

Conversations

Airport-Collaborative Decision Making roundtable:

On 12 January 2012, the Met Office hosted the third in a series of conversations under Chatham House Rule to get key influencers talking about shared issues. The roundtable on delivering a step change in Airport-Collaborative Decision Making (A-CDM) is summarised below, under topic headlines phrased as questions. Each section ends with an outcome.





What are the benefits of A-CDM?

To set the scene, the group heard about the Heathrow Winter Resilience Enquiry that was commissioned by BAA following the heavy snowfall in December 2010 – the coldest December for 100 years – which led to 4,000 flight cancellations over five days in the run up to Christmas. While conditions during the month were unusual – on 18 December, 7 cm of snow fell in one hour at Heathrow – it was a question of when, not if, it happened again so it was important that the airport was well prepared. Work carried out since then to improve procedures at Heathrow fell into three main categories: snow planning and preparation; crisis management command and control; and passenger welfare and information.

A collaborative approach had been the focus of much of the work at Heathrow over the past twelve months and was felt to be the key to making any airport more resilient. This was because an airport simply cannot function properly without the active engagement of all the agents that operate out of it such as airlines, ground handlers, NATS and the Civil Aviation Authority (CAA). Smooth and efficient operations also depended on sharing information from third parties, like the Met Office and the Metropolitan Police, with the right people at the right time.

Improving resilience at Heathrow had involved lots of different activity, such as computer-based simulations and real-life practise drills as well as anticipating flow-rate restrictions in bad weather and devising a snow plan which included clearance priorities and protocols for stands, taxiways and runways. Measures outlined in the snow plan had been peer-reviewed by 30 airports around the world as well as David Quarmby who headed the Government's Winter Resilience Review.

New equipment such as snow ploughs had been acquired and their drivers trained, while a large volume of de-icing fluid was now stored within two miles of the airport. Improved A-CDM software also provided real-time moving images of the airfield, while a simplified Gold, Silver, Bronze command structure had been reinstated. Importantly, the airport had drawn up a Passenger Charter to define what passengers can expect in times of crisis and had trained 950 back office staff for 'front of house' roles when required. All in all, Heathrow was more resilient than it was a year ago but wanted to make sure it continued to improve.

Other airports that had implemented A-CDM were also seeing benefits – a 30% decrease in waiting times at Munich, and a 10–20% increase in capacity at Schiphol. A-CDM was also a helpful tool in managing de-icing, which could prove more problematic and costly than clearing snow.

While capacity was currently not a problem at Birmingham, the airport was preparing to introduce A-CDM in three to four years' time when it anticipated capacity may be an issue. It was also taking steps to ensure all agents operated from a single, shared reality and had introduced an Airport Operating Database that had already proved beneficial. Meanwhile EUROCONTROL, which already worked to mitigate problems well in advance, had begun to look at issues such as volcanic ash and strike action that had knock-on effects across the entire network.

Outcome: The group acknowledged the importance of all agents sharing information to achieve a common situational awareness, particularly in times of crisis. Of equal priority was getting consistent information out to passengers. In future, when the weather takes a turn for the worse, it was important to avoid airports saying one thing, airlines saying another, the police issuing their own travel advice and the media reporting something else. A-CDM could bring real advantages in these areas and would be of ultimate benefit when all airports, airlines, NATS and EUROCONTROL were linked into the same system – nationwide, Europe-wide or even worldwide – through SESAR or, perhaps, SWIM.





What are the barriers to more extensive A-CDM?

The disruption at Heathrow in December 2010 was exacerbated by problems across the road and rail networks that link to the airport. Although these too had been caused by the severe weather, infrastructure issues were a general, ongoing concern as they were outside an airport's control and could not be factored into A-CDM; particularly when unusual weather or unforeseen circumstances meant that pilots, ground handlers, fuellers and check-in staff were unable to get to the airport.

As events in December 2010 also proved, passengers will go against police advice not to travel unless absolutely necessary in bad weather because they have to reach the airport in order to claim on their insurance. Foreign travellers will also turn up on the off-chance they will be able to fly home, especially over the Christmas period. Often, they speak little or no English, so may not have understood the latest travel advice given. Following the Begg Report, the Association of British Insurers was less strict on the procedure for submitting travel insurance claims, but there were calls for tougher legislation from the Department for Transport.

Overall, it was agreed that A-CDM could have real benefits in terms of safety, efficiency and cost savings across the aviation industry but this required more than sharing information. To be successful, A-CDM was as much about people and their behaviours as improved processes; particularly honesty and being open about bad news.

At Charles de Gaulle and some other international airports, for example, ground handlers employed by the airlines were responsible for clearing the stands of snow while the airport itself was responsible for clearing the taxiways and runways. While this arrangement worked well for airlines based at their home airport, it was much more challenging for visiting aircraft particularly in heavy snow when multiple airlines needed their stands cleared at the same time. In a spirit of openness and cooperation, Heathrow had been liaising with airlines to try and find a workable solution in these circumstances, such as having volunteer ground-handlers on standby. Some contractors were unlikely to want to sign-up to A-CDM in the first place because, while it had the potential to eradicate de-icing delays for some airlines for example, it would minimise the amount of de-icing demand and cause de-icing contractors to lose money.

While there was also agreement that the local success of A-CDM therefore depended on airports driving its implementation and use, the cost of doing so was likely to be passed on to customers and this was difficult to justify in the current economic climate. More so because it would not be immediately obvious to passengers how A-CDM had improved airport operations – a more efficient security queue or one-minute off the flight time were not strong enough incentives for passengers to pay more. Neither were punctual arrivals as most travellers were more concerned about their flight getting away on time.

It was recognised, however, that A-CDM could really facilitate the efficient running of an airport by helping to avoid stacking and improving flow-rate as part of the Land and Airspace Management Programme. However, A-CDM systems must be completely ready before they were switched on and should remain on, to avoid confusion and the wasted expense of training airport staff on the new procedures.

Once everyone had an A-CDM system in place – at the moment airports used very disparate systems – the next stage was to get international airports talking to one another and sharing data in real-time.

Outcome: Top-down leadership was needed locally before A-CDM could be implemented as it required the buy-in of all airport staff (operations, IT, HR, commercial, procurement etc.), agents (airlines, ground handlers, NATS, CAA etc.) and third parties (Met Office, Metropolitan Police etc.). Airports would also have to see compelling cost analyses and demonstrable benefits of A-CDM before they followed Heathrow's example.





Is weather information utilised fully? How can it be integrated into A-CDM?

As full capacity had already been reached in many areas of aviation, the group acknowledged that the best way to improve resilience was to stay one step ahead of the weather. At Heathrow, for example, forecasters from the Met Office were working out of the air traffic control (ATC) tower and the airport felt it had really benefited from having around the clock advice on the ever-changing conditions.

While snow, ice, fog, strong winds and wind shear all had impacts on the ground, thunderstorms were the biggest meteorological threat to aircraft in flight, so much so that pilots were often unwilling to take-off when a weather front passed over the airport. Here, the group agreed it would be helpful to see the information used by ATC and pilots so that a common situational awareness could be achieved and, perhaps, thresholds agreed in which aircraft were dispatched.

However, embedded forecasters cost the customer more at a time when the Met Office faced increasing pressure to reduce the cost of its services. The reintroduction of 24-hour forecasting from the control tower began at Schiphol during a period of very bad weather and had been replicated at Frankfurt and then Heathrow. Tight-capacity airports like these made the case for embedded forecasters. However, increased levels of service could be provided from the Met Office's Operations Centre in Exeter — forecast accuracy was improving all the time and new technology meant that ensemble modelling and probabilistic forecasts were now possible that provided greater confidence in certain weather occurring. The highly specialised team at the Met Office also shared knowledge and experience of the aviation industry and made decisions together, while individual forecasters visited airports regularly to carry out aerodrome inspections and gain valuable local experience.

At the moment though most airports still waited for the weather to arrive before taking action, instead of acting on the forecast, because of the huge financial penalties imposed by the EU for cancelled flights. Several airports were, however, now factoring climate change advice from the Met Office into their longer term plans. While the length of winter and therefore the period in which snow may occur were projected to decrease in future, climate change may bring other severe weather more often to the UK and other parts of the world for which the aviation industry needed to be prepared. When it came to the impacts of climate change, the Met Office was keen to start more conversations across the aviation community.

The Met Office had also recently joined 12 other agencies to form the Natural Hazard Partnership (NHP) to better coordinate the advice provided to Government on natural hazards and inform the nation's response to these events. For example, Met Office meteorologists were currently working closely with hydrologists from the Environment Agency and benefiting from their knowledge on flood catchment areas and river flow-rates. Similarly, the NHP was combining the expertise of the Met Office and the British Geological Society on volcanic eruptions and the movement of ash clouds. This work should avoid guidance being issued in isolation in future during a significant event and make sure that advice given to the public was as joined-up as possible — coordinated from the Hazard Centre, based at the Met Office in Exeter.

Outcome: The group recognised the benefits of the aviation community joining the NHP to look at ways of making weather warnings more useful to airports. In time, and with the input of EUROCONTROL, the Hazard Centre could even have a European reach.





What tools are needed to deliver consistent communications across the aviation industry to ensure effective A-CDM?



During periods of reduced capacity at Heathrow the HADACAB group is convened to ensure that the consequences are shared more equally among home and visiting airlines, instead of the home airline bearing the brunt of the cut. But all airlines are liable to fines under EU261, so it was very difficult to decide which flights got delayed or diverted. Also, passengers could not see why it was them who were affected, particularly if neighbouring flights had landed on schedule, making for difficult customer relations. For example, Heathrow's liability would have been in the region of £25 million if it'd had to compensate everyone affected by the snow in December 2010. There were calls around the table for the EU and UK Government to impose fewer financial penalties on airlines when circumstances were exceptional.

Here, communication was key. To avoid HADACAB being instigated, Heathrow held a teleconference every six hours to revise the flow-rate and decide whether flights should be landed on departure runways etc. so that all agents worked to the same plan. Advanced warnings were also issued via this method of snow in the UK, cross-winds at Schiphol, or fog in Frankfurt, for example. At Birmingham, the main communication challenge behind A-CDM was getting information out to the people who drive the de-icers and clear the stands of snow. The airport was still working on the question of how to get 6,500 operators to buy into a single reality.



Outcome: The group agreed that it was the employer's responsibility to make sure external contractors received the same level of information as others at the airport to ensure effective A-CDM.



