Maximum: 25 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 degrees Celsius. Effective for up to 3 or 4 hours if there aren’t any freezing rains or strong winds, otherwise it has to be applied more frequently or we have to apply liquid de-icer. Liquid: Cliantair SafeWay 9A Hot – very effective for temperatures up to -15 degrees Celsius. Effective for up to 3 or 4 hours if there aren’t any freezing rains or strong winds.

12.2 Comment on storage capabilities of the chemicals that you use: Urea: Around 150 t, Safeway: 40,000l.

12.4 Have you experienced any corrosion problems with de-icers? Yes.

13. ICE WARNING SYSTEMS

13.1 Please list the identity of any ice warning systems: Belgrade Nikola Tesla International Airport does 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: Belgrade Nikola Tesla International Airport provides 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 performed on taxiway after push back operation.

14.5 FRICITION 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 CD 4x4 ASFT Freenser. 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: Fire fighting vehicle, BSB with telescopic nozzle, rescue stairs, two more Overaasen RS 400, one snow blower, one 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.

BIRMINGHAM

1. AIRPORT NAME: Birmingham 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 19/31: 3,052x45m with 7.5m shoulders each side (total width 60m).

2.2 Landing aids for each RWY (e.g. CAT II): RWY 19/31: 3,052x45m with 7.5m shoulders each side (total width 60m).

2.3 What safety devices are currently employed? No.

2.4 Comment on the use of any innovative stop-bars at all runway holds. SMR – RIMCAS; H24 operation of red LED stop-bars at all runway holds.

3. FOD PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training: Basic training; aisle deicer training; published aisle instructions. b) Inspection by airline, airport, and airplane handling agency personnel, including a three-tier inspection regime. c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeper on site; stand scrubber and FOD-Boss in regular use. d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airside Safety Committee for interagency coordination.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Visual from ATC and SMR – all vehicles under positive RT or under escort.

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 - AMSAS; or ASDE-X, the Model X Airport Surface Detection Equipment): SMR – RIMCAS; H24 operation of red stop-bars at all runway holds.

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

H24 LED stop-bars at all runway access points. Runway closed mode introduced to clearly define when the runway is not operational, i.e. closed for snow clearing or maintenance.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, vehicle operators, and other people who work at the airport? Manoeuvring area driver training course; ANSP also runs Runway Incursion Awareness Training for manoeuvring area 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? Yes, in conjunction with the ANSP (NATS).

6. BIRD AND WILDLIFE CONTROL

6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Airfield long grass policy – H24 bird patrol by Airfield Safety Unit with one member of team dedicated to bird control at all times.

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


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: 5x Oshkosh Striker; 6x6; CFR – 3 with HRET, 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? Yes and yes.

8. winter services QUESTIONNAIRE

8.1 What is the designated period of winter readiness? November-March.

8.2 Average annual days of snow: 5 days.

8.3 Average snow depth: 200mm.

8.4 Maximum snow in 24 hours: 350mm.

8.5 Annual number of days of de-icing activities: 25 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 special snow clearing, de-icing and other relevant winter equipment stationed: purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CIS 720, 4 units): Schorling P21, 3 units; Schorling P17,
11. PROCEEDURES AND METHODS
11.1. Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: Priority 1: Runway, main exits, taxi routes to the aprons and aircraft stands. Priority 2: Other areas.
11.3. After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? 1 hour, depending on conditions and extent of accumulated snow.

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 3 and Konسر liquid de-icers. NACD solid de-icer.
12.2. Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Solid de-icer applied pre-wetted or to wet surface only.
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? Certain areas of the airfield can be withdrawn from use and closed rather than anti or de-iced to reduce chemical usage.
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: Visiаla Icеlet 3-х.

14. AIRCRAFT DE-ICING
14.2. Are you required to have dedicated de-icing positions or de-ice on the parking area? De-ice on stand.

15. FRICTION TESTING
15.1. What model(s) of friction tester do you use? Grip tester – currently transitioning to Mu-meter.
15.4. Comment on the friction tester you use? No specific tester.

16. FUTURE DEVELOPMENTS
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.

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Brussels 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? 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 areal practical training concept for vehicle drivers (apron and manoeuvring area) including human factors, communication (ICAO R/T) and abnormal circumstances & emergencies by means of aside driver training simulator with full Brussels Airport 3D model; apron Safety Committee introduced formalized and standardized reporting of lessons learnt out of incidents; B/RUTuS: BRuussels 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: Four 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; 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 on airport 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. SMS is co-operating with line maintenance and vehicle and equipment maintenance companies to organise a robust and adequate tool management system and monitors KPI’s like 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 which 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 you still do any engineering changes being undertaken/required to eliminate perceived hazards? Use of stop-bars 24/7, training programme for situations of 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 Model 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 2SR and RWY 20; new stop-bar introduced at RWY B5 to avoid small aircraft looking over the existing one. Use of stop-bars 24H. TORA indications on RWY used for intersection take-off.
5.5. What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other airport personnel? 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 Runway 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 CR/NS/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.brusselsafety.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
6.1. 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. Test of new grass mix ongoing.
6.2. Do you staff your bird control team working on the airfield continuously, hourly, less than hourly? Continuously – daily between 6am-10pm.
6.3. What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Recorded distress calls (Laurelcart), pyrotechnics (Pirnetake), shotguns (32G Browning), trapping cages, bird balls on ponds, spikes on signalisation, gas cannon (Purvox) 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) is 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); axes (4X4, 6X6); capacities (kg/litre and type); year of manufacture:

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 on both, on a dedicated de-icing area and on aircraft stands.

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 TS, ASFT, 1 unit.

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

Worldwide standardisation of RW friction indexes is regarded as an important goal.

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, 1 snow blower high capacity. Several airport snow plough, compact.
The 'conga-line', with 5 runway-sweepers, opens the cleaning procedure, NIDO sprayers are active if the apron area and the preferred taxiways. Closing time, 3-5 jet sweepers clean the designated blocks are 45m wide, a number of turns are required in the elevated edge light system. Since the runways centreline to the edge of the surface with respect for clearances,税务总局 and runway safety. Manoeuvring area inspections and maintenance procedures are in force and published in the manuals. Awareness campaigns, and trainings for mechanics and maintenance workers, are regularly organised. The information is continuous, partners and between partners as part of the regular LRST meetings.

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? During operational hours a dedicated staff is on duty. At night the airfield team is responsible for monitoring and taking action.
6.3 What specialist equipment do you employ for bird control? Please detail the manual which contains all procedures, and data collecting methods. Habitat management includes: Tree and bush cuttings at airside, bird nest removals, spikes on ground lights and a 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.
6.4 Do you carry out a bird strike risk assessment? Twice a year by internal 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.ował bird alarm cries (Scaracore Bio-Acoustic Systems), gas cannons (Zon Mark4). The usage of traps and shotguns with pyrotechnics and normal ammo is suspended due to licencing problems. 6.6 Do you have a bird strike risk management plan? Includes all kinds of activities and actions. 6.7 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 rabbits was dramatically reduced in the year 2012.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN 8X8); capacities (height/width/length); type and year of manufacture: Rosenbauer; MAN; 5,000l/min foam; 1995. Freitroller; Rosenbauer; 6,200l/min foam; 2004. Rosenbauer; Mercedes; 7,000l/min foam; 2007. 2x Rosenbauer; Rosenbauer; 6,000l/min foam; 2011. Rosenbauer; Mercedes; 10,000l/min water; 2005. Rosenbauer; Mercedes; 2,400l/min foam; 2001. Rosenbauer; Rosenbauer; 2,400l/min foam; 2011. Mercedes; Rosenbauer; 2,400l/min foam; 2001. 7.2 Future developments – are there plans to purchase or dispose of any equipment? Due to new CFR vehicle in short term no plans, but renewing the old ones. The midterm plan contains purchasing new equipment. 7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? At this point two old, non-used ACFT serve for training, and a new fire fighter training container has been built. A complete refresher training at Leipzig was organised 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 the Winter Services Manual (Snow Plan) the designated period is between 1 November and 30 March.
8.2 Annual average days of snow: 25-30 days.
8.3 Average snow depth: 12cm.
8.4 Maximum snow in 24 hours: 25cm.
8.5 Annual number of days of de-icing activities: 65-75 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Four different levels are defined. In green level: 4, in yellow level: 12, in orange level: 32, and in red level: 48.
9.2 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 level: 12, in orange level: 32, and in red level: 48.
necessary. The final step is the friction measuring process, before the runways or taxiways are reopened.

11.3 After removing snow, how quickly do you expect to achieve ‘black top’ on the runway? 30-35 minutes, depending on snow depth.

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 (5,220t) on the airside. Urea (117.2t), sand on the landside and other non-airfield areas. Before the last season the most important experience was that urea was not effective below -6-8 degrees Celsius, meaning that an extremely high quantity of Clearway was used. 12.2 Comment on your experience with solid de-icers, for example mixing ratios with liquids, ‘slow-away factors’ etc: Until -6 degrees Celsius we are using urea only. Below this temperature or in case of heavy wind a mixture of urea and Clearway must be used. Below -14 only the Clearway is used without mixing with urea.

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

12.7 Do you use other chemicals or sand on operational areas? Sand is used at the maintenance hangars only.

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Met observer on duty, Almos system, air temperature sensors – two on the runway at 2m from the ground, runway temperature sensors – two on the 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/disenchant 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 de-icing on the airport.

14.2. Are you required to have dedicated de-icing aircraft de-icing on the airport. 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? ASFT-CFME (SAAB wagon), ASFT-CFME (SAAB sedan).

15.2. Does the airport have plans to purchase or dispose of any equipment? No.

16. AIRCRAFT 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: OB-26. Total RWY length/width: 3,590x45m. 51 R/C/W/T concrete. Strip dimensions: 3,710m234.5m. TOR/A/TDA/ASDA/LDA for RWY OB/26: 3,590m. Taxiways: B and apron taxiway. Total apron and ramp area: 110,000sqm. Stands: 30, Rescue and fire parking on TWYs A1, B1, C1. 22 Landing aids for each RWY (e.g.: CAT II: RWY OB: CAT II 870M LH. RWY 26: CAT-I 899M LH.

3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System (SMS) 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?

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport’s programme to control FOD in terms of:
- Training: Training of personnel every six months.
- Inspection by airline, airport, and airplane handling agency personnel: Inspections by airport personnel every three hours.
- Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Cleaning by compact jet sweeper, Schmidt, CJ5 914, 4 units, twice a day; use of aerodrome vacuum cleaner (apron, runway, taxiways), three times a week; FOD containers.
- Co-ordination of multiple agencies using airport (airlines, handling agents etc):

4.2 General: Are there any specific 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/referred to eliminate perceived hazards? RWY holding position markings on TWYs A1, B1, C1. Marking – ‘RUNWAY AHEAD’ – on TWYs A1, B1, C1. Mandatory instructions signs on TWYS A1, B1, C1. RWY guard lights on TWYS A1, B1, C1.

5.3 What safety devices are currently employed?
(a) SMGCC: Airport Movement Area Safety System - AMASS; (b) XCI, the Mode X Airport Surface Detection Equipment;
SMQS, SMGCS.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Installation of additional signs and lights (see 5.2), permanent improving of Standard Operational Procedures.

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 upgrading professional skills of airport staff. 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 the Aerodrome Operator 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 course.

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 AMR 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; smoothbore guns and flash-fire rockets; petards.

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 (runway, taxiway and apron incursions). Against animals: Garden Protector 2; smoothbore guns; flash-fire rockets; and petards 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; 6X6; 9,000l water, 1,200l foam solution, 500kg dry chemical, and 120kg CO2. 2008; 2 units. 7.2 Future developments – are there plans to purchase or dispose of any equipment? Rapid response vehicle, 4X4.

7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Chisinau International Airport (LPIU) does not possess a Fire Training Simulator.

PART 2: WINTER SERVICES
8. WINTER SERVICES QUESTIONNAIRE
8.1 What is the designated period of winter readiness? November-April.
8.2 Average annual days of snow: 15-20 days.
8.3 Average snow depth: 4-6cm.
8.4 Maximum snow in 24 hours: 20cm.
8.5 Annual number of days of de-icing activities: 15-25 days.

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Aerodrome division – 16 persons.

10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose,
PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Copenhagen Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other):


- 2.2 Landing aids for each RWY (e.g. CAT II): RWY 04L: CAT II; RWY 04R: CAT I; RWY 12: CAT I; RWY 22L: CAT II; RWY 22R: CAT I; RWY 30: CAT I.

3. SAFETY MANAGEMENT SYSTEMS

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

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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

- a) Training: The danger of Foreign Object Damage, and how to prevent FOD being a safety hazard, is an integrated element of Copenhagen Airport’s (CPH) apron training.
- b) Inspection by airline, airport, and airplane handling agencies: This is done for repeatedly four to five times every 24 hours by personnel from the Airports Traffic Department.
- c) Maintenance (use of sweeping, magnetic bars, rubber strips, FOD containers etc): This is done by sweepers, magnetic bars and FOD containers.
- d) Co-operation of multiple agencies using airport (airlines, handling agents etc): This is done by the Airside, Safety, Operational & Technical Committee.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? The usage of ASM/GCS and visual observations.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Not during the last year.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMSAS; or ASD-E; the Model X Airport Surface Detection Equipment): A-SMGCS.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Provision of H24 stop-bar supplemented with instruction markings/enhanced taxiway centrelines has made holding positions visible with a noticeable potential to reduce the number of runway incursions. More visible runway guard lights, based on high power LED technology, will complete the achievements related to runway incursions.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, aircraft vehicle operators, and other people who work at the airport? All persons who wish to operate on their own outdoors on airside must pass the theory course and test as well as the subsequent practical test required in order to obtain an Airside Traffic Permit. At Copenhagen Airport we operate five different types of drivers permits, depending on how close to air traffic you operate. Every person holding an Airside Traffic Permit must pass the refresher training required at least every third year in order to have the permit renewed.

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: CPH retains the main grass areas with tall grass (above 50cm) in periods with high numbers of gulls and lapwings. For the rest of the year, the grass length is between 21 and 30cm. CPH covers permanent water areas with nets, and works towards a reduction of any temporary fresh water pools. Additionally, CPH wants to reduce the wooded areas known to attract wood pigeons, magpies and crows.

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

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Pyrotechnics, shotguns, dogs, green lasers, traps for crows and distress calls.

6.4 Do you carry out a bird population risk assessment? Yes, monthly, and a revision of the risk values for birds is carried out once a year.

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

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes, with hares, and they are being reduced to the lowest possible number by a regular hare-shooting.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type); year of manufacture: 2x Rosenbaan Panther, 6x6; 11,000l water, 225kg dry powder, HRET snozzle; 2008, 6x Rosenbaan Panther, 6x6; 12,500l water, CAFS; 2013 & 2014, Rosenbaan Panther; 6x6; 12,500l water, CAFS; 2007 – spare.

7.2 Future developments – are there plans to purchase or dispose of any equipment? Sea rescue vessel (2019).

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

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November-April.

8.2 Average annual days of snow: 11. days.

8.3 Average snow depth: 10cm.

8.4 Maximum snow in 24 hours: 42cm.

8.5 Annual number of days of de-icing activities: 91 days.

9. WINTER ORGANISATION

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

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example,
compact jet sweeper, Schmidt, CJS 720, 4 units; Sweeper, Øveraasen RS400, 11 units; sweeper, Øveraasen SB470, 5 units; sweeper, Øveraasen RS400, 11 units; sweeper, Øveraasen BS470, 2 units; snow blower, Øveraasen TV 110-150-825S, 1 unit; snow blower, Oshikosh H271BB; Highspeed, 3 units; snow blower, Viking UTV, 1 units; tractor, John Deere, 4 units; tractor, Lundberg Hymnas 7200 LSE, 2 units; tractor, Caterpillar, 2 units; tractor, Lundberg Hymnas 4200 LS, 5 units; tractor, Kubota 135k, 5 units; tractor, Kubota 95 k, 9 units; tractor, Holder/Kubota, 6 units; friction tester, SAAB, 2 units; anti-icer spreader, Damman spreader (40m), 2 units; anti-icer spreader, Epoke 1520/3W5015, 2 units; anti-icer spreader, NOID Stratos, 3 units.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: Priorities of priority of priority of priority snow clearing as expected to be used, as well as adjoining holding positions and taxiways. Access road for deicing vehicles between the fluid tanks and the platforms. Access roads from fire stations to the runway system (including rescue road Sandumsvej). Aircraft stands (including bus-served stands with air bridges), apron taxiways and areas where airline passengers walk on the apron. (Note: The exact clearing order will be arranged between the Snow Superintendent and the Stand Allocation Unit, and subsequently coordinated with Navigair during the snow clearing process. On Apron East the clearing process will be arranged based upon the actual traffic information available.) The operational area on each aircraft stand, i.e. an elongated area along the stand centerline, which must be swept and cleared in order to ensure that the aircraft and the pushback tug can maneuver, and that ground handling can take place securely. Priority 2: Secondary runway with adjoining holding positions and taxiways. Access road to collecting tanks at De-icing Platforms A, B and V. Priority 3: Third runway. Remaining taxiways. Secondary aprons and maintenance areas. Other areas for pedestrians.

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

11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? 11.4. After severe snow, how quickly do you expect to achieve ‘black top’ on the runway? 15 to 20 minutes.

11.5 FRICTION TESTING

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

11.6.1 Have you any other comments on experience with chemicals? Yes, we are testing the use of Aviform L25 and a mix of Aviform L50 with 50% water for use in non-aircraft zones.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Primarily formate-based thawing agents are used to combat snow and ice on runways and taxiways. This includes: Aviform L50, a liquid potassium-formate product which is used for the de-icing of runway, taxiway and apron surfaces, as well as the humidifying of granulates. CAS-No. 590-29-4*. Aviform S-Solid, a granulated sodium-formate product, which is used for the de-icing of runway and taxiway surfaces, and which is humified with Aviform L50. CAS-No. 141-53-7. Both agents comply with the national snow plan in AIP Denmark, the grain size of the sand used must not exceed 0,4mm. Sand containers for common use are distributed all over the apron area. Ordinary road salt (sodium chloride) may still be used on some isolated parts of the airport, which are properly screened-off from areas with aircraft traffic. Note: Road salt must not be used on airline roads and open spaces situated within 50m from the edge of areas with aircraft operations, and where there is an obvious risk that vehicles may drag saline particles onto aircraft stands, taxiways, or runways.

13. ICE WARNING SYSTEMS

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

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

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

14. AIRCRAFT DE-ICING

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

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

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

15. FRICTION TESTING

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

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

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of the chemicals that you use: Liquid de-icer is stored in two 55,000L tanks. S-Solid in stock – 30,000kg.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Aviform S-Solid is mixed in ratio 1:1 with Aviform L50 to avoid “blow-away”, and thereby provide high efficiency. 12.4 Have you experienced any corrosion problems with de-icers? No, CPH has not experienced corrosion problems above normal, when performing corrosion control programs.

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

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

12.7 Do you use other chemicals or salts for de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No comments.

12.8. Are you required to have dedicated de-icing positions? If so, please state vehicle or other facility manufactures, and number of units: No comments.

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

15. FRICTION TESTING

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

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

16. FUTURE DEVELOPMENTS

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

DUBROVNIK

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Dubrovnik Airport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary
operational facilities and the surface areas (for
example: total RWY length (or lengths), Take
Off Run Available (TORA), RWY width, shoulder
widths, total apron area, ramp area, other):
RWY12: 3,300m×45m, TORA 3,300m, TODA
3,300m, ASDA 3,300m, LOA 3,150m.
RWY30: 3,300m×45m, TORA 3,300m, TODA
3,300m, ASDA 3,300m, LOA 3,300m.
2.2 Landing aids for each RWY (e.g. CAT II):
RWY12: CAT I 900m W VRB LH, PAPI 3 BOTH.
RWY30: SALS 420m R VRB LL, PAPI 3.2 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?
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
control FOD in terms of:
a) Training: All airside pass holders have
FOD awareness training as a part of Airside
Safety and Airside Driving Training,
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 bins.
d) Co-ordination of multiple agencies using airport
(airlines, handling agents etc): Airside Safety and
Airside Driving Training, 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.
5.2 Are there any design or engineering changes being undertaken/required to eliminate perceived hazards?
No, since we have very simple aerodrome layout.
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, since we have very simple aerodrome layout.
5.4 Comment on the use of any innovative
warning 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 and Airside Driver Training is
mandatorily for all airport personnel.
5.6 Have the reporting procedures for runway safety
incidents been set up jointly with other parties active in
these processes? Further, do they safeguard the ‘non-
punitive’ principles such as ‘no-penalty’ reporting?
Yes.
6. BIRD AND WILDLIFE CONTROL
6.1 Please detail the 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
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?
They are working continuously as a part
of Rescue and Fire Fighting 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
multipulseurs), 3 gas cannons (Guardian 2),
ypotechnics, vehicles with sirens, 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 (4×4, 4×6);
capacities (kg/titre and year of manufacture:
ZIEGLER TITAN (26), 6×6, 12500L/Water, 1500 L/
foam, 250 kg/powder, year 2013. ZIEGLER MAN
(FLF 80/91-11), 6×6, 9100 L/Water, 1100 L/
foam, year 2003. ROSENBAUER – DSHSH (FLF
10000), 6×6, 9000L/Water, 1000 L/foam, 250 kg/
powder, year 1982. ROSENBAUER – TITAN (SIMBA),
8×8, 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.
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 form 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, CIS J20, 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 PB-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?
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, 1,000 kg.
12.2 Comment on storage capabilities of the
chemicals that you use:
None.
12.3 Comment on your experience with
solid de-icers, for example mixing ratios
with liquids, “blow-away factor” etc:
None.
12.4 Have you experienced any
corrosion problems with de-icers?
No.
12.5 Have you employed any special means
to economise on chemical use?
No.
12.6 Do you have any other comments
on experience with chemicals?
No.
12.7 Do you use other chemicals or
sand on operational areas?
Yes, sometimes we use sand or salt on apron area.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/
20 AIRSIDE SAFETY SURVEY 2015

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 08/26: 2,076x48m. RWY Designator: 08, TORA (m): 2,037, TODA (m): 2,255, ASDA (m): 2,037, LDA (m): 2,037. RWY Designator: 26, TORA (m): 2,076, TODA (m): 2,657, ASDA (m): 2,076, LDA (m): 2,037.

2.2 Landing aids for each RWY (e.g. CAT II): Taxiway Echo, Taxiway Alpha, Taxiway Golf.

2.3 Please list the equipment that you would like to sell? No.

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

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.

3.2 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 it is accredited by ESI 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 trained as required, and assessed annually. A member of the Airfield Operations team holds the role of FOD Officer to monitor FOD found, investigate and stop source and raise general FOD awareness across the airport. b) Inspection by airline, airport, and airplane handling agency personnel: Airport personnel. c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD Boss and mechanical sweeper on 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): N/A.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: All runway hold points have designator, enhanced centreline and runway ahead marknings 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 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

6.1 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, 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 lawsuit): 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 CFP 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? N/A.

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November-March.

8.2 Average annual days of snow: 2 days.

8.3 Average snow depth: 4mm.

8.4 Maximum snow in 24 hours: 17mm.

8.5 Annual number of days of de-icing activities: 7 days.

9. WINTER ORGANISATION

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

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): 4x ploughs; 1x Sciard snow blower; 1x CJS 720, runway de-icer, 5,000 litre capacity; de-icing towable bowser, 2,500 litre capacity; de-icing towable bowser, 1,000 litre capacity

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 08/26, Taxiway Bravo, main Apron, Taxiway Charlie, Taxiway Echo, Taxiway Alpha, Taxiway Golf.

11.2 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. Yes.

12.2 Do you use other chemicals or sand on operational areas? No.

12.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? 2-6 hours.

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.

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: 2 units provided by Flybe Aviation Services.

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

FARNBOURGH

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Farnborough 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, others: Runway 06: TORA 2,000m; TODA 2,060m; ASDA 2,590m; LDA 1,800m. Runway 24: TORA 2,063m; TODA 2,132m; ASDA 2,440m; LDA 1,800m. Runway 06/24: 2440x46m, Ramp Area: 95,430sqm. Apron: 53,000sqm.

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

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, although a full review of the SMS was undertaken this year (to be published October 2014) and the policy and principles remain the same.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training: All staff undertake an induction course where the FOD is brought to their attention.

4.2 Inspection by airline, airport, and airplane handling agency personnel: A full airfield inspection is carried out twice a day and all ramp staff are trained to continually monitor the area they are working for FOD.

4.3 Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): The whole airfield is dived into 7 and one area per day is subject to mechanical sweeping. FOD bins are positioned at various places both landside and airside.

4.4 Co-ordination of multiple agencies using airport (airlines, handling agents etc): All aircraft handling is carried out in house.

4.2 General: Are there any special systems or software solutions you employ for FOD control? None.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? VHF and UHF radio with ATC.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All runway stop-bars are lit whilst the airfield is operational. Stop bar have been re-calibrated to provide a night illumination of 15.2.

5.3 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 airport drivers are required attend company driving course and pass an exam. Various categories of licence are issued with licences that require runway access are kept to the minimum.

5.4 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

6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Habitat management consists of long grass policy, continuous surveillance throughout operational hours, active dispersal of birds by mobile patrobes and intelligent gathering and record keeping to produce sound data which are used to base any modifications to our bird control policy.

6.2 Do your bird control staff working on the airfield continually, hourly, less than hourly? Continuous during hours of operation.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Scarecrow digital distress calls.

6.4 Do your bird control staff working on the airfield continually, hourly, less than hourly? Not currently.

6.5 If your airport operates a Fire Training Simulator, is this available to other airports for training purposes? Yes, we have a Cat 7 training rig that is available for use by other airports.

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: 3 days.

8.3 Average snow depth: 2cm.

8.4 Maximum snow in 24 hours: 5cm.

8.5 Annual number of days de-icing activities: Varies from year to year, but average of 20.

9. WINTER ORGANISATION

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

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example compact jet sweeper, Schmidt, CJS 720, 4 units): 2x SMI – SW324 Runway Sweepers pulled by John Deere Tractors; 2x Bunce SNOPPRO Runway Snowploughs mounted on John Deere Tractors; 2x Bunce Mikro 81 Sweeper/Snowplough mounted on John Deere Tractors; 1x trailed 3500 litre de-icing rig towed with John Deere Tractors; 1x 1800 litre tractor rear mounted de-icing rig.

11. PROCEDURES AND METHODS

11.1 What is your process of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Minimum requirements before aircraft operation can begin: Clear runway to minimum of 30m width. Clear Cat 1 taxiway route. Clear adequate apron area to accept plans of arriving aircraft.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Both runway snow sweepers clearing snow in a chevron formation. Cat 1 taxiway cleared to min taxiway width this is generally one pass.

11.3 Describe your airport’s programme to control FOD in terms of: a) Training: All staff undertake an induction course where the FOD is brought to their attention.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Konsin – last year we used approximately 3,000 litres (very mild season). This product is very effective with holdovers of at least 24 hours.

12.2 Comment on storage capabilities of the chemicals that you use: We can store 95,000 litres.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Not used.

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

12.5 Have you employed any specialist means to economise on chemical use? Computerised delivery.

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

14.2. Are you required to have dedicated de-icing positions or do you use the parking area? De-icing on parking areas.

14.3 Is glycol recovered? If so, please state methods: Not recovered.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Griptester Mk2.

15.2 Have you any comments on the reliability of friction indexes? No.
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. RWY A/B/C/L2/D/E/F/P/ RD/ RG: 23m. Main Apron: 271,061m.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 28 – CAT II aids installed. Runway guard lights are installed.

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?

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of:
   a) Training: No stand-alone training program. FOD training is included in the Airport Rules and Regulations Training.
   b) Inspection by airline, airport, and airplane handling agency personnel:
   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.
   e) Maintenance: No.
   f) Co-ordination of multiple agencies using airport (airlines, handling agents etc): 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 (TWI). ATS (TWI) and Airport Operations have a local protocol to regulate the remaining airspace 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) Training: All.
   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.

5.4 Describe your airport’s programme to control FOD in terms of:
   a) Training: No.
   b) Inspection by airline, airport, and airplane handling agency personnel: No.
   c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): 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? All drivers have an initial training programme. Yearly, safety campaigns involving major handlers and all drivers.

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

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses?

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

6.3 What specialist equipment do you employ for bird control?

6.4 Do you carry out a bird strike 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)?

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

6.7 CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating:
   a) Vehicle type: chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type)
   b) Year of manufacture:
   c) Yearly, safety campaigns involving mechanics, airport vehicle operators, and other people who work 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? Reporting procedures according National Law and EU Directive 2003/42.

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   b) Year of manufacture:
   c) Yearly, safety campaigns involving mechanics, airport vehicle operators, and other people who work at the airport.

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   a) Vehicle type: chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type)
   b) Year of manufacture:
   c) Yearly, safety campaigns involving mechanics, airport vehicle operators, and other people who work 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? Reporting procedures according National Law and EU Directive 2003/42.

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6.1 Do your staff attend recognised bird control training courses?

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

6.3 What specialist equipment do you employ for bird control?

6.4 Do you carry out a bird strike 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)?

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

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   a) Vehicle type: chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type)
   b) Year of manufacture:
   c) Yearly, safety campaigns involving mechanics, airport vehicle operators, and other people who work 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? Reporting procedures according National Law and EU Directive 2003/42.

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6.1 Do your staff attend recognised bird control training courses?

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6.3 What specialist equipment do you employ for bird control?

6.4 Do you carry out a bird strike 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)?

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

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7.1 Please detail your CFR vehicle inventory stating:
   a) Vehicle type: chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type)
   b) Year of manufacture:
   c) Yearly, safety campaigns involving mechanics, airport vehicle operators, and other people who work 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? Reporting procedures according National Law and EU Directive 2003/42.

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses?

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

6.3 What specialist equipment do you employ for bird control?

6.4 Do you carry out a bird strike 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)?

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

6.7 CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating:
   a) Vehicle type: chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type)
   b) Year of manufacture:
5. RUNWAY ENCIRCUMPTION PREVENTION

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

5.2 Are any design or engineering changes being undertaken to eliminate perceived hazards?

5.3 How are the runway incursions currently being monitored?

5.4 Does the airport have any runway incursion detection equipment?

5.5 Are there any design or engineering changes being undertaken to eliminate perceived hazards?

6. BIRD AND WILDLIFE CONTROL

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

6.2 How do bird control staff work on the airfield continuously, hourly, less than hourly?

6.3 What specialist equipment do you employ for bird control?

6.4 Do you carry out a bird strike risk assessment?

6.5 Do your staff log all their bird control activities?

6.6 Does your airport have problems with wildlife hazard management?

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

PART 2: WINTER SERVICES QUESTIONAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness?

8.2 Average annual days of snow:

8.3 Average snow depth:

8.4 Annual number of days of de-icing activities:

8.5 Annual number of days of de-icing activities:

9. WINTER ORGANISATION

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

11. PROCEDURES AND METHODS

11.1 Please state your procedure for clearing/defending the runway and related areas and 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 OH&SAS 18001. A complete risk assessment is carried out every year according to the MANIRA-Airport methodology (analysis methodology for the indicative level of wildlife risk for an airport).

6.5 Do your staff log all their 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?

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

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating:

7.2 Does your airport have a comprehensive ‘no-penalties’ reporting system?

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

7.4 What is the designated period of winter readiness?

7.5 What are the primary hazards in forcing the fence and creating a hazard for aeronautical traffic.

7.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

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

7.8 What is the designated period of winter readiness?

7.9 What are the primary hazards in forcing the fence and creating a hazard for aeronautical traffic.

7.10 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?

7.11 Please state your procedure for clearing/defending the runway and related areas.

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 ANSR 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. Trucks equipped with snow blades and sweeper-blowers push the snow from the centre to the edges of the apron, loaders load the snow on trucks which then 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, ‘black top’ of the runway is usually achieved in 15 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with their quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc. De-icers quantities used during the winter season 2013-2014: For runway and taxiway: Safeway KF Hot, 85,000l. For aircraft: Glycol type 1 – 531,157l; Glycol type 4, 536,158l.

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 with de-icers.

12.5 Have you employed any special means to economise on chemical use? For three seasons, the quantities of product applied have been optimised according to the weather (temperature and humidity). Each sprayer is equipped with the Boschung Thermostat system, which spreads the chemical after defined curve and 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 de-icers or sand on operational areas? GA does not use sand.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: GA has sensors (active sensor to simulate freezing conditions) which spreads the chemical after defined curve and the service reports sent to FOCA.

13.2 Have you any comments on the reliability of friction indexes? No comment is made on the reliability of GVAs friction index. The two ASFT friction testers are certified before each winter season and the service reports sent to FOCA.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti-de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units: The handling agents carry out the aircraft anti-de-icing operations using special de-icing trucks.

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

14.3 Is glycol recovered? If so, please state methods: Glycol is recovered by a truck which absorbs it on the apron. After use, glycol is put into a circuit where it is treated (no recycling).

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Two ASFT friction-testing vehicles.

15.2 Have you any comments on the reliability of friction indexes? No comment on the reliability of GVAs friction index. The two ASFT friction testers are certified before each winter season and the service reports sent to FOCA.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? Currently no major changes are planned in the airport’s winter operations and procedures.

16.2 Do you currently have equipment or other facilities (including manufacturer and number of units): No.

16.3 Do you have any winter services equipment which you would like to sell? No winter equipment is currently for sale.

Graz

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Flughafen Graz Betriebs GmbH

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): Dimensions 3,000m (left and right, 7.5m shoulders), with shoulders 3,000x60m. TORA 17C: 3,000m, TODA 17C: 3,060m. TORA 35C: 3,000m, TODA 35C: 3,000m. Grass runway (17L/35R and 17R and 35L): Taxiways: A – width 23m, B – width 23m, C – width 23m, D – width 23m, X – width 10m, Y – width 15m. Aircraft parking: 13 positions for A/C Cat. C, or 4 positions Cat. D and 4 positions Cat. C. 2 positions A/C Cat. E. 32 positions till max. Cat. B. 6 positions for helicopter. 2.2 Landing aids for each RWY (e.g. CAT II): 35C: 35 C Cat IIIa ILS. 17C: 17 C No.1.

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."
8. EXPERIENCE WITH CHEMICALS
12.1 Comment on your experience with Harnstoff (solid de-icer) 60 tonnes.
12.2 Have you experienced any corrosion problems with Urea and Urea. Urea is very aggressive to metal parts.
12.6 Do you have any other comments on experience with chemicals?
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Boschung SCU 2002 and GFS 2000 with four measuring action ions.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)?
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti-/de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units:
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Skidometer BVL1, 2 units.
16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your airport’s methods? Yes, we would change the airblast sweepers with larger models so we need less time for the clearing of the runway.
16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details:
16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units:
16.4 Do you have any winter services equipment that you would like to sell?

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):

Runways: 315,800sqm (RWY 05/23 and RWY 15/33), Taxiways: 320,600sqm. Aprons: 491,300sqm. Runway shoulders: 92,000sqm. 2.2 Landing aids for each RWY (e.g., CAT II):
3. SAFETY MANAGEMENT SYSTEMS
3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? 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; Runway Safety Committee – regular meetings every two weeks during the winter period; Runway Safety Team – four times a year.
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 airline handling agency personnel: Regular inspections are carried out as part of the mandatory ICAO airfield inspections at least once 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 ABC (Airline 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 in roadside 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, including Sensor Techniques (Multilateration).
5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies:
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:
4-6 cm.
8.4 Maximum snow in 24 hours:
12-15 cm.
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 are subcontracted.
Up to 5 persons for cleaning and sweeping by hand in stand areas (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 winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJ5 270, 4 units): 11 snow ploughs, 11 airlast cleaner, 1 rotary snow plough, 3 front loaders, 1 turbine snow loader, 1 spreader for solid substances, 3 spreaders for mixed substances (solid and liquid), 1 liquid de-icer, 3 tractors with front spreaders, 1 spreader for solid substances with front spreader, 1 spreader for solid and liquid substances with front spreader.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 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 snow ploughs and sweepers will clear the runway in one direction forming a diagonal line. Firstly the mainly used taxway vehicles connected to the runway in use will be cleared in the same way. At the same time, taxi-lanes on the aprons and A/C-stands are swept in sequence.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway?
25-30 minutes for each runway.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season.
Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Liquid: Kaliumformiat, 600sqm; solid: Natrumformiat 50lt. Good results at temperatures up to -15 degrees Celsius – three days in dry weather conditions.
12.2 Comment on storage capabilities of the chemicals that you use: Sand-silo: 150sqm; liquid: 300,000lt; solid: 60 big bags – 750kg 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 solid and liquid.
12.4 Have you experienced any corrosion problems with de-icers?
No, but aircraft manufacturers spoke about a suspicion that the chemicals used might have a negative impact on carbon brakes.
12.5 Have you employed any special means to economise on chemical use?
Good results achieved using multi de-icing vehicles. Spreading is not related to speed, no wasting.
12.6 Do you have any other comments on experience with chemicals?
None.
12.7 Do you use other chemicals or sand on operational areas?
No.

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-ic 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? 2x WH-SHARAN Friction Testers (ASFT).
15.2 Have you any comments on the reliability of friction indexes?
Higher liability of ASFT compared to SFT.
b) Inspection by airline, airport, and airplane handling agency personnel; Inspection of runway and taxiway environment twice a day. Inspection of parking positions is performed before every use by the marshal and ramp agent.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintenance performed by sweeping and FOD containers.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Described in Airport Operational Instruction approved by Civil Aviation Office. Responsibility of co-ordination: 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): We do not have any software solutions. FOD is controlled 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 in the manoeuvring area by TWR.

5.2 Are any design or engineering changes being undertaken to reduce the risk of runway incursions? A light 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 of 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 are mandatory trainings about behaviour and awareness in operational 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? Yes, there have been incidents which were reported to the Duty Officer & Safety Manager.

The SM and Internal Commission are responsible for investigation into such cases.

6. BIRD AND WILDLIFE CONTROL

6.1 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 through many different devices, recorded distress calls, pyrotechnics, shotguns, mowing the grass to the right height, and securing buildings in the winter before setting up bird nests.

6.1 Do your staff attend recognised bird control training courses? We will attend in 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 (Marshal, Duty Officer & airfield continuously, hourly, less than hourly?

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Electronic control device, starting, Type ZON ELOB, 3 units; stun guns, Type Baafs 9, 11 units; sound device, BG Super Pro AMR 3 units; portable sound devices, Scarecrow, 1 unit.

6.4 Do you carry out a bird strike risk assessment? We carry out a bird strike risk assessment every month and bird clearance with every landing/take-off, or second hour.

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 problem with wildlife like deer or wild boars.

7. CRASH FIRE RESCUE

7.1 Please detail your CFF vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities in floor and t.p.m; year of manufacture; Panther; Rosenbauer; 4X4; r. 6.280; 2009. Panther; Rosenbauer; 6X6; r. 12,500; 2009. Baracuda; Bughtour; 4X4; r. 5,300; ~ 1990. Baracuda; Bughtour; 6X6; r. 10,000; water; 1990. Baracuda; Bughtour; 6X6; 12,000; water; 1994. Baracuda; Bughtour; 6X6; 12,000; water; 1994.

7.2 Future developments – are there plans to purchase or dispose of any equipment? We plan to purchase two cars – Panther; 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 rescuers to England.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? The airport’s 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 de-icing 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.

9.2 What would you like to purchase an ice warning system – Ice Alert, by Findlay Irvine.

9.3 Have you experienced any corrosion problems with de-icers? We have not any corrosion problems with de-icers (Clearway). Only urea (carbamide) is aggressively corrosive. Due to corrosion, this chemical is only used only for inside areas, excluding parking, technical roads etc.

9.4 Have you employed any special means to economise on chemical use? Application controls the amount of fluid on the surface.

9.5 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 temperature -4 centigrade. Due to aggressive corrosion we do not apply it to the runway and taxiways.

9.6 Do you use other chemicals or sand on operational areas? No, we do not use other chemicals or sand on operational areas.

10. ICE WARNING SYSTEMS

10.1 State model and number of ice warning systems: We do not have any ice warning system.

10.2 Have you plans to purchase further ice warning systems and CLARIANT SAFEWING MP I 1938 ECO, Type I. For de-icing – CLARIANT SAFEWING MP II FLIGHT, Type II

10.3 Have you experienced any benefits/disbenefits of ice warning systems: During strong freezing rain and drizzle we used 140 tons Aviform and 10 tons KCH S-Solid.

10.4 Comment on your experiences of the ice warning system – Ice Alert, by Findlay Irvine.

10.5 Expect to achieve “black top” on the runway after heavy snow? We are ready to achieve “black top” on the runway after heavy snow.

10.6 After moderate snow we are ready to achieve “black top” on the runway within 5-10 minutes.

10.7 After strong snow, we are ready to achieve “black top” on the runway within 25-30 minutes.

11.1 Please state here order of priority of de-icing operations? At the end we enclosed charts and method runway clearance.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: At the end we enclosed charts and method runway clearance.

11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? After moderate snow, we are already to achieve “black top” on the runway within 5-10 minutes.

11.4 After strong snow, we are already 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 We use every year the next-generation de-icers chemicals: KCH 5-Solid – flowing product, Aviform LSO – liquid Alert, by Findlay Irvine.

12.2 Comment on storage capabilities of the chemicals that you use: Liquids are stored in containers of 60,000L. Flowing product is stored in bins 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 aggressively corrosive. Due to corrosion, this chemical is only used only for inside areas, excluding 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 temperature -4 centigrade. Due to aggressive corrosion we do not apply it to the 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.

12.8 Comment on your experiences of the benefits/disbenefits of ice warning systems: None.

13. AIRCRAFT DE-ICING

13.1 State model and number of ice warning systems: We do not have any ice warning system.

13.2 Have you plans to purchase further ice warning systems and CLARIANT SAFEWING MP II FLIGHT, Type II and CLARIANT SAFEWING MP I 1938 ECO, Type I. For de-icing operations we use special aircraft vehicles.

13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: None.
We have special stands to anti/de-ice the aircraft. Aircraft de-icing is carried out on Apron L, stands 1-3, 16-18, 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-three friction testers: SAAB Friction Tester, BOWMONK AFM 2 - Airfield Friction Tester and/GRIPSTEER 210.

15.2. Have you any comments on the reliability of friction indexes? All our comments are included in each SOWTAM.

16. FUTURE DEVELOPMENTS
16.1. Are you about to change any of your airport’s methods? The introduction of sanding on the new concrete aprons.

16.2. Do you plan to purchase new equipment or vehicles? If so, please provide details: We plan to purchase two cars – Panther, 6x6, 12,500l water, in 2015.

16.3. Do you currently have any 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

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Joze Pucnik Ljubljana 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): Single runway: 3,300x45m; TORJA; 3,300. Runway strip: 4,320x300m.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 30: ILS CAT II/IIIB/ 125m RVR for passenger aircraft and 200m RVR for cargo aircraft.

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 implementation process is in the final stage (hazard identification and risk assessment).

3.2 FOD PREVENTION
4.1 Describe your airport’s programme to control FOD to be effective:
   a) Training: We have a FOD management programme. According to this programme the content of every initial and recurrent training of ground handling staff and SMS training feature FOD awareness.
   b) Inspections by airline, airport, and airplane handling agency personnel: Aiside FOD inspections are done by aiside inspection, following the schedule of the FOD management programme and in addition in special circumstances, like the renewal of old pavement on airside or work construction of the new airside infrastructure.
   c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Use of the vacuum cleaner with brushes, FOD carpets and brooms. At last once a year, usually in early springtime, we organise a FOD cleaning action to collect any FOD from the manoeuvring area, to which we invite as many airside uses (handling agents, aircraft maintenance, cargo storage and others) as possible. On the apron we set up special FOD containers (yellow-coloured with ‘FOD’ sign).
   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 type of monitoring vehicle and aircraft movements on the ground? Two-way radio communications. In CAT II/III/B only one aircraft movement is allowed on the apron.

5.2. Are any design or engineering changes being undertaken to prevent/on-perceived hazards? The runway stop-bar overrun identification system in future for monitoring vehicle and aircraft movement on the manoeuvring area that enter or exit the runway.

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 SMR or equivalent for monitoring vehicles and aircraft movements on the ground.

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 marks according to the 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 licence) is essential for vehicle operators entering the runway.

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 ‘no-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: The main problems we have are with birds of prey (buzzard and kestrel). According to that we do all we can to reduce the attractiveness for that king of bird species of the airport area. The environment study is now looking at optimal and economical grass management inside airport grounds, and at the same time at reducing the quantity of their food sources at the airport (mice and voles on the grass land) by poisoning them and with mechanical treatment like the special roller for deep soil and grass turf penetration at least once a year. The airport is more or less surrounded with solid forest. Around 8km (SW) from the airport there is a river with two artificial lakes. Around 15km (NE) away there is mountains.

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

6.2. Are your bird control staff working on the airfield continuously, hourly, less than hourly? Bird control staff are working on the airfield in accordance with the IBIS practices and recommendations followed by ICAO of Airport Services Manual, Part 3, Chapter 9.2 – Wildlife control and reduction.


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? From the time to time we have had in the past foxes inside the airport perimeter. We made constant monitoring of the critical airfield near the runway with thermo-cameras by night.

7. CRASH FIRE RESCUE
7.1. Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x6); capacities (kg/litre and type); year of manufacture: Rosenbauer PANTHER; 8x8; 13,500l water, 1,500 l FFFF foam, 500kg dry powder; pump: Rosenbauer R600 – 6,000l/min; 1998. Rosenbauer PANTHER; 6x6; 12,500l water, 1,500 l AFFF foam, 250kg dry powder; pump: Rosenburger R600 – 6,000l/min; 2014. Rosenbauer FALCON; 4x4; 3,300l water, 300l AFFF foam; pump; Rosenbauer R280 – 3,000l/min; 1998. Rosenbauer TLF3000/200; 4x4; 3,000l water, 200 l AFFF foam, 90kg of CO2; pump: Rosenbauer NH30 – 3,000l/min; 2008; Mercedes-Benz SPRINTER; 4x4; 300l water, 201 l FFFF foam; pump; Rosenbauer UHPS M400, 38l/min at 100 bar; 2001. Renault TRAFFIC; 200l water, 40l FFFP foam; pump; Rosenbauer UHPS M400, 38l/min at 100 bar; 2006. 7.2. Future developments – are there plans to purchase or dispose of any equipment? Yes. The plan is to replace the command vehicle (MB Sprinter) in year 2015.

7.3. If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Its purpose is only for internal training of the APFF staff.

PART 2: WINTER SERVICES QUESTIONNAIRE

8. RECENT WINTER CONDITIONS
8.1. What is the designated period of winter readiness? From 1November until 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: 15 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 aircraft de/anti-icing. For snow cleaning (runway, taxiways, aprons, stands and service roads), there are three groups with
15 members each. In case of heavy snow there is an agreement for an approved 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); Skoala Octavia ASF, 1 unit; friction tester, SARSYS, 1 unit; blower sweeper, Schoering P17 and P17B, 4.2m – max. 40km/h; 2 units; blower sweeper, Schoering PS2, 4.2m – max. 30km/h, 2 units; blower sweeper, Schmidt 420, 4.2m – max. 40 km/h, 1 unit; snow plough, Schmidt, 4.8m, 2 units; snow plough, Riko, 4.8m, 6 units; snow plough, Schmidt, 2.5m, 1 unit; truck Mercedes 2031, 3 units; truck, Mercedes 2032, 3 units; truck, Mercedes 2030D, 5 units; fertiliser/spreader spreader EPOKE SH 4520 (solid and fluid), 1 unit; truck, TAM 260 TB, 2 units; snow plough, Mercedes UNIMOG 1200, with spreader for solid, 1 unit; snow blower, BUCHER ROLBA 3000, 2 units; spreader for solid, 1 unit; agricultural vehicle, 1 unit; 3.6m.

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 runway; 3. Taxiways:
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: The number of vehicles, formation and method of runway, taxiway and apron are the part of Snow Plan issued each year. 11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? 20 minutes.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Urea (solid) approximately 100 tons – effective till ~5 degrees Celsius, holdover time depends on the weather conditions (precipitation). Safeway KF (potassium formate) approximately 10,000 – effective till ~25 degrees Celsius.
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 factors” etc: The mixing ratio 10-15% of Safeway with urea is shown as the most. 12.4 Have you experienced any corrosion problems with de-icers? Yes, moderate. 12.5 Have you employed any special means to economise on chemical use? Treat them in the right time in relation with 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)? RWIS – Runway Weather Information System (ASFT Sweden) already deployed in winter season 2014/2015.
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: Comments will be after use of that system at least in one or two winter seasons with real winter conditions (with lot of snow and low temperatures).

14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/ de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units: Yes, De-anti-icing vehicles, Vestergard Elephant Beta, 2 units; de-icing vehicle, Vestergard Elephant Gamma, 1 unit; de-anti-icing vehicle, TBBO00, 1 unit. 14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? De-icing is performed at dedicated parking position for Safety Committee. In some circumstances it is being performed at aircraft 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? Skoala Octavia ASF, Saab friction tester, SARSYS friction tester. 15.2 Have you any comments on the reliability of friction indexes? For some carriers the friction index is relevant just in the case of ice/compacted snow. For slush/standing water, wet snow and dry snow, they said that the measured friction index is for them unreliable. In such cases for them it is relevant to measure the height of the deposit on the runway surface.

16. SAFETY MANAGEMENT SYSTEMS
16.1 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 assessment of risks and hazards identified by internal/external SMS audits? No significant changes made, established SMS in place.

17. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
17.1 Describe your airport’s programme to control FOD in terms of:
a) Training: All airside pass holders attend annual Airside Awareness Training, where FOD is discussed as well as the London City Airport (LCY) policy in regards to FOD control.
b) Inspection by airline, airport, and airline handling agency personnel: Maneuvering area inspections are carried out four times a day by Airfield Operations personnel, with a weekly walking inspection. Each aircraft stand is inspected by the Ground Services marshalling teams each time before use.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): FOD bins are provided on every stand and in Airfield Operations vehicles. The airport has a contract for fortnightly sweeping with an external contractor. All signatories must provide their own sweepers for clear up.
d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): FOD and reports of FOD incidents are discussed quarterly at an Airside Safety Committee forum.
17.2 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? Vehicle and aircraft movements are monitored visually by ATC and through position reporting in poor visibility. 5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? All runway stop-barrs are being upgraded to LED technology to increase visibility.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASD-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: All entry points to runway utilise runway guard lighting, appropriate signage and STOP marks compliant with CAP1688 requirement. 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 airside drivers sit Driver Awareness Training for April road permits, and any person requiring to operate on the maneuvering area must sit additional theoretical and practical training held in house by Airfield Operations. Any aspects affecting operating on the maneuvering area or runway are promulgated through specific Runway Safety Bulletins. A Local Runway Safety team consisting of key airport stakeholders and those operating on the maneuvering area, along with pilots, meet regularly to discuss any issues or concerns. The airport also hosts a Pilot Forum twice a year for pilot-specific issues.
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? NATS and LCY employ a transparent and consistent ‘Just Culture’ approach to the safety reporting of incidents.

London City Airport

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: London City Airport
2. MOVEMENT AND MANEUOVURING 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 27: TORA – 1,199m, TODA – 1,385m, ASDA – 1,319m, LDA – 1,319m. Runway 09: TORA – 1,199m, TODA – 1,319m, ASDA – 1,319m, LDA – 1,319m. Runway width: 30m. Stands Available: East Apron – 4; Main Apron – 10; West Apron – 3: Jet Centre – 1. 2.2 Landing aids for each RWY (e.g. CAT II): ILS & NDB for Runway 09/27, uncategorised due to steep approach, will be most comparable to CAT 1.
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 assessment of risks and hazards identified by internal/external SMS audits? No significant changes made, established SMS in place.

London City Airport

AIRSIDE SAFETY SURVEY 2015 29
6. BIRD AND WILDLIFE CONTROL
6.1 Do your staff attend recognised bird control training courses?
Annual training is provided by an approved external training contractor used widely in the industry.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly?
The Bird Control Unit is active on the airfield throughout the opening hours.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer):
All equipment used for bird control is industry standard (e.g. 90db sounder, shotguns, pistol shot, drone). Along with in-house built products – fake shotguns, lures etc. The bio-acoustic system is that produced by Scarecrow Bio-Acoustic Systems for playing bird distress calls. The only non-standard item is the Portek bird scaring rockets, designed to disperse thermalling gull species.
6.4 Do you carry out a bird strike risk assessment?
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)?
All activities are logged in a purpose-designed wildlife control log, which runs on iPads carried in the vehicles.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed?
There are no additional wildlife species that cause us issues. Due to the surrounding water we are rarely bothered by anything other than bird life. Occasional foxes have been sighted.
6.7.1 Please detail your CFR vehicle inventory stating:
- vehicle type;
- chassis (e.g. MAN);
- axles (4x4, 6x6);
- capacity (kg/litre and type);
- year of manufacture;
- vehicle type; chassis (e.g. MAN);
- axles (4X4, 6X6);
- Litter/foam tender carrying the following amounts of extinguishing media: 6,000l water, 720 lpm high ratio. Sideline discharge rate: 450lpm.
- incurred costs (kg/litre and type); year of manufacture; vehicle type; chassis (e.g. MAN);
- axles (4X4, 6X6);
- types of equipment used for bird control.

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating;
vehicle type; chassis (e.g. MAN); axles (4x4, 6x6);
7.2 Future developments – are there plans to purchase or dispose of any equipment?
No.
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness?
November to April.
8.2 Average annual days of snow:
1 day.
8.3 Average snow depth:
Not recorded.
8.4 Maximum snow in 24 hours:
6 inches.
8.5 Annual number of days of de-icing activities:
13 days.
9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift?
Approximately 138 with third-party contractor able to provide additional personnel to meet demand.
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, CIS 720, 4 units):
Jet sweeper (primary), Schmidt TJ5650, 4 units; brush sweepers (secondary), Sicard 314D, 3 units; 24m Knight Sprayer (runway de-icing), 1 unit; 20m Chaler Sprayer (runway/taxway/stands de-icing), 1 unit; 12m Gem Sprayer (runway/stands de-icing), 1 unit; Mini Gem Sprayer (roadways/stands de-icing), 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:
1. Runway 08R/26L
2. Runway 08R/26L
3. Taxiway
4. Roadways.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance:
Runway: Staggered formation using 4x SJ560 Schmidt jet sweepers blowing with the wind.
Taxiway: Staggered formation using 2x Sicard 314D sweepers blowing with the wind. Schmidt can be used subject to availability. Apron: 1x Sicard 314D per stand in concentric circle motion.
11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway?
If snowfall has stopped the runway can be cleared in approximately 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: Kilfrost is utilised on pavement areas, however a transition to Prosvifrost runway de-icer is commencing this season. Previous holdover time with Kilfrost subject to no precipitation has been observed red as about three days. Last season only approximately 2,000l was used as de-icing of the airfield happened on only one occasion.
12.2 Comment on storage capabilities of the chemicals that you use:
1x 25,000l bunded tank.
12.3. Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away” factor etc:
Solid de-icer has not been used, products are available to be tested this season.
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 expense with chemicals?
No.
12.7 Do you use other chemicals or sand on operational areas?
Solid de-icing products are available to be tested this season on runways.
13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems:
Met Office warning system.
13.2 Have you plans to purchase further ice warning systems and if so, which model(s)?
Throughout the winter season we will be subscribing to additional Met Office dedicated forecaster.
13.3 Comment on your experiences of the benefits/disenchant of ice warning systems:
Utilised mostly to establish staffing levels required on standby.
14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti-de-icing operations?
If so, please state aircraft or other facility manufactures, and number of units:
Aircraft de-icing provided by LCY Ramp Services team.
6-de-icing rings available: 1x FMC unit – 6,000l; 1x Vestergaard – 4,000l; 1x FMC/IDT unit – 4,000l; 2x Falcon Aviation (Transit Conversion) Rig – 750-1,000,000.
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area?
Aircraft de-icing occurs on parking stands.
14.3 Is glycol recovered? If so, please state methods:
Glycol is recovered using a purpose designed ‘Glyvac’ machine which vacuums excess fluid from the parking stands.
15. FRICTION TESTING
15.1 What model(s) of friction tester do you use?
Grip Tester Mark 2.
15.2 Have you any comments on the reliability of friction indexes?
CFME equipment not used during winter operations as per CAA regulation.
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 an ‘all in one’ 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 by 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 processes are introduced; incident review; high level risks reviewed monthly at the Managing Corporate Responsibility Board. A GAL Airside Compliance Audit was carried out in April 2014, which included SMS documentation. GAL PASS5 certified – Asset Management System.

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 that must be included in the 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 operates 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 bins. Strategically positioned FOD fences to catch wind-blown debris. Airfield Civil Maintenance programme. Skips placed at the airside 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 are used by Airfield Operations staff whilst carrying out airfield inspections. d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): FOD items which are too large to be placed into FOD bins, are reported to Airfield Operations, who will arrange collection/removal. FOD issues are raised at the 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 six months. GAL carries out a number of third-party audits each year, and companies 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 is issued to all airside operators. FOD awareness posters, endorsed by third-party airside 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): An additional, midnight multi-vehicle surface inspection is carried out daily by Airfield Operations. This includes the use of specialist sweeper vehicles. Waste Compactors operated in two airside locations. Skips placed on the airfield must be issued with a permit and be covered with a lid. Airfield Operations Training Manager. They must use training materials provided by Gatwick Airport to train on RGB H24 at all Hold Points. 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; and M 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 (LRST) van tours carried out in daylight and darkness during the year. National Air Traffic Services (NATS) has 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, procedures, which may need to be addressed to try and prevent a recurrence. All runway incursion investigations include playback of RTF comms and ground radar images, and the same are shared and assessed locally. All 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 runways. 5.2 Are all airport engineering changes being undertaken/required to eliminate perceived hazards? Installation of enhanced ‘Runway Ahead’ markings at holding point Bravo. Work planned to operate RGB H24 at all Hold Points. 5.3 What safety devices are currently employed? A-SMGCS; Airport Movement Area Safety System - AMSASS; or ASEDE-X, the Model X Airport Surface Detection Equipment; A-SMGCS, RIMCAS, AFDS, 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: Installation of enhanced ‘Runway Ahead’ markings at holding point Bravo. ‘Start of TODA’ signage installed on Runway OBL2/26R. When OBL2/26R 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 OBL2/26R. Holding point Alpha has red and white barriers installed to prevent vehicle-induced runway incursions. Installation of Taxiway Unavailable Bar System (TUBS). Taxiway pavement decluttering is used to identify 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; and M 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 (LRST) van tours carried out in daylight and darkness during the year. National Air Traffic Services (NATS) has delivered a number of Airfield Resource Management courses. NATS provides an

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6. BIRD AND WILDLIFE CONTROL

6.1 Please detail your habitat management policy and how it reduces 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, and complies with EASA – Regulation (EC) No.139/2014 – Annex IV – ADR.OPS.B.020 – Wildlife Strike Hazard Reduction: 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 representatives 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 incidents. All staff involved in bird hazard management activities are suitably equipped and maintained. Bird Patrols are carried out to ensure that: The presence of birds on the airfield and in the surrounding area is minimised; an environment not conducive to the presence of birds is provided; the birds are detected and dispersed; warning can be passed to aircraft and ATC about the presence of flocks of birds on the airfield; the formation of night roosts is prevented. Bird patrols are carried out across the active airfield. All areas are patrolled. with emphasis rather than concentration being on the active runway. Bird Hazard Assessment/Warning: Bird hazard assessment is carried out via the tactical bird patrols and strategic analysis by the Bird Co-
ordinator and Operations Management. 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 (CA Form 1282) is completed online via the CAA website by Airfield Operations on all occasions where there is a confirmed or unconfirmed strike.

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

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 manufacurer): Davis Pistols, Hmr Bolt Action Rifle, BSA Break Action Rifle, shotguns, i.e. Ducks.

6.4 Do you carry out a bird strike risk assessment? Yes – via Bird Strike Management Ltd.

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; class (e.g. MAN); axles (4x4, 6x6); capacities (kg/titre and type); year of manufacture: 1x Mitsubishi Shogun.Panther; 4x 12,500 water, 1,500 foam.

7.2 Future developments – are there plans to purchase or dispose of any equipment? A high access platform was 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 How was the designated period of winter readiness? 1 November to 31 March.

8.2 Average annual days of snow: Winter 2013/2014 – no snow.

8.3 Average snow depth: See above.

8.4 Maximum snow in 24 hours: See above.

8.5 Annual number of days of de-icing activities: 17.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? On-call system for staff (200), who are designated as “Polar Bears”. During Winter 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, 2x Airfield Duty Manager, 4x 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.

9.2 What is the level of Airfield Operations staff resource available for de-icing and what type of equipment is available? de-icer to apply a chemical anti-icing agent.

9.3 What is the level of airport terminal and office operations staff resource available for de-icing and what type of equipment is available? equipment. Sweeping operations will where the runway(s) should be stopped short of the 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.

9.4 What is the level of airport terminal and office operations staff resource available for de-icing and what type of equipment is available? moderate snow - visible settling up to 3cms. Runway sweeping commences, requiring restricted runway operations and clearance on taxways 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 / Brotherton’s Safegrip + – Liquid acetate chemical. CLEARWAY 6S – Solid acetate chemical. Brotherton’s Solid formate chemical. KONSIN – Liquid Gycol chemical (Will only be used by the discretion of the Airfield Duty Manager in line with London Gatwick Airport – Airfield Operations – Konson 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: Clearway/3 Brotherton’s Safegrip + – 176,000 litres; Konson – 442,000 litres; Clearway 6S/Brotherton’s Avform 6 – 35,000kg; Grit – 10,000kg.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc.

Out there are many different pre-treatments with a liquid anti-icer because of the of the blow away factor. However, we find it useful 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 published version of BS 812, 1973, Part 3.

13.2 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: 4,000m x 45m, shoulders: 2.7m x 5m paved; RWYs 18L/36R: 2,670 x 45m, shoulders: 2.7m x 5m paved. RWY 18R: TODA 4,000m, ASDA 4,000m, LDA 4,000m, Rwy 36L: TODA 4,000m, ASDA 4,000m, LDA 4,000m, RWY 18L: TODA 2,670m, ASDA 2,670m, LDA 2,670m, RWY 36L: TODA 2,670m, ASDA 2,670m, LDA 2,670m. 2.2 Loading 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.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti-/de-icing decision making.

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. Dedicated remote de-icing areas have been developed for the 2014/2015 Winter season, which will be used at the discretion of the Snow Co-ordinator during adverse weather conditions. Only airlines/de-icing companies who 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 – by sweeper.

15. FRICITION 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? None.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? Yes. See Vaisala comment at 13.1. Introduction of aircraft de-icing area on Taxiway Sierra. The Snow Plan is now incorporated into an Airside Operations: Adverse Weather Plan, which includes: Snow, flood, wind, heat, low visibility, volcanic ash.

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: GBP£2.2 million spent on upgrade to tractor, to have a snowplough on the front and brush at the rear. 1x snow cutter, 8x multihogs; 18x trackmaster; pedestrian powered snow brush. 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.

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? No.

5.3 What safety devices are currently employed? (a) SmartGCS; Airport Movement Area Safety System – AMASS; or ASDX-K; the Model X Airport Surface Detection Equipment: (b) SmartGCS; the model X Airport Surface Detection Equipment. 5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: 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 manoeuvring area, extra training for those who have to cross runways. Recurrent training after a period of 3 years for those who drive in the manoeuvring area.

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do the “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.

5.7 Are there meetings on operational procedures? Regular meetings take place (Local Runway or Safety Team / Safety Promotion Committee). The SMS guarantees the just culture principles.

6. BIRD AND WILDLIFE CONTROL

6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds. It will aim to increase the height of the short grass to 12cm, ensuring also never cut at a height of less than 9cm (except where shorter grass must be maintained for aids to navigation and drainage areas). Maintain the height of grass between 20 and 50cm. Minimise non-vegetated areas. We will try to cut grass in a way that reduces the attraction of the airfield to birds.
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3. SAFETY MANAGEMENT SYSTEMS

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:
25 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:
100 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift?
2 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); BOSCHUNG with blade 8.40m, 2 units; trucks 4x4 with blade, 4 units; tractor 300CV with tri-axes blade, 1 unit; tractors 816 with blade, 2 units; tractor 100CV with blade, 1 unit; AEBI with blade, 1 unit; multi-purpose vehicles with blade, 3 units; tractor 80CV with blade, 1 unit (+1 in reserve); sweeper with blade, 1 unit (+1 in reserve). Surface ice, black ice, residual snow layers; spreading of de-icing agent (over a width of 44m 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 strips 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.

11.2 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 45 minutes for the 4,000m runway length (included friction testing).

11.3 EXPERIENCE WITH CHEMICALS

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

12.2 Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Potassium formate (liquid) and Acetate (solid). In 2012, we used 175sqm of pavement de-icer (around 227 tons).

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Below -6 degrees Celsius 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.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems:
2 probe on taxiways, s which indicate ground temperature.

13.2 Have you plans to purchase further ice warning systems and if so, which model(s)?
1 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 comment.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti-de-icing operations? If so, please state vehicle or other facility manufactures, and number of units:
No 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 2 vacuum sweeper vehicles.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use?
ASTT friction testers.

15.2 Have you any comments on the reliability of friction indexes?
In case of fluid contamination (slush, wet snow) we don’t communicate the friction indexes but only an estimated friction.

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 ASTT trailer. One truck with liquid (30,000 litres)/solid (24 cubic metres) 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.

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Aeroporto de Madeira

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY Length: 2,781m. RWY 05: TORA, 2,631m (including 150m of pavement before threshold). RWY 23: TORA, 2,631m (including 150m of pavement before threshold). RWY width: 45m, shoulder widths: 3m, total apron area 82,487,000sqm, ramp area 110,809,000sqm.

2.2 Landing aids for each RWY (e.g. CAT III): Visual approach for both RWYs only. RWY 05 PAPI system with 3 degrees glide-scope on both sides of the RWY and RWY23 PAPI system with 3 degrees glide-scope on left side of RWY.

3. SAFETY MANAGEMENT SYSTEMS

PART 2: WINTER SERVICES QUESTIONNAIRE

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 VM90; 6x6; 9,000l water and 250kg powder. 1x VM90; 6x6 – spare.

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 3: 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:
25 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:
100 days.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift?
2 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); BOSCHUNG with blade 8.40m, 2 units; trucks 4x4 with blade, 4 units; tractor 300CV with tri-axes blade, 1 unit; tractors 816 with blade, 2 units; tractor 100CV with blade, 1 unit; AEBI with blade, 1 unit; multi-purpose vehicles with blade, 3 units; tractor 80CV with blade, 1 unit (+1 in reserve); sweeper with blade, 1 unit (+1 in reserve). Surface ice, black ice, residual snow layers; spreading of de-icing agent (over a width of 44m 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 strips 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.

11.2 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 45 minutes for the 4,000m runway length (included friction testing).

11.3 EXPERIENCE WITH CHEMICALS

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

12.2 Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Potassium formate (liquid) and Acetate (solid). In 2012, we used 175sqm of pavement de-icer (around 227 tons).

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Below -6 degrees Celsius 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.

13. ICE WARNING SYSTEMS

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

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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

a) Training: It is mandatory to have training about this issue before starting to operate in the manoeuvring area.

b) Inspection by airline, airport, and airplane handling agency personnel: Airport Duty Manager does inspections of the runways and aprons in accordance to Doc.9137.

c) Orientation (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Airport uses FOD containers at all airport stand position and sweepers.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination and reporting is done by Airport Duty Manager (24 hours).

4.2 General: Are there any specific 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, no need to take other measures.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment): Aircraft movement control is accomplished by a taxiway lighting/marking guidance system followed by apron lighting and marking guidance system with intermediate holding position markings/lights and stop-bars.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Markings and lighting installed in accordance with ICAO Annex 14. RWY guard lights are installed.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Training sessions and meetings are done in accordance with SMS Committees (apron, runway and emergency).

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? Yes. Reporting procedures were set up jointly with other parties active in this process.

6. BIRD AND WILDLIFE CONTROL

6.1 What is 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 marshallers 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 apridges.

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 multiple agencies in July 2014.

6.2 Are you about to change any of your aircraft’s methods? No.

6.3 Do you currently have equipment or other products on order? If so, please provide details: Not applicable.

6.4 Do you have any winter services equipment that you would like to sell? Not applicable.

6.5 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.

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 CCR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x6); capacities (light and type); year of manufacture:

- 7.2 Future developments – are there plans to purchase or dispose of any equipment?

7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

7.4 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No. Madrid Airport doesn’t have a training facility.

8. PART 2: WINTER SERVICES QUESTIONNAIRE

15. FRICITION TESTING

15.1 What model(s) of friction tester do you use? The friction test was done by TRADETARGET in May 2014 and for determining the coefficient of friction are performed continuously at an average speed of 65km/h and 95km/h, at night time, with dry weather, and using the equipment GRIPTESTER.

15.2 Have you any comments on the reliability of friction indexes? In the overall results of the evaluation of friction coefficient we have that some days 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? No. The analysis by sections in November 2013 the analysis by sections does not point to the need for intervention.

16.3 Are you currently have equipment or other products on order? No.

16.4 Do you have any winter services equipment that you would like to sell? Not applicable.

16.5 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.

16.6 Have the reporting procedures for runway safety incidents been set up jointly with other

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parts 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
6.1 Do your staff attend recognised bird control training courses? The wildlife 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 (siren); Water cannons to our 14 x 4 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 annual risk assessment; Risk Study Management is conducted and evaluated to define new mitigation measures in order to reduce the birdstrike risk in the airport activities. Moreover, since 2011, a Birdlife Committee was implemented in order to share and analyze 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? Occasionally, we have detected the existence of wild boars near the airport, outside the being addressed? Occasionally, we have detected the existence of wild boars near the airport, outside the

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x6); capacities (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) 380,00, Rosenbauer Panther 8x8: Water Tank (litres) 13.500,00, 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; 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; Quidos 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.
6.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, there is a purchase planned for six new units which will replace older units. Furthermore the Rosenbauer Panther 8x8 HRET that was accidentally destroyed last year during a maintenance action handled by the constructor (MAN) will be likely replaced by a similar new one free of charge for Aena.
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 15 November to 15 March.
8.2 Average snow depth: In the period from 01/01/1950 to 31/01/2009 there were 14 snowfalls with approximately depth of 10 cm in which the snows covered the surface during approximately 24h.
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. Marshalls: 11 airport employees per shift.

10. WINTER VEHICLES & EQUIPMENT
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, CIS 720, 4 units): Runway equipment: Runway sweeper with truck Mercedes ACTROS 2011 with snow equipment; Vörsenaen, Vörsenaen, RS400 MKII, 9 units; snow blower, Rolla, Zaugo Modelo 1500, 2 units; liquid spreader, MAN, Boschung 15 M 62037, 3 units. Apron equipment: Mini loader, Bobcat, Model S130, 10 units; loader, Volvo, L180, 6 units; truck, MAN, FE 40.414, HRET; Water Tank (litres) 33.360, 3 units. Airside road equipment: Snow truck, MAN, 6x6 TGS 33.360, 2 units. Landside road equipment: Mini loader, Bobcat, Model 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, 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 last season (no too much adverse weather conditions); Potassium Formate: 41,700 litres. Urea: 16,220 kg. 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 it protected from adverse atmospheric conditions of temperature and humidity. Airport has storage 150.000 kg, 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 when atmospherics 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 events, 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...
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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

14.1 Does the airport directly provide aircraft anti/  
de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: No, there is one deicing handler (IBERIA). 18 vehicles in total manufactured by JBT: TM 1800 (1 ud), LM 2000 (4 uds), Tempest with enclosed cab and airflow (12 uds), Tempest with open cab (1 ud). In 2015, it is possible, that a new deicing handler will operate.  
14.2. Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Dedicated de-icing areas.

15. FRICTION TESTING

15.1. What model(s) of friction tester do you use? Mu/  
Meter Mk6. 2 Saab 9-5 vehicles with Nonsemer 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 was totally implemented on 17 July 2014.  
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**

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.  
2.2 Landings aids for each RWY (e.g. CAT II): Cat 1.

3. SAFETY MANAGEMENT SYSTEMS

Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Yes – concluded a study in 2014.  
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer):  
Acoustic bird dispersal sound systems from Acoustic Systems from Scarecrow Bio-Acoustic Systems (UK), including a GPS based system (Ultima) from the same supplier and two handheld devices.  
6.4 Do you carry out a bird strike risk assessment? Yes – concluded a study in 2014.  
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 for each inspection is obligatory.  
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: Three Rosenbauer Panther; 6x6; (FL 33,600), water capacity 12,000l, foam capacity 1,500l; dry powder 1,250l; 2000; One Rosenbauer RIV; water capacity 2500l, foam capacity 300l, dry powder 250lgs; 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? Full Training Grounds for ARFF. Training grounds used primarily for internal training but also provide opportunity to train third parties.

**MUNICH**

1. AIRPORT NAME: Flughafen München

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):  
LDA: 4,000m; TORA: 4,000m; DDA: 4,000m;  
Runway 08L/ 26R: 4,000x60m; RWY 08R/26L: 4,000x60m; TORA: 4,000m;  
Runway 23-05: 4,000x60m; LDA: 4,000m;  
Runway 31: 4,000x60m.

2.2 Landings aids for each RWY (e.g. CAT II): Cat I.
Manager has been appointed and nominated to CAA in accordance with national air transport legislation. The Munich Safety Management System has implemented the following Safety Committees: Emergency, Ramp, Runway and Snow Committees. It includes also an Occurrence Reporting System, Incident Investigation and Hazard Identification. The permanent development of the SMS is subject to continuous oversight by Civil Aviation Authority. No reason to induce changes by SMS, recently.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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

a) Co-ordination of multiple agencies using airport and airside works will be guarded by airport manport with continuous radio contact to ATC and Airport Operations. Runway and taxiway (34 vehicles): 22x airblast loaders, 30x truck for snow transport, max. 8x little truck with snow ploughs, 2x airport-sprayer (40m), 4x multi-de-icer, 1x little truck with snow plough, sprayer and spreader, 1x Head of Operations vehicle (Honda). Snow transport (45 vehicles): 7x snow loaders, 30x truck for snow transport, max. loading capacity 506,880 gallons (all trucks), 2x snow cats, 5x wheel loader, 1x Head of Operations vehicle (Honda). Public area (23 vehicles): 7x truck for roads, 8x little truck for sidewalks, 4x transport vehicles for employees, 2x truck for snow transport, 1x wheel loader, 1x head of operations vehicle (Skoda), total: 196 winter service vehicles, overall.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow readiness:

8.1 What is the designated period of winter readiness?

8.2 What is the designated period of winter readiness?

11.2 State the vehicles, formations and general entry holes through the use of screens and boards; cover areas of open water with wire or netting.

6.4 Do you carry out a bird strike risk assessment?

Bird control is carried out by specially trained personnel/operations staff training programmes. FOD awareness campaigns within framework of SMS.

b) Inspection by airline, airport, and airplane handling personnel: Stand pre-use FOD inspection is part of handling agency obligation. Daily routine Inspections by Airport Operations Staff every 4 hours scheduled/H24.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Continuous Sweeping Program, dedicated FOD Bins on each stand, FOD inspections by airport operations. The movement areas are serviced daily at regular intervals and when required by surface sweeping vehicles.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Within Safety Management System, Ramp Safety Committee and Airport Ramp Supervision during daily operation.

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

5. RUNWAY INCISION PREVENTION

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

Multilateration, Visual Surveillance, Radio Instructions, Surface Movement Guidance System with stop-bars and segmented taxiway centreline lighting, high intensity monitoring of winter services vehicles, supervision of contractors.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards?

Implementation of multilateration. 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, ASMR, Multilateration.

5.4 Is any FOD awareness use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: Contrasting paint of CAT 1 Holding Point Marking (black bordering) with increased character size, Runway Guard Lights.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport?

Establishment of a Runway & Movement Control Safety Committee within framework of SMS. Any vehicular traffic operating on the manoeuvring area requires dedicated driver’s license and must obtain prior approval/legitimation by Airport Duty Manager before requesting ATC clearance. Any subcontracted

6. BIRD AND WILDLIFE CONTROL

6.1 Are your bird control staff working on the airfield continuously, hourly, less than hourly?

Bird control is carried out by specially trained staff. The time they spend on the airfield is dependent on the actual wildlife situation. Ornithological surveys are also done by wildlife experts.

6.2 Are your bird control staff working on the airfield control training courses?

The staff is trained regularly by own and external wildlife specialists (e.g. German Birdstrike Committee).

6.3 Do your staff log all their bird control activities with air traffic control. The time they spend on the airfield is depending on the actual wildlife situation. Ornithological surveys are also done by wildlife experts.

6.4 Do you carry out a bird strike risk assessment?

Bird strike assessments are regularly done with air traffic control. The time they spend on the airfield is depending on the actual wildlife situation. Ornithological surveys are also done by wildlife experts.

6.5 Do you perform any bird strike risk assessments to other airports? (by Airlink Airport, Munich): With considerable effort on creating and maintaining biotopes so as not to attract to the airport and its surrounding area the kinds of birds that pose a threat to aviation. Munich Airport works closely with organisations on the question of bird strike prevention, in particular with airline companies, German air traffic control, regional and national government agencies, and the German Bird Strike Committee (DAVVL). Elimination of attractive trees and bushes within the runway system; reduce available nesting and roosting sites by modifying buildings to limit ledge space; close entry holes through the use of screens and boards; cover areas of open water with wire or netting.

6.6 Do your staff attend recognised bird control training courses?

The staff is trained regularly by own and external wildlife specialists (e.g. German Birdstrike Committee).

6.7 Do your staff log all their bird control activities to continuous oversight by Civil Aviation Authority. No reason to induce changes by SMS, recently.

6.8 Do your staff log all their bird control activities with air traffic control. The time they spend on the airfield is depending on the actual wildlife situation. Ornithological surveys are also done by wildlife experts.

6.9 How are these issues being addressed?

Bird control activities are recorded in a daily log.

6.10 Do you perform any bird strike risk assessments to other airports? (by Airlink Airport, Munich): With considerable effort on creating and maintaining biotopes so as not to attract to the airport and its surrounding area the kinds of birds that pose a threat to aviation. Munich Airport works closely with organisations on the question of bird strike prevention, in particular with airline companies, German air traffic control, regional and national government agencies, and the German Bird Strike Committee (DAVVL). Elimination of attractive trees and bushes within the runway system; reduce available nesting and roosting sites by modifying buildings to limit ledge space; close entry holes through the use of screens and boards; cover areas of open water with wire or netting.

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 Command Vehicles (KDW) 4x4 Audi, BMW; 3x Command Vehicles (ELW) 1x 4x4 Mercedes Benz; 1x Command Vehicle (ELW 2) MAN; 2x Airport Fire-Fighting Vehicles (FLF 112/135), MAN-Saval-Kronburg; 8x, 13,500 ltr. water, 1,600 ltr. AFFF foam (Replacement); 2x Airport Fire-Fighting Vehicle (TrolFLF/Panther/AT), MAN 8x8, 12,500 ltr. water, 1,500 ltr. foam; 4x Airport Fire-Fighting Vehicles (FLF/MAN-Ziegler with articulated snorkelle, 8x, 12,500 ltr. water, 1,500 ltr. foam; 3x Airport Fire-Fighting Vehicle (FLF/MAN-Ziegler) 8x8, 12,500 ltr. water, 1,500 ltr. foam; 1x Mercedes Benz 4x4 (Supply-Truck); 5x Rescue Fire-Fighting Vehicle (HLF), MAN 4x4, 2,500 ltr. water, 300 ltr. Foam; 2x Aerial Ladder and Platform (DKU 23-12/ GL C) 4x4 MAN; 1x Rescue Unit (RW2), MAN 4x4; 3x Interchangeable-body truck (WLF), MAN 6x6.

7.2 Future developments – are there plans to purchase or dispose of any equipment?

1x Aerial Ladder and Platform (DKL 23-12/GL C) 4x4 MAN; 1x Command Vehicle (ELW 2) Mercedes Benz; 1x Command Vehicles (ELW 1) 4x4 Mercedes Benz. If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No, not to other airports available at this moment.

PART 2: WINTER SERVICES

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness?

15 October-15 April.

8.2 What is the designated period of winter readiness?

8.3 Average snow depth:

42.5 cm.

8.4 Maximum snow in 24 hours:

52 cm.

8.5 Annual number of days of de-icing activities:

67 days.

9. WINTER ORGANISATION

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

90 airport employees, 22 sub-contracted companies with a total of 450 employees.

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJS 720, 4 units): Runway and taxiway (34 vehicles): 22x airblast sweepers, 9x Schmidt TJS 630, 1x Vanmms SR 3600, 7x Overassen RS 400, 5x Overassen RS 200, 6x trucks with snow ploughs, 2x airport-sprayer (40m), 8x mobile de-icer (Knipper Weiss), 1x spreader for granulate (volume 2,640 gallons) (Fendt 927), 1x Head of Operations vehicle (Toyota). Aprons and other surfaces (94 vehicles): 88 tractors with snow plough and sweeper or with snow plough, sweeper and sprayer, 4x multi-de-icer, 1x little truck with snow plough, sprayer and spreader, 1x Head of Operations vehicle (Honda). Snow transport (45 vehicles): 7x snow loaders, 30x truck for snow transport, max. loading capacity 506,880 gallons (all trucks), 2x snow cats, 5x wheel loader, 1x Head of Operations vehicle (Honda). Public area (23 vehicles): 7x truck for roads, 8x little truck for sidewalks, 4x transport vehicles for employees, 2x truck for snow transport, 1x wheel loader, 1x head of operations vehicle (Skoda), total: 196 winter service vehicles, overall.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1. Runways and taxiways; 2. Aprons and all areas where service/gound handling vehicles must have access to. 11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Three groups are in progress simultaneously – one
1. AIRPORT NAME:
Ostrava Modlin 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: 04/22: ICAO CAT II. RWY dimensions, 3,500x63m, 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, 5x CAT C, 2x CAT D, or ALTERNATIVE STANDS, 1x CAT E, 6x CAT B, 2x CAT A; APN SOUTH, 3x CAT C, 2x CAT E (or 1x CAT F); APN GA CAT A or CAT B, APN ELMONTES CAT A or CAT B, APN LETS FLY, CAT A or CAT B, Other APN and RAMP: Hangar APN NORTH 1, SERVICE APN NORTH 2, 2.2 Landing aids for each RWY (e.g. CAT II): RWY ICAO CAT II, ILS CAT II/IIIA READY

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 an independent SMS audit? Yes, SMS audits are done according to plan and monitored by CAA.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport’s programme to control FOD in terms of:
   a) Training: Training is defined by airport guidelines. Personnel are trained according to these guidelines.
   b) Inspection by airline, airport, and airplane handling agency personnel: Inspections are done 4 times a day by an airport staff member.
   c) Maintenance use of sweeping, magnetic bars, runway lights, FOD containers etc.

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? Multilateration Surveillance System – PSD is undergoing certification for implementation of ICAO CAT IIIA operation.
5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASD-X, the Model X Airport Surface Detection Equipment): Multilateration Surveillance System – not certified yet.
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. RWY safety team holds meetings 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: reporting? Safety boxes are installed at airport. Non-punitive principles are applied.

6. BIRD AND WILDLIFE CONTROL
6. Please detail your habitat management policy and how it reduces the attraction of the airfield to birds: Bird and wildlife control is provided by external provider. Control is done continuously, specialist guard in the vicinity of RWY. The provider use trained birds, firearms, dogs.

7. SAFETY AND SERVICE FOR CATIIIA UPGRADE.

8. EXPERIENCE WITH CHEMICALS
8.1 State which pavement de-icers you use, along with the quantities used last season. Comment on the effectiveness of chemicals at low temperatures and achieved holdover times etc: Potassium formate: Runway 158t, taxiway 404t, apron 493t, Sodiumformate: Runway 42t. The effectiveness of formic acid at low temperatures is good. The holdover time depends on weather conditions.
8.2 Comment on storage capabilities of the chemicals that you use: The storage capability of the liquid de-icer is very good. If we store the solid de-icer for more than a year, it tends to “compact” and pack together, which makes using it slightly more difficult.
8.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Normally we use 20-25%aq de-icer. When necessary, we use a mixture of half liquid (12.5g/sqm) and half solid. Solid de-icers are used to extend the hold-over time. When spreading solid de-icers, areas with increased jet blast are omitted.
8.4 Have you experienced any corrosion problems with de-icers? Yes, with potassium formate.
8.5 Have you employed any special means to economise on chemical use? Yes, we are constantly working to optimise our procedures and the use of chemicals.
8.6 Have you any other comments on experience with chemicals? We are constantly working to improve our winter service activities – this includes buying/leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications/informational material, etc. If so, please provide details: We are constantly working to improve our winter service activities – this includes buying/leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications/informational material, etc.
8.7 Have you experienced any other comments on experience with chemicals? If so, please provide details: We are constantly working to improve our winter service activities – this includes buying/leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications/informational material, etc.

9. EXPERIENCE WITH CHEMICALS
9.1 State which pavement de-icers you use, along with the quantities used last season. Comment on the effectiveness of chemicals at low temperatures and achieved holdover times etc: Potassium formate: Runway 158t, taxiway 404t, apron 493t, Sodiumformate: Runway 42t. The effectiveness of formic acid at low temperatures is good. The holdover time depends on weather conditions.
9.2 Comment on storage capabilities of the chemicals that you use: The storage capability of the liquid de-icer is very good. If we store the solid de-icer for more than a year, it tends to “compact” and pack together, which makes using it slightly more difficult.
9.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Normally we use 20-25%aq de-icer. When necessary, we use a mixture of half liquid (12.5g/sqm) and half solid. Solid de-icers are used to extend the hold-over time. When spreading solid de-icers, areas with increased jet blast are omitted.
9.4 Have you experienced any corrosion problems with de-icers? Yes, with potassium formate.
9.5 Have you employed any special means to economise on chemical use? Yes, we are constantly working to optimise our procedures and the use of chemicals.
9.6 Have you any other comments on experience with chemicals? We are constantly working to improve our winter service activities – this includes buying/leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications/informational material, etc. If so, please provide details: We are constantly working to improve our winter service activities – this includes buying/leasing new equipment when necessary, keeping abreast of the latest innovations via trade publications/informational material, etc.

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. APRN CENTRAL; 4. APRN SOUTH; NORTH; 5. Other surfaces.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Four plough trucks with jet brooms enter the RWY via APN CENTRAL and TWY C. The snow banks are pulled to the sides of RWY and then the snow cutter moves them out of the 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? 40 minutes takes clearing of RWY at full length and width.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc.: 1x MB UNIMOG, plough and sander-gritter; 1x MB RWY de-icer. Nitric acid amide (carbamide) is used for chemical treatment of pavements.
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.
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: 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).

PODGORICA

1. AIRPORT NAME: Podgorica Airport
2. MOVEMENT AND HANDLING 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: 2,500m x 45m. Strip dimensions: 2,620m x 300m. Runway designator: 18; TORA (m): 2,500; TODA (m): 2,500; ASDA (m): 2,500; LDA (m): 2,500. Runway designator: 18; TORA (m): 2,005; TODA (m): 2,005; ASDA (m): 2,005; take-off and landing distance with TWY B. Runway designator: 36; TORA (m): 2,500; TODA (m): 2,500; LDA (m): 2,500. Runway designator: 36; TORA (m): 2,007; TODA (m): 2,007; 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); RWY 36 – CAT I (ALPA ATA); RWY 18 – PAPI (BOTH); RWY 36 – 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? Currently in the process of SMS implementation.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport’s programme to control FOD in terms of:
a) Training: Through Safety Awareness Training Courses and regular refresher of knowledge, which must be completed by every employee working at airside. FOD prevention is part of the above-mentioned training course also. In addition, the adequate operational procedures are established for FOD control and removal.
b) Inspection by airline, airport, and airframe handling agency personnel: Staff of Podgorica Airport, as the handler, perform regular inspections over the manoeuvring surfaces and aprons at least two times per day and in the case of bad weather conditions more frequent checks are performed. Regular airlines audits control this issue also.
c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc). By using carpet, 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 subjects within airside zone.
4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments): Currently no special systems or software solutions applied, but through hand filed reports we do establish a good control.

5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground?
In accordance with the document ‘Agreement of Coordination’ between ATC Podgorica and airport operator, responsibility of monitoring manoeuvring surfaces and 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 on airport (ATC staff, military staff, refuelling company staff, catering supplier etc.) through airport’s training centre. Safety alerts booklets have also been introduced for all present staff at the airport and 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 occurrences 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, in addition an open reporting culture system have been encouraged and promoted.

6. BIRD AND WILDLIFE CONTROL

6.1 Do your staff attend recognised bird control training courses? No recognised courses attended.

6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Staff work continuously as a part of the Rescue and Fire Fighting team, through regular daily inspections of manoeuvring surfaces and also through reporting events from the side 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 on vehicles and shotguns.

6.4 Do you carry out a bird strike risk assessment? No but we analyse the bird strike trends in accordance with the recorded occurrences.

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 scatter 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/tire and type); year of manufacture: 2x Rosenbauer; MAN; 6x6; 12,000l water; 1,500l foam; 2004, Amertek; 4x4; 4,000l of 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 Simulator, is this available to other airports for training purposes? We do not possess a Fire Training Simulator, but we do practical exercises/drills.

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? From 1 November-31 March in accordance with instruction QP3.37 And QP3.74.

8.2 Average annual days of snow: 2 days a year (last 3 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 sub-contracted winter services personnel are available per shift? About 20 employed persons per shift, but that number can be increased depending on the intensity of the 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, CJ5 720, 24 units): According to subcontracted equipment list: 2x truck with snowplough, 3x urea spreader, 1x sweeper and one 1x snow blower, Rolba Viking, and 1x truck, Unimog, which can be equipped with snowplough or snow blower as well.

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: Priorities for cleaning movement areas are the following: RWY; Taxiways N & B; Apron (one stand minimum); GA apron (one stand minimum); Taxiways J & 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 centreline, and then snowploughs operate from the centreline to the edge of the runway. After that, snow blowers throw snow out of runway then sweeper clears the runway surface and urea spreaders sprinkle tarmac.

11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? 3-4 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, but last year there was no snow precipitation, and low temperatures as well.

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 ice melting use? No.

12.6 Do you have any other comments on experience with chemicals? No.

12.7 Do you use other chemicals or sand on operational areas? No.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: None.

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

13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: None.

14. AIRCRAFT DE-ICING

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

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? Friction tester (Airport Surface Friction Tester – ASFT), type Continuous Friction Measuring Equipment – CFME.

15.2 Have you any comments on the reliability of friction indexes? None.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? Currently no.

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

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

16.4 Do you have any winter services equipment that you would like to sell? No.
42 AIRSIDE SAFETY SURVEY 2015

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, others; RWY 06/24: Dimensions 3715 x 45 m; PCN 62/R/B/X/T; shoulders 2 x 7.5 m; TORA, ASDA, LDA – 3715 m; TODA – 4015 m, RWY 12/30: Dimensions 3250 x 45 m; PCN 82/R/B/X/T; shoulders 2 x 7.5 m; TORA, ASDA, LDA – 3250 m; TODA for RWY 12 – 3400 m; TODA for RWY 30 – 3550 m. RWY 04/22: Dimensions 2120 x 60 m; PCN 45/F/B/X/T (RWY is closed for take-offs and landings. Taxing, parking and handling of aircraft approved). Total Apron Area: 635,000sqm. Total Pavement Area: 2,200,000sqm.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 06: ILS CAT I, PAPI, ALS length 480 m; RWY 24: ILS CAT II/III, PAPI, ALS length 900 m; RWY 12: ILS, PAPI, SALS length 420 m; RWY 30: ILS; PAPI, ALS length 900 m.

3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Prague Airport has SMS developed in compliance with ICAO Doc. 9859. Continuous improvement of SMS methods, statistics, cooperation with ATC, CAA and handlers. Improvements in communication tools http://www.prg.aero/safety.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training; General FOD training is the part of periodical Security and Safety training, which is mandatory for all personnel with permission to enter the SRA zone. b) Inspection by airline, airport, and airplane handling agency personnel: Airport: FOD check of whole airport is one part of serviceability check provided by Airfield Operations Control at least every four hours at the Movement area and every two hours at the Apron. Handling: According the Airport rules, the Handling agent is responsible for FOD check at the stand before the arrival and after departure of aircraft. c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): There are two vacuum cleaners dedicated for sweeping of the Apron. These units are also available to all stands. d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination of FOD prevention is a business of Apron Safety Team. The representative of all Handling, Cargo and Refueling companies providing services at the airport (and their representatives) of the main airlines and AOC are the members of this team.

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

5. RUNWAY INCURSION PREVENTION

5.1 What is the principle/method of monitoring vehicle and aircraft movements on the ground? A-SMGCS at the Movement area (all vehicles are equipped with Mode S responder) and CCTV at the Apron. 5.2 Are any design or engineering changes being undertaken or required to eliminate perceived hazards? No

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDX-E, the Model X Airport Surface Detection Equipment); A-SMGCS level 2. 5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: RWY: All CAT I holding points are equipped with Guard Lights and large inscriptions "RWY AHEAD" on the red background behind all the last RWY holding points marking. All CAT II/III holding points are equipped with Guard Lights and Stop bars. RWY 06/24 has marking with black borders to highlight the markings on the concrete surface. TWY and APRON: TWY centre line marking has been widened with an additional information sign would be normally installed and where is impractical to install, information marking has been painted on TWY centre line, prior to TWY intersection. TWYs with concrete surface have markings with black borders. The lighted signs “Low Visibility Operations” on the apron area. 5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? All drivers permitted to drive a vehicle on the movement area have to have a special training providing by ATC training center and they have to pass an examination. After that, they get a special license valid for three years. 5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active at the Movement area (all vehicles are equipped with A-SMGCS)? No.

5.7 With the implementation of A-SMGCS, have you developed SMS audits? Prague Airport has SMS developed and located it to new subsidiary fire station.

5.8 Have you developed any SMS related to the runway environment? No

5.9 Have you integrated your runway SMS with other SMS such as the FOD Management SMS? No

5.10 Do you have any special systems to improve the safety of the movement area? Yes

5.11 What has been the impact of these systems on the safety of the movement area? Significant improvement of SMS methods, statistics, cooperation with ATC, CAA and handlers. Improvements in communication tools.

5.12 Are you reviewing and assessing the SMS? No, but we analyse the bird strike trends on monthly basis.

5.13 Do you review and assess the SMS for other purposes? Yes, for example, to manage in success in dealing with the problem, and to use in defence in case of lawsuits? Yes

5.14 Do your airport have any systems to deal with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

6. BIRD AND WILDLIFE CONTROL

6.1 What measures does your airport use to control birds and wildlife? The main method of bird control is falconry. 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.

6.2 Do you carry out a bird strike risk assessment? No, but we analyse the bird strike trends on monthly basis.

6.3 What systems have you developed for FOD control? No

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x8); capacities (kg/ litre and type); year of manufacture: Volkswagen Transporter 4x4 (UHPS) – 1x (from 2003, water 200 l, foam 20 l); PANTHER II Rosenbauer HRET 6x8 – 1x (from 2009, water 12 500 l, foam 1 500 l, powder 250 kg); PANTHER II Rosenbauer 6x6 – 1x (from 2009, water 12 500 l, foam 1 500 l, powder 250 kg); PANTHER Rosenbauer 6x6 – 2x (from 2003, 2004, water 12 000 l, foam 1 500 l, powder 250 kg); Scania 6x6 – 2x (from 2014, water 8 000 l, foam 1 000 l); Scania 4x4 – 1x (from 2011, water 2 500 l, foam 200 l); Scania Bronco Shift MX – 1x (from 2009, water 8 500 l, foam 200 l); Scania Bronco Shift MX – 2x (from 2016, water 8 500 l, foam 200 l). Scania bronco shift MX – 1x (from 2009, water 8 500 l, foam 200 l); Scania bronco shift MX – 2x (from 2016, water 8 500 l, foam 200 l).

7.2 Do you have a specific team (or systems) to deal with wildlife control? No

7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes, Prague Airport has a common reporting system for Runway Safety Incidents. The system (web reporting) is able to 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 ‘non-punitive’ principles such as ‘no-penalty’ reporting? Yes.

8. WINTER ORGANISATION

8.1 What is the designated period of winter readiness? 1 November to 30 April.

8.2 Average annual days of snow: 28 days (based on statistics of last 14 years), 11 days (last winter 2013/2014).

8.3 Average snow depth: 84cm (based on statistics of last 14 years), 79cm (last winter 2013/2014).

8.4 Maximum snow in 24 hours: N/A

8.5 Annual number of days of de-icing activities: N/A

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are normally available per shift? Total winter services personnel available per shift: Operational dispatcher – 3; Operational coordinators (Foreman) – 1; Drivers – 16 internal + 12 external; Mechanic – 2.

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, CJ2, 720, 4 units): Compact jet sweeper Boschung Jetbonn Runway, 5 units; Compact jet sweeper Boschung Jetbonn Runway, 5 units; Compact jet sweeper Boschung Jetbonn Runway, 5 units; Reindeer 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.

10.2 Do you carry out a bird strike risk assessment? No, but we analyse the bird strike trends on monthly basis.

10.3 Do your airport log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes

10.4 Does your airport have any systems to deal with other wildlife (deer, for example) and, if so, how are these issues being addressed? No

11. GENERAL AIRSIDE SAFETY
High speed snowblower, Kahlbacher, 2 units; Snowblower Schmidt 5000, 1 unit; Snowblower Rolba 4000, 1 unit; Snowblower Schmidt 1500, 2 units; Airport Sprayer, Schmidt, 1 unit; Airport Sprayer, EPOKE, 1 unit; Airport twin disc sprayer Schmidt, 1 unit; Airport disc sprayer Kobi, 2 units; Tractor with “Yvolug”, 4 units; Unimog 300 with plough and spreader, 1 unit; Container spreader Mercedes, 1 unit; Small plough and spreader Magna, 1 unit; Small sweeper Bucher CityCat 2020, 2 units; Small sweeper Bucher CityCat 5000, 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, taxiways, aprons) etc: depending on traffic.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Airlside working group is responsible for cleaning of whole manoeuvring area: RWG - Runway Working Group; AWG - Apron Working Group; GWG - Gate Working Group. Landside working group is responsible for cleaning of whole landside: Snow co-ordinator co-ordinates the action with TWR Controller. RWY, which is being cleaned, is closed for aircraft operations by SNOWTAM. The complete RWG moves to RWY threshold and starts cleaning of the RWY and parallel TWY. Apron: Snow is pushed from the terminal building across the APRON to the grass if it is possible or it is loaded and removed. Surface De-icing: Acetates are used for de-icing on runways, taxiways and aprons. Urea can be used on landside only.

11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? 30 minutes.

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Snowblower Schmidt 5000, 1 unit; Snowblower Rolba 4000, 1 unit; Snowblower Schmidt 1500, 2 units; Airport Sprayer, Schmidt, 1 unit; Airport Sprayer, EPOKE, 1 unit; Airport twin disc sprayer Schmidt, 1 unit; Airport disc sprayer Kobi, 2 units; Tractor with “Yvolug”, 4 units; Unimog 300 with plough and spreader, 1 unit; Container spreader Mercedes, 1 unit; Small plough and spreader Magna, 1 unit; Small sweeper Bucher CityCat 2020, 2 units; Small sweeper Bucher CityCat 5000, 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.

12.2 Do you have any other comments on experience with chemicals?

12.3 Do you use other chemicals or sand on operational areas? Application of the sand on operational areas is prohibited by CAA and urea is prohibited due to environmental reason.

13. ICE WARNING SYSTEMS

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

14. AIRCRAFT DE-ICING

14.1 Do you provide aircraft anti/de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: De-icing and anti-icing is provided by 3 companies (ground handlers): Czech Airlines Handling – 5 de-icing vehicles; Menzies Aviation – 2 de-icing vehicles; Czech Ground Handling – 2 de-icing vehicles.

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

14.3 Is glycol recovered? If so, please state methods: Not yet.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? SARSYS Friction Tester based on SAAB 9-5. 2 units.

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

16. FUTURE DEVELOPMENTS

16.1. Are you about to change any of your airport’s methods? No

16.2. Do you plan to purchase new equipment or vehicles? If so, please provide details: Yes, we have an action plan for replacement of existing units and increasing capacity and capability of winter services for the future.

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

16.4. Do you have any winter services equipment that you would like to sell? Not yet.

PULA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Pula Airport

2. MOVEMENT AND MANOEUVRING AREA DATA

2.1 Please list the identities of primary operational facilities and the airport de-icer (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other: RWY: 2946x454m, TORA: 2946m, TWY WIDTH: 23m SHOULDER: NONE RAMP: approx. 64.200 square meters.

2.2 Landing aids for each RWY (e.g. CAT II): RWY09 - CAT I Simple Approach Lighting System RWY27 - CAT I Simple Approach Lighting System.

3. SAFETY MANAGEMENT SYSTEMS

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

3.2 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 regular safety trainings are being conducted.

b) Inspection by airline, airport, and airplane handling agency personnel: Airport employees are conducting inspections of FOD on operating areas several times a day and FOD parking stand check is done prior to A/C parking. Airport procedures for controlling FOD are presented to the airlines and handling agencies during audits.

c) Maintenance (use of sweeping, magnetic bars, rumpile strips, FOD containers etc): We use FOD containers and sweeping methods.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Coordination with ATC, there is no other relevant authority.

4.2 General: Are there any special systems or software solutions you employ for FOD control? (Please specify product name and add any comments.)

Our employees use a special Pula Airport software ("FOD") in order to log all daily inspections of operating areas in the terms of FOD’s control.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Monitoring is ensured through DCS system, video surveillance (video records) and personnel observations.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No, there are not.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment) Above mentioned devices currently are not employed.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies. Use of these technologies can be very useful and successful, especially on airports with one runway and a few number of taxiways. We are continuously renovating all markings (paint signs) and designing new. This year we have painted red mandatory markings on holding points.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? Airport staff are participating safety training/spot surveys constantly and all other people who are performing periodical work on operating area must also attend safety 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 ‘no-punitive’ principles such as ‘no-penalty’ reporting? The reporting procedures for safety incidents has been already set up jointly with other parties active in these processes and ‘no-penalty’ principles are ensured.

6. BIRD AND WILDLIFE CONTROL

6.1 Please detail your habitat management policy and how it reduces the attraction of the airfield to birds. The attraction of birds to the airfield is reduced by careful planning of herb cutter on the airfield and on surrounding areas.

6.2 Do you have a recognized bird control training courses? Yes, they did.

6.2 Are your bird control staff working on the airfield continuously, hour by hour, less than
hourly? Yes, continuously in shifts.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer) Pula Airport employees use pyrotechnics, alarm shotguns and dogs.

6.4 Do you carry out a bird strike risk assessment? Yes, it has been carried out.

6.5 Do you carry out any other bird control activities? (to manage success in dealing with the problem, and to use in defence in case of lawsuits) They log all their bird control activities through our bird control programme software which indicates every single bird control prevention activity (for example: time and place of using alarm shotguns and dogs).

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No, we do not have problems with other wildlife.

7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kgitre and type); year of manufacture. Pula Airport vehicles: 1. PANTHER I, 6x6, Rosenbauer, 2005, Water tank: 2500l; 2. PANTHER II, 6x6, Rosenbauer, 2007. Water tank: 12000l, Foam tank: 1500l, Powder tank: 250kg; 3. PANTHER III, 6x6, Rosenbauer, 2005, Water tank: 12000l, Foam tank: 1500l; 4. FAUN, 6x6, Rosenbauer, 1984 Water tank: 9000l, Foam tank: 1000l; 5. MAZDA, 4x4, B2500 TD, Mazda, 2004.

7.2 Future developments – are there plans to purchase or dispose of any equipment? The new RFFS hangar has been constructed and it is in function.

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 to 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: Approx. 15cm

8.5 Annual number of days of am tank: 150

8.6 Water tank: 1,250kg in a sub-contracted storage.

8.7 Future developments – are there plans to purchase or dispose of any equipment? The new RFFS hangar has been constructed and it is in function.

8.8 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.

9. ORGANISATION

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

10. WINTER EQUIPMENT INVENTORY

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

11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility: 1. Runway, 2. Taxiways C, D, 3. Apron and then A and others; 3. Apron.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance. The clearing starts after 15-20mm of wet snow or 50mm of dry snow. It is performed with our and sub-contracted sweepers. After sweeping, the de-icers spreader, sprinkles the de-icer chemicals.

11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? It is hard to estimate because there was no often moderate snow on Pula Airport in the last 3 or 4 years. It happened only once and the “black top” was achieved during the night.

12. EXPERIENCE WITH CHEMICALS

12.1 Please state order of priority of the chemicals which you use. We have 1,250 kg of “UREA” in our storage and more than 1,250kg in a sub-contracted storage.

12.2 Comment on your experience with solid de-icers, for example mixing ratios with liquids, blow-away from vehicle etc. Solid de-icer is a solid de-icer.

12.3 Have you experienced any corrosion problems with de-icers? No, until now we did not.

12.4 Have you employed any special means to economise on chemical use? No, we did not.

12.5 Have you any other comments on experience with chemicals? No, I do not.

12.6 Do you use other chemicals or sand on operational areas? No, we do not.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems. We do not have ice warning system because meteorological conditions at Pula Airport are very good. At this moment, monitoring it is performed by personnel observations.

13.2 Have you plans to purchase further ice warning systems and if so which model(s)? At this moment, we do not have plans to purchase an ice warning system due to mentioned meteorological conditions.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/de-icing operations? If so, please state vehicle, other facility manufacturer and number of units. Anti-de-icing truck, Man-Sroder, 18.232 F-Automatic, 1 unit.

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

14.3 Is glycol recovered? If so, please state methods. No, it is not.

15. FRICTION TESTING

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

15.2 Have you any comments on the reliability of friction indexes? No, I do not.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? No, at this moment we will not change any of airport methods.

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details. At this moment, we do not have plans to purchase new equipment or vehicles.

16.3 Do you currently have equipment or other products on order? No.

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.

RIJEKA

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Rijeka Airport

2. MOVEMENT AREA 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 – 2500m, TORA-2500m, RWY width 45m (without shoulders), APRON – 100x300m.

2.2 Landing aids for each RWY (e.g. CAT II): RWY 14 (CAT I) ILS, Approach lights, PML, VOR/DME, RWY THR, EDGE and END lights, wind cone RWY 32 PAP, VOR/DME, RWY THR, END and EDGE lights, wind cone.

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: Part of licencing for each licence.

b) Inspection by airline, airport, and airline handling agency personnel: Programme is described in our GPS manual.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Sweeping, FOD containers.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination is described in our GPS manual.

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary means of FOD control and aircraft movements on the ground? ATC monitors the whole movements on the ground, everybody must report intended movements to ATC.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? No.

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

6.1 Detail your habitat management policy and how it reduces the attraction of the airfield to birds: By noise

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

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Gunn which produces noise only, and sirens.

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? Yes

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axis (AX4, AX6); capacities (kg/fleet type); year of manufacture: Stated in AIP
7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes, new RFF 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 roadreadiness? No designated period
8.2 Average annual days of snow: 2
8.3 Average snow depth: A few cm
8.4 Maximum snow in 24 hours: A few cm
8.5 Manual number of de-icing activities: 0

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 0
9.2 WINTER EQUIPMENT INVENTORY
9.1 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, CBS 720, 4 units): 0

10. PROCEDURES AND METHODS
10.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: In case of snow airport is closed.
10.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: In case of snow airport is closed.
10.3 Comment on your experience with chemicals that you use: N/A
10.4 Comment on storage capabilities of the chemicals that you use: N/A
10.5 Have you experienced any corrosion problems with de-icers? N/A
10.6 Do you have any other comments on experience with chemicals? N/A

11. EXPERIENCE WITH CHEMICALS
11.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: N/A
11.2 Comment on storage capabilities of the chemicals that you use: N/A
11.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: N/A
11.4 Have you experienced any corrosion problems with de-icers? N/A
11.5 Have you employed any special means to economise on chemical use? N/A
11.6 Do you have any other comments on experience with chemicals? N/A
11.7 Do you use other chemicals or sand on operational areas? N/A

12. ICE WARNING SYSTEMS
12.1 State model and number of ice warning systems: N/A
12.2 Comment: Storage capabilities of the ice warning systems: N/A

13. FRICION TESTING
13.1 What model(s) of friction tester do you use? SFT Saab 9-5
13.2 Have you any comments on the reliability of friction indexes? No

16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your equipment? Yes
16.2 Do you plan to purchase new equipment or vehicles? Yes, one RFF vehicle
16.3 Do you currently have equipment or other products on order? If so, please provide details: N/A
16.4 Do you have any winter services equipment that you would like to sell? No

ROME CIAMPINO
PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME:
Romai 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 (AIP): Runway 15; RWY length: 2,324m; RWY width: 300m; TORA: 2,204m; TDA: 2,429m; ASDA: 2,204m; LDA: 2,204m. Runway 33: RWY length: 2,324m; RWY width: 300m; TORA: 2,204m; TDA: 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? ADR has a SMS in place since 2007 and there is a continuous improvement into 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 week (reported). c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Daily sweeping, and every time requested by safety officers. d) Coordination of multiple agencies using airport (airlines, handling agents etc): Made by Aeroporti di Roma by means of first training to personnel and safety procedures on airstreis 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 airfield. The aircraft movements are controlled by tower on the manoeuvring area, while on the apron tower only gives instructions. 5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Equipment and vehicles have been re-designed to avoid conflicts with operations. Passengers walking path is protected by physical barrier and canopy. 5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMSA); or ASDE-X, the Model X Airport Surface Detection Equipment - AMSGCS.

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 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 having access to the manoeuvring area have representatives sitting in the Local Runway Safety Team. Recommendation coming 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 the airport Safety Team.

6. BIRD AND WILDLIFE CONTROL
6.1 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 in airside. Do your staff attend recognised bird control training courses? Yes they do. Are you bird control staff working on the airfield continuously, hourly, less than hourly? From dawn to dusk there is trained personnel to control and scare away birds.
6.2 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): The systems we use are: Lrad (loud speakers on a car), distress calls, shot gun.
6.3 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.

PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter roadreadiness? From December 1st to April 30th
8.2 Average annual days of snow: Once every 5 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: 0

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 0
9.2 WINTER EQUIPMENT INVENTORY
9.1 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, CBS 720, 4 units): 0
9.2 Comment on your experiences of the warning systems and if so, which model(s)? N/A
9.3 Comment on your experience with chemicals that you use: N/A
9.4 Comment on storage capabilities of the chemicals that you use: N/A
9.5 Have you experienced any corrosion problems with de-icers? N/A
9.6 Do you have any other comments on experience with chemicals? N/A
9.7 Do you use other chemicals or sand on operational areas? N/A

11.1 Please state here order of priority of snow clearing of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: In case of snow airport is closed.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: In case of snow airport is closed.
11.3 Comment on your experience with chemicals that you use: N/A
11.4 Comment on storage capabilities of the chemicals that you use: N/A
11.5 Have you experienced any corrosion problems with de-icers? N/A
11.6 Do you have any other comments on experience with chemicals? N/A
11.7 Do you use other chemicals or sand on operational areas? N/A

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: N/A
13.2 Comment: Storage capabilities of the ice warning systems: N/A

16. FUTURE DEVELOPMENTS
16.1 Are you about to change any of your equipment? Yes
16.2 Do you plan to purchase new equipment or vehicles? Yes, one RFF vehicle
16.3 Do you currently have equipment or other products on order? If so, please provide details: N/A
16.4 Do you have any winter services equipment that you would like to sell? No

13.1 Please state here order of priority of snow clearing of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: Runway first, then taxiways to the apron,
commercial aviation apron, general aviation apron.

11.2 State the vehicles, formations and general methods 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 80 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 8,000 litres in years without snowfall. About 2,000 litres in years with snowfall.

12.2 Comment on storage capabilities of the chemicals that you use: We can store all the chemicals we use in our workshop.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc:

12.4 Have you experienced any corrosion problems with de-icers? 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: N/A.

13.2 Have you plans to purchase further 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: 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 reliable friction index 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 spray.

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: 2,880m; TORA int-take off A: 2,950m; ASDA: 3,307m, ASDA int-take off A: 2,890m; LDA: 2,892m. Runway 25: RWY length: 3,307m; RWY width: 45m; TORA: 3,307m, TORA int-take off BC-CD: 2,485m; TORA int-take off CD-DE: 2,367m, ASDA: 3,307m, ASDA int-take off BC-CD: 2,485m; 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-DE: 2,235m; TORA: 3,802m, TORA int-take off 16C: 2,825m, TORA int-take off BC-CD: 2,435m; ASDA: 3,802m, ASDA int-take off 16C: 3,025m, Int-take off CD-DE: 2,435m; LDA: 3,002m. Runway 34C: RWY length: 3,602m; RWY width: 45m; TORA: 3,002m; TORA 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; TORA int-take off A: 3,902m, ASDA: 3,902m, ASDA int-take off A: 3,902m; LDA: 3,902m. Runway 34L: RWY length: 3,902m; RWY width: 45m; TORA: 3,902m, TORA int-take off A: 3,540m; TORA int-take off A: 3,902m, ASDA: 3,902m, ASDA int-take off A: 3,902m; LDA: 3,902m.

2.2 Comment on your experience with chemicals? About 2,000 litres in years without snowfall. About 8,000 litres in years with snowfall.

2.3 Comment on storage capabilities of the chemicals that you use: We can store all the chemicals we use in our workshop.

2.4 Have you any comments on the reliability of friction indexes? We consider reliable friction index for standard measurements. We don’t have enough experience with operational measurements.

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

2.6 Do you have any other comments on experience with chemicals? Looking to possible devices to prevent ice from small water patches.

2.7 Do you use other chemicals or sand on operational areas? No.

2.8 Do you plan to purchase new equipment or vehicles? If so, please provide details: New pavement de-icer spray.

2.9 Are you about to change any of your airport’s methods? No.

2.10 Do you plan to purchase new equipment or vehicles? If so, please provide details: New pavement de-icer spray.
contracted winter services personnel are available per shift? 28 (22 snow emergency squad operators + 6 de-icer operators).

10. WINTER EQUIPMENT INVENTORY

10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment storing purpose, manufacturer and number of units (for example, compact sweeper s, vestergaard eggbeater, n. 2 units; agricultural tractor, fiat 540, n.1 unit; runway de-icing sprayer, iveco 115.17, n.1 unit; runway de-icing sprayer, om 90f, n.1 unit; salt spreader, epoke, n.1 unit; compact sweeper, schoering, n.2 units; compact sweeper fresa 2000-4x4, n.5 units; snow blower, fresia, 190 st, n.2 units; de-icer truck, safaeoro sdi 217, n.3 units; de-icer truck, safaeoro 220e, n.1 units; de-icer truck, vestergaard elephant beta, n.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: First: Rwy 18R/34L and taxiways and a portion of Apron; Second: Rwy 07/25 and taxiways and second portion of Apron; Third: Rwy 16L/34R and taxiways. 11.2 State the frequencies and general method of runway, taxiway and apron clearance: 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 17f, 10,000 litres. 50% of product in water could achieve –20°C freezing point.

12.2 Comment on storage capabilities of the chemicals that you use: 80,000 litres for pavement treatment; 100,000 litres for de-icing operation.

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? 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, Safaeoro de-icer trucks, n. 4 units; Vestergaard de-icer trucks, n. 2 units.

14.2. Are you required to have dedicated de-icing positions or do you de-ice the parking area? On parking area. In snow condition on remote dedicated area. 14.3 Is glycol recovered? If so, please state methods: Our storage system is made of cubitainers 1,000 litres each.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? Sanyos 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: n.2 compact sweeper 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.

SHANNON

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Shannon 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), RVY stretch, shoulder widths, total apron area, ramp area, other): Designator: 06, TORA (m): 3199, TODA (m): 3260, ASDA (m): 3199, LDA (m): 3199. Designator: 24, TORA (m): 3199, TODA (m): 3260, ASDA (m): 3199, LDA (m): 3059. The total apron area is 3260m².

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? Our Safety Management System was completely re-written this year.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training: All airside staff are trained in FOD procedures on induction and ongoing training is provided as re-validation. All airside staff are put through examinations, written and oral to show that they fully understand our FOD procedures. b) Inspection by airline, airport, and airplane handling agency personnel: Our Airport Operations Office (AOO) is responsible for the safety, cleanliness and efficient operation of the apron area and associated equipment parking areas. One Officer per shift maintains a full-time monitoring presence on the movement area to ensure apron inspection procedures are carried out and that records of inspections are maintained between 0600 and 2200 hrs. A duty-shift log is maintained by the Airport Operations Officer and issues are recorded as necessary. Issues requiring follow up action should be highlighted in the daily log and revisited to ensure the issues has been resolved or closed out. The AOO daily inspection sheet shall be filled out appropriately with comments, remedial actions, recommendations or areas highlighted for follow up recorded. The inspection sheet shall be signed by the officer completing the inspection. Pre-arrival parking stand inspections are carried out by airlines and ground handling agents. Post departure audits are also carried out. All of these checks are monitored by our Airport Operations Office. c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Our Airport Police and Fire Service carry out routine daily patrols of the manoeuvring area. At the following times: 00:01, dawn, 0930, 1130, 1430, 1630, and dusk (from May to September). Outside these times the Airport Police Fire Service provides ongoing patrols.

The following shall be observed during inspection: Any foreign objects or debris on surfaces, strips etc; any debris from vehicles or aircraft; any signs of surface breaking up or deterioration in paint markings; bird activity; water depth measurement when applicable. Additional patrols may also be carried out on receipt of a request from ATC. Maintenance/FOD inspection of the manoeuvring areas shall be carried out daily (Monday-Friday) by Airport Engineering Operatives. Sweeping of the manoeuvring area by the road sweeper shall be carried out on a continuous basis. Detailed visual inspection of paved surfaces on the apron must be carried out on foot. Detailed visual inspections of the manoeuvring areas i.e. taxiways, disused pavement and runways to be covered using vehicles. However, the higher the speed, the less effective the inspection, therefore, speed should be kept as low as possible taking into account the airports operations at the time in order to maximise the quality of inspections shall be notified immediately to arrange remedial action. Issues found during inspections carried out by Airport Engineering/Maintenance Operatives shall be notified in the form of an FOD report. Control and the inspection sheet completed. Inspection sheet including remedial action shall be forwarded to the Airport Maintenance Manager. Where areas inspected highlight a safety or operational risk to the airport and its users these issues will be dealt with immediately. Routine inspections of the apron and manoeuvring area are carried out in order to ensure a safe and effective environment for aircraft, vehicles and personnel operating airside. F.O.D. and pavement conditions are monitored and reported on in the course of these inspections. d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Co-ordination of multiple agencies is achieved through effective training and by the use of certain committees such as the Airline Operators Committee, Runway Safety Team, Airside Safety Committee, Bird Hazard Committee and Operations Planning Groups.

4.2 General: Are there any special systems or software you employ for FOD control? (Please specify product name and any other comments).

5. RUNWAY INCURSION PREVENTION

5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? ATC monor vehicle movements and communicate via radio.

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-MSGS; Airport Movement Area Safety System - AMASS; or ASDE-X, the Model X Airport Surface Detection Equipment); Stopbars, Warning lights, Radio communications, effective training and effective apron/airport roadway system.

5.4 Comment on the use of any innovative warnings or guards – use of paint, lighting and other lower-cost technologies: Very effective if the training and monitoring of behaviour is effective. We often bring in airside ops people from other airports to provide us with a different viewpoint to our airfield.

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 pilot training is carried out by the Irish Aviation Authority. All others are required
to go through our airside training program, airfield training and airside telephony programmes. 5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Yes and this is monitored by the Local Runway Safety Team. Further, do they safeguard the ‘non-punitive’ principles such as “non-penal” respectively? Yes. We operate our procedures as directed by the European Action Plan for the Prevention of 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: Day-to-day responsibilities in relation to bird and wildlife hazard control are assigned as follows: Surveillance of bird presence: The Chief Officer Fire & Rescue (CO-F&R), together with the Airport Fire Service, is responsible for maintaining surveillance, reporting the presence of birds and carrying out the necessary scaring and/or euthanising actions. However, all personnel with visual and/or physical access to the airside area have a responsibility to report the presence of birds to the CO-F&R or Airport Fire Service staff. Observation of the airfield and surrounding area shall also be maintained by staff and Air Traffic Services. Airport Fire Officers on patrol, ATC and other personnel involved in airfield operations/engineering shall report to the officers on watch in the Fire Station, any bird presence on the airfield, dumping of waste or release of birds. Staff on duty at watch locations shall immediately inform the Duty Aerodrome Fire Officer (AFO) of any reports received of bird presence. Dispersal of birds: The Duty AFO, or in his absence, the Station Officer (SO), is responsible for initiating and directing activities in clearing birds from the airfield, including night patrols, in order to disperse bird flocks resting on runways. Routine day and night patrols as well as any patrols requested by ATC shall be carried out to ensure that bird hazard is controlled. The number of patrols shall be increased during periods of increased bird activity. Clearing activities shall include harassment of bird flocks by driving vehicles in the direction of flocks, using a car horn, hand waving, and use of distress calls, pyrotechnic shells, shotgun and other devices deemed to be appropriate, from time to time. Dispersal action shall be co-ordinated with ATC. If there is likely to be any delay in initiating dispersal, the AFO shall inform ATC. Habitat management: Habitat management at the aerodrome is the responsibility of the Asset Care Manager. Responsibilities include a detailed grasslands management programme, airfield environment, and lagoon environment management and monitoring of hazards in leased lands and due to constructions works. Wildlife Incident Data and Procedures: The Airside Operations & Safety Officer shall present a summary of bird strike reports at each Bird Hazard Control Committee Meeting, including any supplementary and corroborative information. Responsibilities include maintaining the Wildlife Management documents and procedures and representing the Shannon Airport at Natural Hazards Committees.

Ornithologist: A Consultant Ornithologist is employed to provide expert advice to the Bird Hazard Committee and airport management on wildlife control measures. The following is an outline of the principle tasks of Ornithologist include: produce annual and interim reports on bird hazard; produce, monitor and update guidelines for bird scaring actions by the Airport Fire Service; conduct training/familiarisation for persons involved in bird hazard control; conduct field surveys and reports on bird and wildlife hazard control; advise on external developments in relation to bird hazard; advise the Bird Hazard/ Wildlife Control Committee on bird issues; advise Shannon Airport Management on bird issues. Prohibited Activities: It is internationally recognised that certain activities e.g., the dumping and/or spreading of offal on land, the position of landfills, sewage treatment plants, outfalls etc., within a 1.3km zone of an airport’s reference point, constitute a potentially serious threat to bird hazard control within this zone, and shall be fully assessed as regards their impact(s) on air safety.

Dumping of Food Waste: Open dumping of food waste or other organic material is prohibited within the airport. The Airport Fire Service and Airside Operations personnel on patrol duties shall maintain constant vigilance and ensure that any unauthorised dumping in the vicinity of the airport is reported to the Airport Operations Office. Feeding of Birds: Food of any kind should never be made available to birds (or Rats). Therefore birds should never be fed and all edible waste should be carefully placed by the operations staff and which are sealed against birds. If this is not done correctly, starlings and gulls will quickly learn that food is available. This food could result in a major hazard to aircraft by attracting birds across the active runways. In addition, the placement of a bird feeder by airport personnel or members of the public is prohibited. Release of Birds: The release of birds within or near the aerodrome boundary is strictly prohibited and any such activity shall be immediately reported to the Duty AFO or CO-F&R. 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? Airfield patrols are carried out continuously. 6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/ manufacturer): Recorded distress calls, pyrotechnics and varey pistols are used as required. 6.4 Do you carry out a bird strike risk assessment? Yes. Carried out by our Safety, Health and Environment Manager.

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. Detailed logs are kept in relation to bird activity, location, reports, strikes, carcasses etc. 6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No 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: 3 x 6x6 Sides Rapid Intervention Fire Trucks, Registered 2009, C18 Engine automatic 24m wide boom, trailer mounted sprayer; 1 Four wheel drive tractors with both snow ploughs and spreaders; *4 Three wheel drive tractors with both snow ploughs and spreaders (available on contract basis, if required); 2 Two wheel drive tractors (one equipped with spreader); 1 Road Sweeper; 2 SMi Sweepers; 1 Eagle Sweeper; 1 Mechanical Sweeper; 1 Sprayer; 1 Gritter; *2 Front Loaders - mechanical shovels JCB type (available on contract basis, if required); 2 Magirus Deutz trucks and blades; 1 Leyland rotairtrain truck and blade; 8 Brushes; *4 Trailers (available on contract basis, if required).

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 priority for clearing or treating for snow/ice is as follows: 1. Operational runway 2. Associated taxiways 3. Apron taxi lanes & Fire Station 4. Aircraft parking areas 5. Access roads 6. Airside passenger walkways 7. Landside areas a) public roads b) landside footpaths c) car parks

Clearance – Runway 06/24 shall be cleared to its full length and width i.e. 3199m x 45m (excluding shoulders), Main Taxiways Delta and Alpha will be cleared. Aircraft parking stands will be cleared as required. Snow banks at the edges of cleared runways shall be defined as critical if their height exceeds 300mm (12 inches). Snow banks at the edge of taxiways shall not exceed 300mm.

11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: When a significant snow fall occurs it is likely that Shannon currently operates a Pressurised Fire Screen and an engine rig with a Boeing 727 aircraft also available as a training aid. We will discuss with other airports any potential business opportunity.

PART 2: WINTER SERVICES

7.16 What specialist equipment do you employ for snow clearance of main operational facilities (runways, taxiway, aprons etc) stating identity of each facility:

Snowploughs: Total of 6 snowploughs: 2 15m wide snow ploughs, 2 8m wide snowploughs, 2 4m wide snow ploughs.

Winter Services Questionnaire

8. RECENT WINTER CONDITIONS

8.1 What is the designated period of winter readiness? November to February.

8.2 Average annual days of snow: Nil.

8.3 Average snow depth: N/A.

8.4 Maximum snow in 24 hours: N/A.

8.5 Annual number of days of de-icing activities: 10.

9. WINTER ORGANISATION

9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? Shannon Airport operate an 8 Man snow & Ice team available on a 24 /7 callout basis outside of normal of hours operations (08:30...16:30 hrs).

20 Airport, Contracted staff as needed. Shannon Airport has external contractors available at short notice to deploy, at short notice and any such activity shall be immediately reported to the Duty AFO or CO-F&R.

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 priority for clearing or treating for snow/ice is as follows:


Clearance – Runway 06/24 shall be cleared to its full length and width i.e. 3199m x 45m (excluding shoulders), Main Taxiways Delta and Alpha will be cleared. Aircraft parking stands will be cleared as required. Snow banks at the edges of cleared runways shall be defined as critical if their height exceeds 300mm (12 inches). Snow banks at the edge of taxiways shall not exceed 300mm.

8.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: When a significant snow fall occurs it is likely that

8.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: When a significant snow fall occurs it is likely that
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11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway without Shovels? Airport have not experienced significant snow falls to-date.

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 results (e.g. method of application, use of sand etc.). The principal means of prevention is to spread de-icing/anti-icing agents when either of the following conditions occurs – when the temperature is -3°C and falling and the runway/apron is wet, or when an overnight frost warning is given and the runway/apron is wet. De-icing agents to be used include: Urea (Effective > -5 degrees Celsius) (approximately 20 tonnes deployed last year); Potassium acetate (Effective > -15 degrees Celsius) (No product deployed last year); Sodium Formate (Effective > -15 degrees Celsius) (No product deployed last year). For ice conditions the Duty Airport Manager shall alert the Airport Engineering/Maintenance Team involved in ice prevention/ice clearance from the runways, taxiways and aprons.

12.2 Comment on storage capabilities of the chemicals that you use: The following minimum stock levels are maintained at the airport in readiness for the possibility of snow/ice conditions and contracts are in place for it’s replenishment as required: Urea (60 tonnes), Potassium Acetate (20,000 litres), Sodium Formate (23.5 tonnes), Salt ** (20 tonnes) ** Salt shall only be used on landside areas.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with solids, “blow-away factor” etc: Solid De-icers are normally deployed in the evening/early morning times to “blow-away factor” etc: Solid De-icers are normally deployed on the runway, taxiway and pavement surfaces if low temperature conditions are expected.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Ice warning systems have not been installed in Shannon. There is a full reliance on weather forecasting. When we can we will install warning systems but our climate and weather history do not justify the investment at the moment.

13.2 Have you plans to purchase further ice warning systems and if so, which model(s)? See above 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 manufacturers, and number of units: No. Airlines and handling agents provide this service.

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

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

15. FRICITION TESTING

15.1 What model(s) of friction tester do you use? Skidometer. Novemter.

15.2 Have you any comments on the reliability of friction indexes? We find them consistent and reliable.

16. FUTURE DEVELOPMENTS

16.1 Are you about to change any of your airport’s methods? Recently we became independent of the DAA incineration plant but we still use Shannon as an independent airport, part of the Shannon Group.

16.2 Do you plan to purchase new equipment or vehicles? If so, please provide details: We have a plan to replace vehicles but not until 2016.

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

16.4 Do you have any winter services equipment that you would like to sell? Not at the moment.

SKOPEJ

PART 1: GENERAL AIRSIDE SAFETY

1. AIRPORT NAME: Skoje

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, other): RWY 34 length 2.950 m =TORA, RWY width 45 m, shoulder 7.5 m, total apron area 60.520 m, ramp area 64.080 m.

2.2 Landing aids for each RWY (e.g. CAT II; ALS CAT I RWY 34; LLZ, GP OM, MM, VOR/DME and visual aids: ALS & runway lights CAT II, PMI) and RWY 16 only visual approach.

3. SAFETY MANAGEMENT SYSTEMS

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

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

4.1 Describe your airport’s programme to control FOD in terms of: a) Training: Included in ramp safety training, b) Inspection by airline, airport, and airplane handling agency personnel and airport staff. c) Maintenance (use of sweeping, magnetic bars, rump strips, FOD containers etc): Use of sweeping vehicle SCHMIDT and FOD containers.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Airport ramp dispatcher.

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

5. RUNWAY INCURSION PREVENTION

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

5.2 Are any design or engineering changes being undertaken /required to eliminate perceived hazards? Not required.

5.3 What safety devices are currently employed? (A-SMGCS: Airport Movement Area Safety System - AMSAS; or ASD-E, the Model X Airport Surface Detection Equipment): None of this, only stop-bar lights.

5.4 Comment on the use of any innovative warnings or guard – use of paint, lights, 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? Aisle safety training only for airport vehicle operators.

5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no penalty’ reporting? Yes.

6. BIRD AND WILDLIFE CONTROL

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

6.2 Are you about to change any of your airport’s bird control staff? No.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/ manufacturer): Bird guard pro super.

6.4 Do you carry out a bird strike risk assessment? Yes.

6.5 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/ltre and type); year of manufacture: Rosenbauer Rapid Intervention Vehicle; Mercedes Benz Atego 1225 4x4; 2.400/300/250 fx mic; 2002; Rosenbauer Universal FF truck MB Axor; 50/50/250 ULF foamalic/2002; Rosenbauer FF truck MB Axor 333.4x6x9/6/9.000/1.000/250 FL/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 to 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 de- icing activities: 71 days

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

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

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons) in each season - whenever possible: Identify each priority: Runway 34/16, TY W & H, apron.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: Centre line to edges.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? 20 minutes.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Avform L50, 9,800 kg.
12.2 Comment on storage capabilities of the chemicals which you use: 60 m3.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Only urea is used.
12.4 Have you experienced any corrosion problems with de-icers? No
12.5 Have you employed any special means to economise on chemical use? No
12.6 Do you have any other comments on experience with chemicals? No
12.7 Do you use other chemicals or sand on operational areas? No

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Handheld infrared thermometer.
13.2 Have you planned to purchase new ice warning systems and if so which model(s)? No
13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: n/a

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

15. FRICATION TESTING
15.1 What model(s) of friction tester do you use? SAAB SFT 340
7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Mercedes UNIMOG, 4x4, 1000/1000 l, 1 unit; Mercedes Saurus, AS 12 + 250, 6x6, 10000/12000 l, 2 units; Tata CAS 815, 4x4, 8000/800, 2 units. 7.2 Future CFR fleet – are there plans to purchase or dispose of any equipment? We ordered new Fire Fighting Vehicles: Panther – 2 units. 7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? No.

8. WINTER ORGANISATION
8.1 What is the designated period of winter readiness? November-March 8.2 Average annual days of snow: January – 6, February – 2, March – 5, November – 4, December – 3. 8.3 Average snow depth: January – 9.3, February – 7.1, November – 8, December – 3. 8.4 Maximum snow in 24 hours: January – 1, February – 1, March – 6, November – 13, December – 5. 8.5 Annual number of days of de-icing activities: < 60 days

9. WINTER EQUIPMENT INVENTORY
9.1 How many airport-employed or subcontracted winter services personnel are available per shift? Seven employed per shift.

10. WINTER INVENTORY
10.1 Please list the identities of primary de-icers and other relevant winter equipment stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJ 720, 4 units); Rotor sweeper, Ursal, 2 units; Rotor sweeper, Rolba Bucher, 2 units; Truck-trailer, Tatra with Plough; Schmidt - 9 units; Brush blower, Overasen, 6 units; Truck-trailer with Brush blower; Overasen, 2 units; Brush blower with plough, Boshung, 2 units; Brush blower with plough, Fresia, 2 units; Specialized snow cleaning combined machine, Boshung, 1 unit; Specialized snow cleaning combined machine, Bucher, 2 units; Spreaders; IFA, 1 unit; De/anti-icing machine, Boshung, 1 unit.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxayi, aprons etc) stating identity of each facility: Runway, Taxiways (entrance & exit), Apron, other Taxiways. 11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: General method is: Push out snow with ploughs and brushing; Throw out snow with rotor sweeper; Use spreaders / Kenny; Ficchin testing. 11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? For 35 minutes.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Winter 2013/2014: Carbamid (urea) – 100 t, Temosol – 15 000 l. 12.2 Comment on storage capacities of the chemicals that you use: Carbamid (urea) – 240 t, Isomex – 33 000 l. 12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Solid de-icer – treatment from wind direction. 12.4 Have you experienced any corrosion problems involving de-icer – treatment from wind direction. 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: N/A. 13.2 Have you plans to purchase further ice warning systems and if so, which model(s) N/A? 13.3 Comment on your experiences of the benefits/disbenefits of ice warning systems: N/A.

14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti-de-icing operations? If so, please state vehicle or other facility manufactures, and number of units: Three GH operators provides 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 Kilffrost K-Plus. GH operator “Swissport Bulgaria”: JBT Tempest – 3 units; De/anti icing fluid Type I Kilffrost DF Plus, Type IV Kilffrost ABC-S Plus. GH operator “Goldair Handling Bulgaria”: JBT TM 1800 – 2 units; De/anti icing fluid Type II, Proviron/Cyotech Polar Guard II. 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 “EUROPE”, with 1/one position for treatment of aircraft ICAO code E; PAD “WEST” is for simultaneously treatment of 2/xuo aircrafts ICAO code C or 1/one aircraft ICAO code E. 14.3 Is glycol recovered? If so, please state methods: No, the glycol is not recovered.

15. FRICITION TESTING
15.1 What model(s) of friction tester do you use? Saab 9000 SFT, Saab 95 SARSYS. 15.2 Have you any comments on the reliability of friction indexes? We haven’t. 15.3 What safety devices are currently employed? There are no safety devices in place.

16. RUNWAY INCURSION PREVENTION
16.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Movements on the ground are regulated by the Airport local rules. 16.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Yes. 16.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety Solutions - AMASS; or ASDX-E, the Master X Airport Surface Detection Equipment): There are no safety devices in place.

16.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: We find it effective and appropriate for SPU AP. 16.5 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. 16.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? We have been set up the reporting procedures jointly with other parties. We respect “non-punitive” principles.

6. BIRD AND WILDLIFE CONTROL
6.1 Please detail your habitat management policy and how it reduces the attraction of the animals to birds: Habitat management focus, identification of wildlife attractants (sources of food, water and shelter) on and in the vicinity of the airport and its elimination or exclusion.
6.1 Do your staff attend recognised bird control training courses? No.
6.2 Are your Sandeep’s 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 or manufacturer: Fire sirens, rocket guns, MEGA BLASTER PRO.
6.4 Do you carry out a bird strike risk assessment? Yes, using Wildlife Management modul in “Galiot” system.
6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Our staff log all activities using Wildlife Management modul in “Galiot” system.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are you tackling the problem? Solid de-icing chemical?

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 fighting vehicle MAN 6x6 8,500L/1000L; 1 Heavy fire fighting vehicle MERCEDES 9000L/1000L; 1 Heavy fire fighting vehicle MERCEDES 8500L/1000L; 1 Commander vehicle Jeep Cherokee Toyota Land Cruiser; 1 Commander vehicle Jeep Cherokee 2.8 CRD; 1 Trailer Ziger with medical equipment 2.5 t. 7.2 Future developments – are there plans to purchase or dispose of any equipment? Yes.
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Split Airport does have Fire training simulator.

8. WINTER SERVICES QUESTIONNAIRE
8.1 What is the designated period of winter readiness? 1 November to 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.

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 in stating purpose, manufacturer and number of units (for example, compact jet sweeper, Schmidt, CJ 720, 4 units); Snow plough Rasco PK3.2, 1 unit; Snow plough Rasco Versus 3.2, 1 unit; Tractor Valtra N101H 1 unit; Snow plough 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: runway, taxiways, apron, curb, grass island.
11.2 State the locations of vehicles, formations and general method of runway, taxiway and apron clearance: A fast going plough formation move the snow from inner part of the paved surface to 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, 1 ton 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 the chemicals?
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? Liquid de-icing preparations.

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 models? 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: 1 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.
14.4 Do you purchase, use more expensive de-icing products? No.

15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Runway surface friction tester ASFT Slidava Octavia CFME (500 l).
15.2 Have you any comments on the reliability of friction indexes? No.

16. FUTURE DEVELOPMENTS
16.1 Are you about to change any part of your airport’s programmes? 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 unit, Self-propelled conveyer-belt loader (2 units), Boarding/De-boarding vehicle for passengers with reduced mobility, Taxiway and Apron edge lights, Vertical signs...
16.3 Do you currently have equipment or other products with de-icer? 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.

STOCKHOLM ARLANDA
PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Stockholm Arlanda 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):

01/13R, 3301m, 3301m, 45m, 2 x 12.5m; 01/19L, 2500m, 2500m, 45m; 2 x 7.5m; 08/26, 2500m, 2500m, 45m; 2500m, 45m; 2 x 12.5m; 08/26, 2500m, 2500m; 08/26, 2500m, 2500m.

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: Part of initial and recurrent training “Working at an Airport”, introduced in “Handbook for people that work...”
4.2 General: Are there any specific systems or software solutions you employ for FOD control? (Please specify product name and add any comments): In-house solution incorporated in GIS mapping system.

5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? A-SMGCS Level 1 (SMR, MLAT and visual observations).
5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Under constant review, initiated by reports or input from LRST Local Runway Safety Team.

6. VEHICLE AND WILDLIFE CONTROL
6.1 Describe your airport’s programme to control FOD in terms of: a) Training: Part of initial and recurrent training “Working at an Airport”, introduced in “Handbook for people that work...”
6.2 Are there any systems or software solutions you employ for FOD control? (Please specify product name and add any comments): In-house solution incorporated in GIS mapping system.
Our Airport Safety Management System - SMS describes in paragraph 22.6.4 that wildlife control is assigned at Stockholm Arlanda Airport to ensure the precautionary and urgent work to prevent collateral accident or breakdown caused by bird and/or wildlife, at and near the airport. The business’ long-term goal is to systematically work to continually reduce the number of bird- and wildlife collisions.

The plan is aimed primarily towards internal and external stakeholders that may affect wildlife control. Clear communication- and information channels assure fast and accurate response and action. Satisfying contacts with other actors outside the airport and competent communication within Sweden establish a desirable platform for conducting wildlife control in the best possible way. In 2014, the goal is to reduce the risk of collision between birds and aircraft. With continuing efforts to identify, document and implement risk assessments of species present on air- and landside.

Our vision is to keep risks to a minimum through targeted interventions, making the airport as unattractive to birds and wildlife as possible. Daily journaling and wildlife reporting, together with an evaluation on a monthly basis, help us to assess the effectiveness of the various tools and methods that we use. The evaluation collects data from The Swedish Transport Agency’s Civil Aviation Department (Transportstyrelsen Luftfart), with which our reports and observations are compared.

8.2 Average annual days of snow: 80
8.3 Average snow depth: 150cm (past 3 years)
8.4 Maximum snow in 24 hours: Between 20-30cm
8.5 Annual number of days of de-icing activities: 68

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 1.7 fixed - 24/7; 5 extra on call between 05:00-20:00; 10 extra temp; 14 trucks for snow transport within 90 min (sub-contractor).

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, CJ 720, 4 units): Compact jet sweeper TJS-C 560 – 21 units; Snowblower - TV 10000 – 2 units; Snowblower - UTV 430 – 2 units; SAAB surface friction testers – 4 units; Piston Engine – 1 unit (To organise and compress snow at our snow dump); Nilso Runway De-icing Spreaders - 2 units; Dump Truck for snow transport – 3 units; Wheel loaders – Volvo L60L L70 – 7 units; Wheel loaders – Volvo L90L110 – 2 units; Wheel loaders – Volvo L120 – 20 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:
11.2 Comment on storage capabilities of the chemicals (e.g. solid, liquid, percent freezing temp drops, changes in weather).
11.3 Is glycol recovered? If so, please state vehicle or other methods:
11.4 Does the airport directly provide aircraft air-conditioning? Yes!
11.5 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 is Clearway F1, provided by Kemira. Effective down to ~15 degrees C, requiring a larger amount in low temperature than around + 0 degrees C.

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 is Clearway F1, provided by Kemira. Effective down to -15 degrees C, requiring a larger amount in low temperature than around + 0 degrees C.

13. ICE WARNING SYSTEMS
13.1 State model and number of ice warning systems: Vaisala HM540 – 3 sensors on each 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: Reliable and gives a good prediction about temp drops, changes in weather.

14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/de-icing operations? No!
14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Stockholm-Arlanda Airport only allow aircraft being de-iced at designated sites. De-icing locations are both remote and at terminal stands.
14.3 Is glycol recovered? If so, please state methods:

15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Sarsys Friction Tester (SFT), built into the SAAB 9-5 Sport Wagon – 4 units.
15.2 Do you plan to purchase new equipment or vehicles? If so, please provide details:

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:

STUTTGART

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Stuttgart 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 07/25 – 3,345m × 45m, TORA RWY 25 3,045m, TORA RWY 07 3,345m; Total apron surface area: 700,000sqm. 2.2 Landing aids for each RWY (e.g. CAT II): RWY 07/25 ILS, PMI, CAT IIb.

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) is permanently involved in monitoring the operational processes and releases Safety Bulletins whenever necessary.

4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION
4.1 Describe your airport’s programme to combat FOD in detail.
   a) Training: Basic staff training, refresher trainings; Annual Safety Trainings; Safety Bulletins.
   b) Inspection: Visual inspections; and airplane handling agency personnel: All persons operating in the movement area are responsible for the prevention and removal of FOD according to Airport User Regulations.
   c) Maintenance: Use of sweeping, magnetic bars, rumble strips, FOD containers etc: The manoeuvring and apron area is cleaned at regular intervals and when required by surface Sweeper vehicles. Additionally manual cleaning is performed by Stuttgart Airport Airside Operations Staff. 3.3 The ICAO Manual on Certification of Aerodromes (FOD) PREVENTION 4. FOREIGN OBJECT DAMAGE

5. RUNWAY INCURSION PREVENTION
5.1 What is the primary method of monitoring vehicle and aircraft movements on the ground? Vehicles may only use the manoeuvring area after prior permission by Stuttgart Airport Airside Operations has been received and an approval of the local ANSP (FOD) PREVENTION has been received. Vehicles are mainly monitored by visual observation.

5.2 Are any design or engineering changes being undertaken/required to eliminate perceived hazards? Installation of runway guard lights (alternating yellow lights) at all CAT I holding points; marking of RWY clearances (07-25) are painted at all CAT I holding points; illuminated red stop bars are installed at all CAT I/II holding points (used only in LVC); ICAO standard signages and marking at all runway entries.

5.3 What safety devices are currently employed? (A-SMGCS; Airport Movement Area Safety System - AMSAS; or ASDE-X, the Model X Airport Surface Detection Equipment); A standard ground radar (ASDE) is currently used. The installation of A-SMGCS multilateration is planned by the local ANSP.

5.4 Comment on the use of any innovative lighting or signage, lighting and other lower-cost technologies: Nil.

5.5 What specific procedures are there for training and awareness among pilots, controllers, mechanics, airport vehicle operators, and other people who work at the airport? The standard airside driving permit is only valid for the apron area. Any staff requiring access to the manoeuvring area obtains an additional permit which requires further training such as communication with ATC and all rules on the manoeuvring area. 5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the “non-punitive” principles such as “no-penalty” reporting? All incidents on the manoeuvring area are analysed by the local Runway Safety Team which contains representatives from Airside Operations, Airside Operations, Airport Safety Management System, based pilots and the airport’s legislator. In general all incidents are treated in a “no blame” culture unless the incident or occurrence requires disciplinary action.

6. BIRD AND WILDLIFE CONTROL
6.1 Please describe bird and wildlife control policy and how it reduces the attraction of the airfield to birds: A coordinated cultivation of our green pastures, removal of nesting sites and active Bird Control decreases the attraction of the airfield.

6.2 Do you staff attend recognised bird control training courses? Stuttgart Airport closely co-operates with local bird control experts. Besides that Airside Operations Staff is also trained in wildlife control.

6.3 What bird control equipment do you employ for bird control? (Please state relevant contractor, supplier and manufacturer): Use of paint, signage by local bird control experts and by Airside Operations Staff.

6.4 Do you carry out a bird strike risk assessment? Nil.

6.5 Do your staff log all their bird control activities (to manage success in dealing with the problem, and to use in defence in case of lawsuits)? All activities of wildlife control are documented by local bird control experts and by Airside Operations Staff.

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Stuttgart Airport extended its monitoring to any other wildlife (e.g. foxes) already years ago.

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4x4, 6x6); capacities (water, foam, dry chemical); manufacturer: Nil.

7.2 Future developments – are there plans to purchase or dispose of any equipment? We want to start the project for the substitution and advertising of our 4 CFR-Vehicles in 2016 and try to purchase them in 2017/2018.

7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? We do not have our own Fire Training-Simulator. We rent the Simulator from FRAPORT at the time for a week each year to train our fire-fighting personnel in Aircraft Fire Fighting.

PART 2: WINTER SERVICES
7. RECENT WINTER CONDITIONS
7.1 What is the designated period of winter readiness? November 1 to April 15.

7.2 Average annual days of snow: Nil.

7.3 Average snow depth: Nil.

7.4 Maximum snow in 24 hours: Nil.

7.5 Annual number of days of de-icing activities: Nil.

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 30-40 plus depending on actual weather.

10. WINTER EQUIPMENT INVENTORY
10.1 Please list specialist snow clearing, de-icing and other relevant winter equipment stating manufacturer, number of units (for example, compact jet sweeper, Schmidt, CSS 720, 4 units); Compact jet sweeper: Schmidt; Jet Sweepers: Overaasen; Snow Blowers: Schmidt; Apron Clearing Vehicles: Boschung; Jet Sweeper: Schmidt, Schörling; Apron De-icing Vehicles: Dammann; De-icing Vehicles for spreading sand, solid and fluid de-icing materials: Schmidt, Kuepper-Weisser; Jet-snowblower: Faboki; 2 Skiddometers.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: Runway 07/25 and main taxiways (TWRs A, N, K), de-icing areas, taxiway centralines, parking stands centralines, main apron roads, entire apron area, 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 7 snow sweeper-plough vehicles, 1 snow blower, 1 Jet-snowblower, 1-2 de-icers and 1 inspection vehicle. If two convoys are available runway may be cleared in one run. After clearing of the runway is completed a friction measurement / runway assessment is performed by Airside Operations Staff. Apron treatment is performed by single vehicles and by the RWY clearing convoy.

11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? Average clearing times are defined depending on amount of available RWY clearing convoys and prevailing weather situation. After moderate snow these times are always kept.

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 LSO and AVIFORM S-Solid; LNT Airside Solid; ESSPO Nordway NF; Tamincro Clearway F1; LNT GEN3. Holdover times depend on temperatures and snowfall intensity and cannot be quantified in general.

12.2 Comment on storage capabilities of the chemicals that you use: Storage capability of fluid de-icing material of 400,000 litres (manoeuvring area) and 300,000 litres (apron area) at the airport. Besides that storage capability of 100 tons of solid de-icing material available.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Solid de-icers are always used in a
combination with fluid de-icing material to grant enough humidity, Decision on usage and the amount disposed taken by Winter Services Manager on Duty.

12.4 Have you experienced any corrosion problems with de-icers? Within the apron areas GEN is used to reduce the risk of corrosion to any materials.

12.5 Have you employed any special means to economise on chemical use? Mechanic cleaning always has priority to any use of chemicals. If chemicals are used the amount should be as low as necessary depending on the current weather situation.

12.6 Do you have any other comments on experience with chemicals? Nil.

12.7 Do you use other chemicals or sand on operational areas? Only the chemicals above are used; sand is only used during special weather situations (e.g. freezing rain).

13. ICINE WARNIN SYSTEMS

13.1 State model and number of ice warning systems: Boschung ice warning system with 13 measuring 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 supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

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? De-icing is performed on 4 remote de-icing pads due to environmental restrictions. Pre-de-icing may be performed for early departures on the parking stands.

14.3 Is glycol recovered? If so, please state methods: Glycol is captured along with drainage run-off and stored in special reservoirs treated on-site before being released to two local sewage plants. Apron areas are cleaned of any de-icing fluid by usage of surface sweeper vehicles.

16. BIRD AND WILDLIFE CONTROL

16.1 Are you about to change any of your operational areas? Only the chemicals above are used; sand is only used during special weather situations.

16.2 Do you have any other comments on experience with chemicals? Nil.

16.3 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.4 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.5 Are you about to change any of your operational areas? Only the chemicals above are used; sand is only used during special weather situations.

16.6 Do you have any other comments on experience with chemicals? Nil.

16.7 Do you use other chemicals or sand on operational areas? Only the chemicals above are used; sand is only used during special weather situations.

16.8 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.9 State model and number of ice warning systems: Boschung ice warning system with 13 measuring sensors.

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

16.11 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.12 Please list specialist snow clearing, de-icing and other lower-cost technologies you would like to sell? Nil.

16.13 Are you about to change any of your operational areas? Nil.

16.14 Do you have any other comments on experience with chemicals? Nil.

16.15 Are you about to change any of your operational areas? No.

16.16 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.17 State model and number of ice warning systems: Boschung ice warning system with 13 measuring sensors.

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

16.19 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.20 Please list specialist snow clearing, de-icing and other lower-cost technologies you would like to sell? Nil.

16.21 Are you about to change any of your operational areas? No.

16.22 Do you have any other comments on experience with chemicals? Nil.

16.23 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.24 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.25 Are you about to change any of your operational areas? No.

16.26 Do you have any other comments on experience with chemicals? Nil.

16.27 Do you use other chemicals or sand on operational areas? Only the chemicals above are used; sand is only used during special weather situations.

16.28 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.29 State model and number of ice warning systems: Boschung ice warning system with 13 measuring sensors.

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

16.31 Comment on your experiences of the benefits/disbenefits of ice warning systems: It supports the judgement of the prevailing surface conditions. However it is only used as secondary information. Main information on surface conditions is obtained by regular inspections by Airside Operations Staff.

16.32 Please list specialist snow clearing, de-icing and other lower-cost technologies you would like to sell? Nil.

16.33 Are you about to change any of your operational areas? No.

16.34 Do you have any other comments on experience with chemicals? Nil.

16.35 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.36 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.37 Are you about to change any of your operational areas? No.

16.38 Do you have any other comments on experience with chemicals? Nil.

16.39 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.40 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.41 Are you about to change any of your operational areas? No.

16.42 Do you have any other comments on experience with chemicals? Nil.

16.43 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.44 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.45 Are you about to change any of your operational areas? No.

16.46 Do you have any other comments on experience with chemicals? Nil.

16.47 Do you currently have equipment or other vehicles? If so, please provide details: No.

16.48 Do you plan to purchase new equipment or vehicles? If so, please provide details including manufacturer and number of units: No.

16.49 Are you about to change any of your operational areas? No.

16.50 Do you have any other comments on experience with chemicals? Nil.
11. PROCEDURES AND METHODS

11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: RWY 8/26, TWY B, exit road from the fire station and ILS critical areas; 2: 1-15 AFCT stands on the Apron A; 3: TWY A and TWY C,D,E,F 4. Apron B and C; 5. Other AFCT stands, apron A.

11.2 State the specific provisions 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 clearing system is same: from centre to shoulder.

11.3 After moderate snow, how quickly do you expect to get the airfield "black top" on the runway achieved in 10-15 min

12. EXPERIENCE WITH CHEMICALS

12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Unsaiat SF 200 tons. Unsaiat BA150 tons. Unsaiat is effective and reacts very quickly. No experience with using below -10°C.

12.2 Comment on storage capabilities of the chemicals that you use: We store approximately 40-70 tons of Unsaiat SF (dry) and 40-70 tons of Unsaiat BA (liquid).

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, "blow-away factor" etc:

12.4 Have you experienced any corrosion problems with de-icers? Yes

12.5 Have you employed any special means to economise on chemical use? Yes, very good information about weather and experiences.

12.6 Do you have any other comments on experience with chemicals? Trying to vary (to manage success in dealing with the problem, continually, hourly, less than hourly? Continuously.

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Runway temperature sensors (6 sensors on RWY by Vaisala)

13.2 Have you any plans to purchase new equipment or vehicles? If so, please provide details: Yes, ARFF trucks.

13.3 How do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes, 2 ARFF trucks from Hempel.

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

15. FRICITION TESTING

15.1 What model(s) of friction tester do you use? ACE skidmeter 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, ARFF trucks.

16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes, 2 ARFF trucks from Hempel.

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

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 length x width: 2,500m x 45m, TORA: 2,500m; Total Apron area: 46,212sqm – Commercial aviation apron: 450m x 78m, General aviation apron: 156m x 77t; KAD Category: 4D.

2.2 Landing aids for each RWY (e.g., CAT III):

PART 2: WINTER SERVICES

4. ICE WARNING SYSTEMS

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


4. FOREIGN OBJECT DAMAGE (FOD) PREVENTION

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


b) Inspection by airline, airport, and airplane manufacturer: Type: Rosenbauer – Panther, 2 units.

5. SAFETY MANAGEMENT SYSTEMS

5.1 The ICAC Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.”

5.2 Have you any comments on the reliability of friction indexes? No
5.6 Have the reporting procedures for runway safety incidents been set up jointly with other parties active in these processes? Further, do they safeguard the ‘non-punitive’ principles such as ‘no-penalty’ reporting? Incidents and safety relevant matters can be reported non punitive (Safety Report).

6. BIRD AND WILDLIFE CONTROL
6.1 What is your airport’s policy and how it reduces the attraction of the airfield to birds? 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 you 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 incidents addressed? No

7. CRASH FIRE RESCUE
7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g., MAN); axles (AX4, AX6); capacities (kg/litre and type); year of manufacture: Several vehicles to fulfil ICAO CAT 9 requirements for both RWY’s.
7.2 Future developments – are there plans to purchase or dispose of any equipment? No
7.3 If your airport possesses a Fire Training Simulator, is this available to other airports for training purposes? Yes – it’s used by all Austrian Airports.

8. WINTER SERVICES QUESTIONNAIRE
8.1 What is the designated period of winter readiness? Oct. 15th to Mar. 31st.
8.2 Average annual days of snow: 20
8.3 Average snow depth: 81 cm
8.4 Maximum snow in 24 hours: Season 2013/2014: 1cm.
8.5 Annual number of days of de-icing activities: Season 2013/2014: 119.

9. WINTER ORGANISATION
9.1 How many airport-employed or sub-contracted winter services personnel are available per shift? 360 airport employees in total (228 airport employees and 76 sub-contracted) applied. 61 airport employees (including jumpers) and 16 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, CIS 720, 4 units): Jetbroom Runaway, Boschung, 10; Jetbroom 9000, Boschung, 8; Snowblower, Kahlbacher, 9; Snowblower, Schmidt, 3; Snowplough, Mercedes Unimog, 4; Tractor with Snowplough, Steyr, 11; Liquid Deicer, Schmidt, 1500l, 3; Multi Deicer, solid wet, Schmidt-Niels, 1; Small Multi Deicer function with plough or brush, Boschung Pony, 6; Snowplough, PFA/Schmidt, 3; Small Tractor with Snowplough and Deicer, Iskii, 2; Tractor with Snowplough and Deicer, Reform, 2.

11. PROCEDURES AND METHODS
11.1 Please state here order of priority of snow clearance of main operational facilities (runways, taxiways, aprons etc) stating identity of each facility: 1. RWY’s & Apron. 2. TWY’s
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance: RWY: 10 Jetbroom Runaway, 3 Snowblower, 2 Unimog with plough – one run concept, TWY: RWY vehicles according to TWY width, APRON: 8 Jetbroom 9000, several Snowplough’s and other available vehicles.
11.3 After moderate snow, how quickly do you expect to achieve “black top” on the runway? Staff to be expected on the airport after 75min., “black top” within 30min.

12. EXPERIENCE WITH CHEMICALS
12.1 State which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: Vehicles acc. to 10.1.
12.2 Comment on storage capabilities of the chemicals that you use: 500.000 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 environment 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 Icealert.
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 O°C questionable reliability.

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

15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Skidmeter BV11

ZURICH

PART 1: GENERAL AIRSIDE SAFETY
1. AIRPORT NAME: Zurich Airport
2. MOVEMENT AND MANOEUVRING AREA DATA
2.1 Please list the identities of primary operational facilities and the surface areas (for example: total RWY length (or lengths), Take Off Run Available (TORA), RWY width, shoulder widths, total apron area, ramp area, other): RWY 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 18 CAT Ilb, RWY 29 CAT IIIib, 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 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.
4.2 Inspection by airline, airport, and airplane handling agency personnel: FOD inspections are performed by airport operations on manoeuvring areas and by handling agents before aircraft entering the parking stand.
4.3 Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Continuous sweeping from 6 am to 3 am 70 FOD Pins are installed.
4.4 Coordination of multiple agencies using airport (airlines, handling agents etc): Ramp Safety Committee
4.5 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 ASD-E-X, the Model X Airport Surface Detection Equipment): A-SMGCS – ASTOS – AVIBT
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 and 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.
### 3. SAFETY MANAGEMENT SYSTEMS

3.1 The ICAO Manual on Certification of Aerodromes specifies that: “The aerodrome operator shall establish a Safety Management System for the aerodrome.” Has your airport made any recent changes to its SMS following the reappraisal of risks and hazards identified by internal/external SMS audits? Zurich Airport has received the Airport Certification 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, a Safety Management (including hazard & risk assessment, safety management system (SMS) and finally the 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 (e.g. flyers). The Ramp Safety Culture Team Zurich raises the issue on a regular basis. b) Inspection by airline, airport, and airline handling agency personnel: Runways and Taxiways are checked on a regular basis by the Airport Authority. A 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/week from 03:30 to 21:30. During the remaining time an on-call service is established. They clean daily airplane stand surfaces at least once. When necessary, additional special cleaning can be ordered by Apron Control or for the Airport Authority. Apron and Taxi Areas: Same procedure and cleaning teams as for the stands; cleaning interval twice a week. Apron and Taxi Areas were swept with FOD Boss. Runways: No regular cleaning concept. However cleaning is done when necessary and requested and after maintenance work, bird strike incidents, etc. Runways are inspected four times a day. d) Co-ordination of multiple agencies using airport (airflow, handling, a phila overhauling) with the cleaning teams of the Airfield Maintenance, all airport partners are requested to pay attention to FOD and remove it. Specially marked and yellow FOD bins are stationed on various locations accordingly.

4.2 General: Are there any specific systems or software solutions for FOD control? (Please specify product name and add any comments): Momentarily no such software-based reporting system exists. Certainly, Airfield Maintenance has a system in operation which monitors the tour of the cleaning vehicles and aircraft movements on ground is visual observation, partly assisted by cameras and A-SMGCS during Low Visibility Operations. “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 to eliminate previously known 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, AMTD110. A bypass taxiway across 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 - AMAS; Air Traffic Management Equipment; Radar; Multilateration-System). Zurich is operating an A-SMGCS with the integration of the Approach radar, two ASDE and a Multilateration-System. Additionally a “Runway Incursion Monitoring and Collision Avoiding System (RIMCAS)” is installed, which acts as a safety net and alerts the controller in case of a runway incursion.

5.4 Comment on the use of any innovative warnings or guards – use of paint, signs, lighting and other lower-cost technologies: All Runway holding positions are marked according to ICAO Annex 14 (including enhanced taxiway 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 airport (including initial training, skill test and periodical refresher). The Safety Office has produced a new Runway Incursion Prevention Movie in 2014 and is organising the next Air OPS Safety Conference at Zurich Airport in January 2015. 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-punalty’ reporting? The Local Runway Safety Team has established a common runway incursion database. Furthermore, a “Runway Safety Report” has been produced to help avoid future runway incursions and to manage runway incursion numbers and effectiveness of measures is published. Additionally, the Runway Incursion Investigation Team investigates every single runway incursion event and interviews involved partner on a voluntary base. New Runway Safety Report will be released in summer 2015.

### 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 Operations. Annual refreshers in bird control. New employees of the Airport Authority attend a basic training.

6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Yes, continuously at least every hour. Outside air traffic hours bird control staff is available on demand.

6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/ manufacturer): For controlling accumulation of birds mainly pyrotechnic means are used. Various others for hunting permitted firearms are used only by the licensed gamekeepers. Lasers have been introduced and used during trials.

6.4 Do you carry out a bird strike risk assessment? Two times a day the Airport Authority makes a bird hunt around the wildlife management. The Ramp Safety Culture Team Zurich raises the issue on a regular 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)? Bird feather identification is made in cooperation with DAVV or the Swiss ornithologic station in Sempach. Gamekeepers have special knowledge.

6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? Yes. We’re collecting bird strike messages from the main carrier Swiss. This enables to identify a bird strike rate per 10’000 movement operated by Swiss. The total evaluation is reported annually to the FOCA.

### 7. CRASH FIRE RESCUE

7.1 Please detail your CFR vehicle inventory stating: vehicle type; chassis (e.g. MAN); axles (4X4, 6X6); capacities (kg/litre and type); year of manufacture: Crash Fire Tender: Ziegler Z B MAN, 5 vehicles, 12,500 L water, 1,500 L extract, 8x8, 2005/2006; MANSK 14-1005 MAN Kronenburg, 8,000 L water, 1,500 L extract, 8x8, 1994; Command Vehicle: Volvo XC90, 4x4, 2006; Skoda Octavia, passenger vehicle, 4x2, 2007.

Fire engine: Scania Voge, 2 vehicles, 5,500 L water, 1,000 L extract, 1,000 kg powder, 90 kg CO2, 6x6, 2003; Scania P420 Rusterholz, 4x2, 2,680 L water, 2007; small one: Mercedes Vito 115CDI, extinguishing vehicle, for multi-storey car park, 400 L water, 1,2 L foam extinguisher, 4x2, 2010.

Others: Mercedes Brântle, pioneer vehicle, 6x6, 1998; Mercedes 1850 L tanker, 4x2.

6.1 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 B MAN, 5 vehicles, 12,500 L water, 1,500 L extract, 8x8, 2005/2006; MANSK 14-1005 MAN Kronenburg, 8,000 L water, 1,500 L extract, 8x8, 1994; Command Vehicle: Volvo XC90, 4x4, 2006; Skoda Octavia, passenger vehicle, 4x2, 2007.

Fire engine: Scania Voge, 2 vehicles, 5,500 L water, 1,000 L extract, 1,000 kg powder, 90 kg CO2, 6x6, 2003; Scania P420 Rusterholz, 4x2, 2,680 L water, 2007; small one: Mercedes Vito 115CDI, extinguishing vehicle, for multi-storey car park, 400 L water, 1,2 L foam extinguisher, 4x2, 2010.

Others: Mercedes Brântle, pioneer vehicle, 6x6, 1998; Mercedes 1850 L tanker, 4x2.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? 60-90 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: Avlimon L50

12.2 Comment on storage capabilities of the chemicals that you use: Storage capacity 900,000 litres 24-hour additional supply guarantee.

12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: In recent years, no solids were used. It may not be disclosed.

12.4 Have you experienced any corrosion problems with de-icers? Some problems with corrosions at vehicles.

12.5 Have you employed any special means to economise on chemical use? Heated aircraft stands at the docks A and B.

12.6 Do you have any other comments on experience with chemicals? No.

12.7 Do you use other chemicals or sand on operations? Yes. De-icing from contractors

13. ICE WARNING SYSTEMS

13.1 State model and number of ice warning systems: Boschung system 2000; 3 sensors per RWY (9 in total), 1 sensor in the landside areas.

13.2 Have you plans to purchase further ice warning systems? No.

13.3 Have you plans to purchase further atmospheric measurement equipment: Yes, Boschung system 2000; 3 sensors per RWY (9 in total), 1 sensor in the landside areas.

14. AIRCRAFT DE-ICING

14.1 Does the airport directly provide aircraft anti/ de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units: No. 14.2 Are you required to have dedicated de-icing positions or do you de-ice on the parking area? Both, dedicated de-icing positions (de-icing pad F and C) and on-stand de-icing.

14.3 Is glycol recovered? If so, please state methods: Yes, glycol is recovered. The material is collected in storage basins for wastewater treatment. On 20 hectares it is treated for biological degradation by micro-organisms of the soil. The high concentrated part is distilled and recycled; the rest as carbon denitrification goes to the Zurich waste water treatment plant.

14.4 Is glycol recovered? If so, please state methods: No, glycol is recovered. The material is collected in storage basins for wastewater treatment. On 20 hectares it is treated for biological degradation by micro-organisms of the soil. The high concentrated part is distilled and recycled; the rest as carbon denitrification goes to the Zurich waste water treatment plant.

14.5 Is de-icing from contractors

14.6 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.

14.7 Is glycol recovered? If so, please state methods: Yes, glycol is recovered. The material is collected in storage basins for wastewater treatment. On 20 hectares it is treated for biological degradation by micro-organisms of the soil. The high concentrated part is distilled and recycled; the rest as carbon denitrification goes to the Zurich waste water treatment plant.

15. FRICTION TESTING

15.1 What model(s) of friction tester do you use? BV-11; 2 units.

1. AIRPORT NAME: Zvartnots Zvartnots International Airport

2. Landing aids for each RWY (e.g. CAT IIIa, CAT II, CAT I): RWY 09; CAT II; RWY 27; CAT II

3. SAFETY MANAGEMENT SYSTEMS

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

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 airframe handling agency personnel. Airline personnel, when feasible, should join the airport staff in daily airside inspections. This practice helps increase familiarity with local airfield conditions, and promotes effective communication between the airport and airlines.

c) Maintenance (use of sweeping, magnetic bars, rumble strips, FOD containers etc): Maintaining control of FOD includes using several methods: Sweeping and FOD containers.

d) Co-ordination of multiple agencies using airport (airlines, handling agents etc): Yes.

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 AFC.

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 ASDEx, 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 in place 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

6.1 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 security assurance is aimed at prevention of bird strike in airport area. Due and qualitative execution of prophylactic (prevention) works for scaring birds. Training of interested candidates for the improvement of their knowledge. Performance elaboration and fulfillment for flight ornithological security improvement in Zvartnots International Airport. Due to the above mentioned policy, bird strikes reduced by 20% each year.

6.2 Do your staff attend recognised bird flight ornithological security assurance training?
control training courses? Yes.
6.2 Are your bird control staff working on the airfield continuously, hourly, less than hourly? Our bird control staff is working on the airfield continuously.
6.3 What specialist equipment do you employ for bird control? (Please state relevant supplier/manufacturer): Bird patrols in vehicles, Bioacoustics Super Bird (helicopter); electronic generators of noise, standard cannons - Zon Mark, pyrotechnics, shooting to scare, netting, hangar rafters, ponds.
6.4 Do you carry out a bird strike risk assessment? Yes.
6.5 Do your staff log all their bird control activities to manage success in dealing with the problem, and to use in defence in case of lawsuits)? Yes.
6.6 Does your airport have problems with other wildlife (deer, for example) and, if so, how are these issues being addressed? No.

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

PART 2: WINTER SERVICES QUESTIONNAIRE
8. RECENT WINTER CONDITIONS
8.1 What is the designated period of winter readiness? From 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: 20cm
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 Varmmas, 3 pieces; Snow plough PM-130, 11 pieces; Snow collector D-902, 1 piece; Snow collector DE-226, 1 piece; Snow plough IAMAZ PM-116, 1 piece; ZIL-4502 liquid chemical reagent machine, 1 piece; ZIL-130 solid chemical reagent machine, 1 piece; Grader, 1 piece; Loader, 1 piece; Dump trucks, 3 pieces; Universal mechanism “Bobcat”, 1 piece (mini loader); Mitsubishi L-200, 1 piece; Gazel (light truck), 1 piece; Nissan (pick-up), 1 piece; Global Ground Support, 3 pieces (de-icing truck); heco Haestra Enbar 2, 2 pieces (de-icing truck); Aerotech Herman Nelson BT 4000-46, 2 pieces (heaters, only external heating).

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, main taxiway; apron; holding bays; other areas by necessity.
11.2 State the vehicles, formations and general method of runway, taxiway and apron clearance:

Snow-cleaning from the RWY is done by patrol method by Scania-Varmmas, 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. Cleaning process can be changed getting out of the wind direction changes.
11.3 After moderate snow, how quickly do you expect to achieve ‘black top’ on the runway? RW snow-cleaning must be done immediately when the snow begins, between take off /landing intervals.

12. EXPERIENCE WITH CHEMICALS
12.1 Which pavement de-icers you use, along with the quantities used last season. Comment on effectiveness of chemicals at low temperatures and achieved holdover times etc: The chemical reagents used last season: Solid: ANS (nearly 12 ton) and Clearway SF3 (nearly 1.4 ton); Liquid: Safeway HA-HOT (nearly 5 ton). The mentioned chemical reagents can be used till -400C temperature, except granular ANS chemical reagent (-120C).
12.2 Comment on storage capabilities of the chemicals that you use: Solid: nearly 52 ton; Liquid: nearly 51 ton.
12.3 Comment on your experience with solid de-icers, for example mixing ratios with liquids, “blow-away factor” etc: Zvartnots Airport doesn’t have such an experience.
12.4 Have you experienced any corrosion problems with de-icers? Zvartnots Airport doesn’t have such problems.
12.5 Have you employed any special means to economise on chemical use? Chemical reagents are used according to norms prescribed quantity.
12.6 Do you have any other comments on experience with chemicals? No.
12.7 Do you use other chemicals or sand on operational areas? It isn’t expedient.

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

14. AIRCRAFT DE-ICING
14.1 Does the airport directly provide aircraft anti/ de-icing operations? If so, please state vehicle or other facility manufacturers, and number of units: No. It does by handling company ‘Zvartnots Handling’.
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.

15. FRICTION TESTING
15.1 What model(s) of friction tester do you use? Skidometer BV-11.

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: Yes. 16.3 Do you currently have equipment or other products on order? If so, please provide details including manufacturer and number of units: Yes.
16.4 DYNASET DWR Prime liquid chemical reagent dispensing special vehicle-equipment – 1 piece.
16.5 MKSS3000 magnetic sweeper – 1 piece.
ZAUGG-SNOWSHARK

Wedge snow plough for rapid and easy snow clearance of runway edge lighting and taxiway edge lighting at airports, airfields and landing strips. Adjustable wedge snow plough with special plough-brush-blower technology for front or rear attachment to the three-point power lift of a tractor or the front lift of a wheel loader. The two plough swivel blades are fitted with plastic plates whose open, optimally concaved blade shape ensures an effective and wide ejection range. The width of the gap between the plough blades is 60cm when snow clearing in the open position. A special cleaning system (brush-blower technology) is used to remove the remaining snow from the lamps. Two adjustable casters on the paved runway or two adjustable guide shoes alongside the runway ensure accurate plough guidance. The ZAUGG-SnowShark wedge snow plough can be equipped with PUR, combi or steel cutting blades. Thanks to a stabilised lateral inclination, the plough adjusts well to uneven ground.

Technical data of KPR-300 ZAUGG-SnowShark
- Clearing width with closed plough: 3,000mm
- Plough opening width: 600mm
- Maximum clearance height above the lighting: 600mm
- Plough height at the centre: 800mm
- Plough height outside: 1,100mm
- Weight, complete including blower: 1,250kg
- Hydraulic drive power requirement, minimal: 60l/min at 180 bar

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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 maintaining 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 for 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 bestsellers on airports worldwide and is also available in a towed version. Various spreaders and de-icers (solid, liquid, solid/liquid) for all purposes, snow blower/cutter, multi-purpose and -functional carriers, 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 Contamination Depth measurement system, the Boschung Group supplies the full range of equipment needed for a safe, cost-effective and ecological maintenance of various working surfaces from a single source – perfectly demonstrating its ‘Surface Condition Management’ (SCM) philosophy.

PROVIRON DE-ICERS VERY POPULAR IN EUROPE

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 liquid and solid form. In 2013 Proviron entered the aircraft de/anti-icing market. Proviron teamed up with its long-term business partner Cryotech (USA), a world leader in de-icing technology, to manufacture Cryotech’s products in Europe. Cryotech products are very popular in the US and the Cryotech brand is held in high esteem. Proviron manufactures Type I, II and IV fluids. All fluids fully comply with the latest SAE AMS requirements and are FAA approved/listed.

The decision for Proviron to enter this new market was to some extent customer driven. In recent years winter demand for de-icers in Europe has risen to record levels, due to the air traffic growth and to winters being more extreme, whereas the limited number of de-icer manufacturers in Europe remained static. The market introduction went much faster than expected by Proviron. The products have been very well received by airlines, ground handling companies and airports all over Europe. Customer feedback has been extremely positive, especially with regards to shear/storage stability and superb sprayability. The European aviation industry has clearly approved and accepted the Cryotech products and the popularity of the products keeps on growing. By adding aircraft de/anti-icing products to its already successful range of runway de-icing products, Proviron has strengthened its position as one of the leading companies in the de-icing industry.

Proviron manufactures Type I, II and IV fluids. All fluids fully comply with the latest SAE AMS requirements and are FAA approved/listed.
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- Cryotech Polar Guard® II  
  Type II
- Cryotech Polar Guard® Advance  
  Type IV

**Runway & commercial de-/anti-icers:**
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  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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