Communication and coordination are key to a successful winter season

Nicky Cooper, Head of Network Operations Management, EUROCONTROL

INDUSTRY ROUNDTABLE: Successful operation lies in preparation
With contributions from Vestergaard Company A/S, Kilfrost and Aebi Schmidt

Riga: Prepared for the winter season
Dzintra Jātniece, Director – Airfield Management Department, Riga Airport

Keeping Norway open
Terje Selnes, Senior Advisor – Ground Services, Avinor HK

UNRIVALLED SPEAKER LINE-UP INCLUDES:

- Philip Baum, Editor, Aviation Security International
- Kate Staples, General Counsel, CAA UK
- Maurice Jenkins, Divisional Director for Information Systems, Miami International Airport
- Marc Pearl, President and CEO, Homeland Security Defense Business Council
- Neville Hay, Detective Sergeant, Sussex Police UK
- Ahmed Al Haddabi, Chief Operating Officer, Abu Dhabi Airports
- Johnnie Müller, Head of Security, Copenhagen International Airport
- Jayne Maisey, Head of Regulation, Policy & Practice, Birmingham International Airport
- Bart Mos, Corporate Security Adviser, Schiphol Group
- Dominic Nessi, Deputy Executive Director & Chief Information Officer, Los Angeles World Airports
- David Pendlebury, Group Security Strategy Manager, Manchester Airport
- Dvir Rubinshtein, Aviation Security Operation Centre Manager, Security Department, Ministry of Transport, State of Israel
- Chris Woodroffe, Head of Security, Gatwick Airport

KEY TOPICS INCLUDE:

- Working Towards a Risk Based Approach to Airport Security
- Latest Innovations in Passenger Screening
- Improving the Passenger Experience of Security and Border Control
- Cutting Edge Technology – The Advanced Role of Video Analytics, CCTV Cameras, and Biometric Access Control Systems
- Addressing the Growing Threat of Cyber Security
- Countering Terrorism: Addressing the Latest Threats
- Ensuring that Business Continuity and Crisis Plans are Robust
- The Latest Innovations in Cargo Screening
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Communication and coordination are key to a successful winter season

Nicky Cooper
Head of Network Operations Management, EUROCONTROL

Winter usually brings severe weather with it, which can be disruptive for individual airports and the network as a whole, but experience shows us that improved pre-planning and more communication help considerably.

The Network Manager (NM) has an overall view of the European air traffic situation, but when weather moves quickly, as it does in winter, it helps everyone if airports keep in constant contact with the NM. We can then share information, allowing everyone to make the right decisions at the right time. The more precise, timely data that we have, the better the service we can provide.

Sharing information
Naturally, we at NM will also communicate as much as we can, and during times of bad weather, we endeavour to update the NOP Portal more frequently than usual. We also hold regular teleconferences. By talking to each other, we can find out what the capacity levels are and which diversionary capabilities exist – and this supports operational decision-making processes, helping airlines decide on flight cancellations, for instance.

Useful tools
The Weather Assessment tool on the NOP Portal is a useful feature, allowing users to see what kind of weather is expected. Another useful tool is the digital SNOWTAM.

The SNOWTAM gives clear, accurate and easy-to-understand information about runway contamination with snow and ice, using a graphical display in the form of an overview map. The digital application presents SNOWTAM as an Airport Overview map, providing the contamination status of airports in Europe.

The digital SNOWTAM Pilot Application is available free of charge to any airline operational centres and other airspace users.

What NM does to help
Aside from these tools, the NOP makes constant updates and holds teleconferences. We also:
- Plan diversions to airports that are operating normally
- Prevent flights from departing to affected airports
- Plan and implement recovery measures
- Provide updates as the weather evolves.

Another service that we are improving is the Ski Axis. This is a coordination process for flights in the winter ski season, running from mid-December to mid-April. Coordination meetings begin as early as November, and a debrief is held in May. It involves the Network Manager Operations Centre (NMOC), air navigation service providers, aircraft operators and flow management positions at airports and airlines; they share their operational experiences and give the latest updates – all of which are then published on the NOP Portal.

NMOC also maintains close contact with airfields at ski resorts. They tend to be rather small, with limited capacity, and sometimes find it a struggle to accommodate all the demand. Obviously, they are particularly vulnerable to winter weather – and bad weather can reduce their capacity still further. So, we keep a close watch on the diversionary capacity of their neighbours.

Out of Area traffic is another aspect that can impact on winter operations: ski traffic from Russia grows each year. We do not usually have flight information from Russia – and this has proved to be an issue in the past. But we have now set up communication channels with airports in Minsk and Moscow, which send us Departure Message Information for their westbound flights. This has helped us plan flows more easily.

The essentials: communication and coordination
Anticipation helps, but good communication and coordination are vital when the network is disrupted by severe weather. The Network Manager undertakes to do all it can to improve its interaction with all stakeholders – but it needs input too.

Let’s not get caught drifting in the next snowfall!

References
1. www.eurocontrol.int/products/digital-snowtam
2. The SNOWTAM Pilot Application is available by contacting aim@eurocontrol.int

Biography
Nicky Cooper completed a short service in the RAF before joining the CAA, now known as NATS and was Heathrow Controller for 12 years, also working within operations. Following this, Nicky became the General Manager at Farnborough Airport during the redevelopment, after which she was Head of Operations at Hum. Nicky then worked at Swanwick for a year and returned to the airport side of business as General Manager at Bristol. She finished her last four years at NATS as an Operations Manager at Swanwick ACC. Her present position is Head of Network Operations Management Division at EUROCONTROL with departments dedicated to Safety, Airports, Airspace Planning, EAD and Operations.

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Successful operation lies in preparation

Winter operations are crucial to ensure the safety and efficiency of airport procedures, but the operations are only as effective as the technology and products being used. Nicky Cooper, Head of Network Operations Management at EUROCONTROL, sat down with some of the industry’s leading winter equipment suppliers to see how they are helping airports this season.

Nicky Cooper: What have you done (differently) to help your customers prepare better for the 2012/13 winter season?

Lars Barsøe: Over the last 50 years Vestergaard Company A/S has made every effort to meet customers’ needs by ensuring that new technology is incorporated with the state-of-the-art equipment that we provide to our customers. Our equipment is designed to operate in their environment efficiently, reliably, and safely.

Quality and functionality are Vestergaard’s primary objectives. Product quality must ensure a durable, stable and reliable operation. Functionality provides efficient operation with regard to both economic and environmental aspects. We continuously improve our products and our engineering department prides itself on offering support to our customers.

In recent years at Vestergaard we have seen a high demand for de-icers, and in terms of timing, this has not always allowed us the necessary time to build new trucks. We build a number of trucks of different sizes ready for sale with short lead-time and we have invested in second-hand de-icers, which can be made available to customers with short notice.

The second-hand market for our equipment has not been, and is not, Vestergaard’s primary focus, but having a selection of previously owned units available can really make a difference for airports/operators in a tight spot before the winter season.

Also worth mentioning, although not new, is the Data Transmission System (DTS). De-icing operators with a certain sized fleet can achieve significant benefits with DTS, as this allows for more optimal tasking of the de-icers. The DTS eases the data feedback from the de-icer trucks after their operations, with fluid consumption, time and other data, making invoicing a much simpler task, and with a significant reduction in communication errors.

Mike Moore: At Aebi Schmidt, our Customer Service Department has been proactively contacting customers with a view to ensuring all their kit is serviced, calibrated and that they have ordered wear parts (such as brushes) so that they are fully covered for the coming season and prepared for the winter weather. All our customers benefit from 24/7 support from our trained airport engineers – we understand this is emergency equipment and we need to provide a full and comprehensive service at all times.

Gary Lydiate: For Kilfrost, preparing for each winter begins in the summer. We’re constantly monitoring very broad trends for the tell-tale signs that indicate whether we’re in for a tough
winter – which we like – or not. Indicators include ocean temperatures, temperatures over the poles and other very broad factors which may have long-term implications for global weather conditions. As winter approaches and the forecasts become more detailed we adjust our plans to ensure that a) we are producing enough product to supply our customers and b) that the product is arriving on time and on specification in the right regions. Some of our European supply lines are four or five days; in North America some considerably longer so we have to take those considerations into account.

In terms of logistics, the build-up also begins a long way out. We make sure our stores of glycol – the primary ingredient in de/anti-icing fluid – are at capacity and that our customers are prepared for early and unexpected cold snaps. Because we’re a global company supplying airlines and airports in 63 countries we’re always busy by about mid-October.

Previous experience just helps us hone our operation even more to ensure that our supply network is as robust and prepared as it’s possible to be.

NC: Winter operations incorporate many different elements, such as ice and snow build-up. What do you find the most challenging for your products?

MM: To clear ice once it has already formed is a lengthier process, which involves treatment with the correct material (solids) in order to start the melting process, then, once that starts to work the towed jet sweepers or compact jet sweepers do their work. The plough clears the melted ice, the brush clears away anything left behind and the blower takes the surface to a point where liquid de-icing can then take place.

LB: Vestergaard’s equipment is built specifically for ice and snow build-up so these elements do not cause challenges as such, but we do make an effort to help adapt the customer’s procedures into new technology and to enhance training programmes, for example by offering our PC-based de-icing simulator for training.

Due to state-of-the-art quality, the Vestergaard units spend less time being repaired and more time on doing the job they are meant for. The precise and fast manoeuvrability of Vestergaard’s compact and large de-icers gets the jobs done at a higher speed, which enables aircraft to get off the ground faster.

GL: Simply by its nature, getting rid of ice that’s already formed provides the greatest challenge, but that’s a challenge faced by all manufacturers.

NC: Health and safety is important within operations. How do your products adhere to these regulations?

GL: Safety is absolutely critical, no question. Kilfrost has developed a robust quality control protocol to ensure that all our products leave the processing plant on specification and to ASTM and ISO standards. We also work with all our customers on product handling and make sure it is tested at every step from the tanker to application to ensure the product’s quality and performance hasn’t been compromised. Each season we distribute a best practice guide to our clients on the performance, use, and fluid testing...
of all our products. We also have a dedicated technical support team to help clients use our product safely and effectively.

LB: All Vestergaard products adhere to all the standards of the industry and the European Machinery Directive, which include very specific articles of health and safety. Vestergaard’s daily business operations are conducted in ways that aim to minimise the environmental impact of our products. Manufacturing processes are utilised to reduce the use of raw materials. We also focus intensely on health and safety, both during production and when the products are being used – we focus on the health and safety features on the unit to ensure that operators of the vehicles are safe when working on and around the unit.

Our product design incorporates technologies that reduce energy consumption and the use of resources over the product’s life cycle. At the same time Vestergaard makes sure that every unit is only being delivered and released to the customer after having been thoroughly quality control tested.

MM: As a manufacturer, Aebi Schmidt has to conform to all Health and Safety regulations pertaining to this type of equipment, including areas such as access and egress and emergency stop functions. We build our machines to the highest of safety standards to ensure maximum safety for the operators whilst maintaining optimum snow and ice clearing capabilities.

NC: What do you feel is the most important aspect of an airport’s winter operation process?

MM: The most important part of an airport’s winter operation process from Aebi Schmidt’s perspective is the winter operations plan and the decision making process. Having the best equipment with the highest levels of reliability, operated by trained staff is also vital. Of course practice makes perfect so ‘dry’ runs pre-season should always be in place. It’s important to remember that the Winter Ops plan is constantly evolving with new, more efficient machines, changing weather patterns and amendments to operating requirements.

LB: From Vestergaard’s point of view, coordination between the various groups in an airport is the most important aspect of the winter operation processes. It is obvious that where all the various aspects of winter operations are coordinated centrally, things run much more smoothly, even when winter hits. Having the set-up evaluated by a third-party at regular intervals could mean valuable input to procedures, competency levels, training, and the most optimum equipment for the operation.

GL: Preparedness is the most important aspect for airports. Long range weather forecasts are gaining accuracy all the time and technologically, we’re at a point where the fluids can cope with most weather conditions. If airports and airlines keep us up-to-date with their needs and have ordered enough stock early enough there should be no problem from a de/anti-icing point of view. Every year, though, you’d be surprised how, as winter approaches, some airlines just aren’t ready for what’s on the way.

Biographies

Gary Lydiate is the CEO of Kilfrost, which was established more than 80 years ago to produce de/anti-icing products for the transport industry. Gary works closely with the customer base which stretches globally and includes KLM, JAL, American Airlines, Lufthansa and most major airports. Prior to his present role, Gary worked for BAE Systems where he was Head of Communications with a remit covering Nimrod, Typhoon, Hawk, Joint Strike Fighter and UAVs.

Mike Moore joined Aebi Schmidt in February 2000. He has held various roles within the group over the years, including a two-year spell in Germany within the Holding part of the Aebi Schmidt Organisation, working as a Product Manager for Sweepers. Mike project managed several key orders for organisations such as the Ministry of Defence, Highways Agency larger airports and Balfour Beatty. In January 2011, Mike took on responsibility for all UK civilian airports and major contractors.

Lars Barsøe is Sales Manager at Vestergaard and has been with the company for four years. He has over 25 years of sales and consultancy experience, living and working in all parts of the world. He has always worked with technical and complex products.
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» Reduced fuel consumption
» Reduced CO₂ emissions
Riga International Airport (RIX), situated in Latvia’s capital city, is the busiest aviation hub in the Baltic states, welcoming 5.1 million passengers in 2011. The airport operates one Code 4E runway but only recently it has started to operate at the design capacity – since April 2012 the airport has been handling regular (up to seven times per week) cargo traffic performed by Boeing 747 aircraft, demanding extra commitment, particularly in the winter season. In the past, Code E aircraft used to visit the airport only three-five times per year.

Effective winter operations, particularly in a region where the winter period can span six months, are crucial. RIX works hard to ensure the safe take-off and landing of aircraft so as to avoid such drastic decisions as a runway closure. In the winter of 2011, heavy snowfall and storms paralysed traffic in many European airports, resulting in numerous cancellations and delays. At Riga International Airport, in the period from 10-26 December 2011 only 21 flights (0.6 per cent of the total traffic) were cancelled, and from 27 December 2011 – 2 January 2012, only one flight was cancelled due to the local weather conditions.

During intense snowfall, close cooperation with air traffic control (ATC) is essential. While light snowfall allows for quick patrol-type snow clearing runs in between the aircraft movements on the runway with almost no interruptions, heavy snowfall requires at least 15 minutes of continuous sweeping, providing 10-15 minutes for aircraft operations. And cycles like this
sometimes repeat for hours. To ensure we have the 15 minutes that are necessary for clearing, ATC is given timely warning so that inbound flights can be slowed down and grouped well in advance; therefore avoiding the need for flights to be diverted to alternate aerodromes.

**Organisation of work**

In Riga the winter season begins in late-October and lasts until around mid-April. Seasonal work is performed by the staff of the Airfield Management Department according to a snow plan setting forth the priorities of clearance and the sequence of works. The shifts run around the clock with two aerodrome engineers and 13 aerodrome-specialised vehicle drivers per shift. One aerodrome duty engineer and six drivers of specialised vehicles are in charge of the manoeuvring area; the other engineer and seven drivers are engaged in the snow clearance from the apron, service roads and equipment storage areas. The aerodrome Duty Manager starts every day with a short staff briefing regarding the weather conditions, the flight plan and restrictions imposed on the aerodrome.

**Committed and qualified specialists**

Committed, qualified and consistent personnel are the key factor in successful functioning of the airport in winter. Throughout the winter staff are routinely clearing snow and ice to ensure flight regularity and that passengers are able to arrive at their destinations safely. To this end, prior to the winter season each year, seminars are arranged for the winter staff to refresh the operational procedures. The best employee is an educated employee, and to prepare for the last winter season, a Boschung company representative was invited to deliver a recurrent training course to airport personnel. Judging from the positive feedback we received from the staff, this practice will continue in the future.

**Technical equipment**

Riga International Airport operates six Boschung Jetbroom vehicles for snow clearance from the runway and taxiways. Two of the vehicles are
fitted with an 8.4m-wide snow plough, and the others have 6m ploughs. All the vehicles are also fitted with 6m metal bristle-brooms and cold air blowers, enhancing runway clearance in dry snow conditions. Each vehicle is managed by nine different software programs. There have been periods, of even up to a week, when these vehicles have had to operate for nearly 24 hours a day, as the runway must be kept immaculately clean. During heavy snowfall the sweeper team moves at about 35km per hour; its maximum speed is 60km per hour.

Great assistance in runway clearance is provided by a snow blower Øveraasen UTV630, purchased in 2011, which is fitted on a heavy wheel loader. It can reach speeds of 30km per hour, and a capacity of 5,000 tonnes of snow per hour, capable of clearing both runway edges in just 20 minutes. Up until last winter, RIX used a 40-year-old snow blower which moved at 8km per hour. RIX researched the market for a suitable snow blower for years – the market ranges from humongous self-propelled vehicles to small attachable snow blowers – but we finally settled on a high-capacity attachable snow blower and we’re confident we made the correct decision. The heavy snow of December 2012 has already proven Øveraasen to be a reliable addition to the snow team equipment.

Apart from the previously mentioned machines, the aprons are cleared by three Soviet era universal sweepers MoAZ DE224, six tractors of various brands – all with two-blade ploughs and plastic brooms – and another heavy wheel loader that can be fitted with either a multi-blade plough or a snow bucket for snow removal out of the aerodrome.

**Aircraft de-icing**

Aircraft de-icing services at Riga International Airport are provided by three independent companies. At present the aircraft are treated with de-icing fluids on the aprons. However, when the aerodrome reconstruction is completed in time for the 2014/15 season, de-icing of aircraft will take place on special pads at both ends of the runway.

**Biography**

Dzintra Jātniecė has worked within the aviation industry for 29 years. She started her career at Riga Airport’s information bureau and has also held positions as an Airport Dispatcher and the Deputy Director of the Ground Handling Department. For the last five years, Dzintra has held the position of Director of the Airfield Management Department. Dzintra holds a degree in business management. In 2009 she obtained the ACI Global Safety Network Diploma and she currently continues her studies at the Eurocontrol Institute of Air Navigation Services.
Avinor owns and operates 46 airports in Norway, 21 of which are located north of the Arctic Circle, where winter conditions can be experienced for up to seven months a year. Most airports are located along the coast, where the Gulf Stream keeps the climate relatively mild, and at these airports the weather can be really challenging with temperatures fluctuating around the freezing point at 0°C.

Norwegian airports experience all combinations of weather – from rain to snow, slush, freezing rain and frost. Avinor also operates some airports which are located inland where the temperature can drop to as low as -40°C. Similar temperatures can also be experienced at Svalbard airport, which is located in the archipelago of Svalbard.

Twenty-six of the airports are ‘small’, with runways of 8-1,200 meters and Oslo is the main airport in Norway, but all experience great climatic challenges.

Operating these airports under different and often challenging conditions requires detailed and accurate planning, efficient and proper equipment for winter maintenance and last but certainly not least, well-functioning, organised professionals at the Head Office and at each airport.

Each airport prepares a winter maintenance plan, which the airlines operating at the airports are also involved in. The winter maintenance plan is evaluated after each winter season to identify improvements in the plan for next winter.

Snow removal equipment is well matched to each airport with a view to encounter the different weather conditions that can occur at that location during the winter season. The equipment is also adapted to the number of employees that, at any given time, are on duty within the airports.

Avinor is dedicated to providing good information and training to the operational staff
at each airport, to ensure they can confidently and safely perform their tasks. Therefore, Avinor has developed an advanced winter operations training programme with multiple modules adaptable for the various levels of staff operating at the airports. The main focus of the winter programme is the training of operational staff to carry out snow-clearing and runway inspections in a consistent and efficient manner.

The focus areas in the training programme range from meteorology, environment and operative limitations, to ploughing schedules and the use of the equipment at each airport. In particular, operational staff are provided with thorough training in understanding friction, and how to act to achieve the best possible runway treatment with respect to utilising chemicals and sand. As an example, personnel who send the runway report (SNOWTAM) must have at least four years’ practical experience in winter maintenance in addition to completing the mandatory training programme, which certifies the person to be allowed to perform this task.

For employees, participating in the winter operations training programme is mandatory, and the team at Avinor’s main training centre also keeps track of when the staff need to participate in a repeated training course to ensure a continuation of their license to operate in winter conditions at the airports.

Ahead of each winter season, operational staff must have read and understood the winter maintenance plan and overhauled the winter maintenance equipment, etc. The main objective of the training, evaluation and review before each winter is to ensure Avinor’s highly skilled employees are prepared to operate the airports with a high level of availability throughout the winter season. The goal is to increase safety by keeping the runway ‘black’ even during extreme winter conditions and to achieve the best possible friction, which, in turn, ensures reliability and punctuality.

For the past 10 years, Avinor has been conducting extensive research to get a better understanding of the complex mechanisms and predicting runway friction levels during snow and ice affected seasons. The purpose of this research has been to find a more efficient and accurate calculation method other than using the traditional friction measuring equipment. This work has resulted in the Integrated Runway Information System (IRIS).

The system presents weather and runway information in a structured and adapted format that is easy for Avinor’s operational staff to interpret. The system is a support tool for estimating runway friction and provides warnings of when weather conditions are about to change and thus cause slippery runways. Avinor’s airports were the first in the world to adopt the Automatic Notification and Reporting of Runway Conditions (AVRB) reporting tool, which transmits runway reports directly from runway to the tower, pilots and other interested parties.

**Terje Selnes** qualified as an engineer in aerospace and automobile engineering in 1970. He began working in aviation in 1991 as the Airport Manager at Narvik Airport. In 1996 he took the role of Head of the Airport Service Department at Avinor HK and became Head of the Heavy Vehicles Department at OSLO/Avinor in 2004. Since 2011, he has been Senior Advisor — Ground Services at Avinor HK.