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Session 5: The Impact of Technological Development
Speech by David McMillan, Director General of EUROCONTROL

Introduction

Ladies and Gentlemen, Dear Colleagues,

Good morning.

I am very pleased to be here at this ARC Biennial Conference to discuss Air Traffic Management and its impact on the environment in airport regions.

Over recent years, aviation has climbed to the very top of the global environmental agenda. It has largely done this through the CO₂ emission / climate change debate; the Copenhagen climate conference is now just days away.

Before I start, I should give you a very short introduction to EUROCONTROL – the European Organisation for the Safety of Air Navigation. Founded in 1960, we will celebrate our fiftieth birthday next year, as a public service, civil-military organisation now operating with the explicit aim of *‘establishing a uniform European Air Traffic Management system’*.

We work in very close coordination with our 38 Member States as well as with our stakeholders: the European Institutions and international organisations, but also with airspace users, air navigation service providers and airport operators.

Stakeholder relations are playing an increasingly important role to ensure users of the aviation system are consulted at all stages of the Agency’s decision-making process.

These are clearly difficult times for the aviation industry and everyone is feeling the pressure: airlines, air navigation service providers and airports.

Traffic this year will have fallen by about 6% from a peak of 10 million flights. Airport operators have seen 100 million passengers disappear from the system. With such economic difficulties comes the real risk that key investment could be curtailed. Indeed, we have indications that investment programmes are already being put on hold.

Of course, there is always a silver lining to every cloud and Air Traffic Flow Management delays decreased as well: the average en-route delay per flight in October was just within our target of 1 minute per flight.

Our own forecasters at EUROCONTROL anticipate a weak to modest recovery in traffic growth over the medium-term. By 2012, we think that traffic should be back to where it was last year. Whether the industry – at least in Europe – will return to traffic growth of 4 to 5% is, frankly, a known “unknown”.

More than anything, these difficult economic times underscore the importance of joint action and investment by all people involved in the aviation value chain in order to build a sustainable aviation system.

I: Airports, Air Traffic Management and the Environment

Airports are, of course, the key entry and exit points to this aviation system. Their importance has clearly been recognised by the second Single Sky Package and establishment of the EU Observatory on Airport Capacity.

I am very happy to see ARC play an instrumental role in this Observatory and I am confident that its expertise as an interface between air transport and local and regional policies will pay dividends.

Long before the current debate about aviation and climate change, questions about aviation's impact on the environment focussed on noise and air quality issues in the vicinity of airports. As entry and exit points to the system, airports have long had to deal with their environmental impact on surrounding regions.

Indeed, at airports, more than almost any point in the aviation system, it is crucial to find a good balance between societal, environmental and economic imperatives.

Through a survey of the capacity plans at 138 airports, EUROCONTROL's Challenges of Growth 2008 report was the third in a series of studies to provide decision makers with an up-to-date assessment of the growth challenges faced by the aviation system.

It concluded that under the most likely forecast scenario, airport capacity will lag demand by some 2.3 million flights by 2030, even if current expansion plans can be delivered.

Demand concentrates geographically and over time on large airports and airport systems. Although secondary airports provide some relief, they may not be where passengers want to go and demand may return to the main hubs in spite of congestion there.

This compounds the environmental question: the greater the capacity shortfall, the greater the rise of environmental impact – both at an overall systems level and at a local level – with flights waiting to take-off, using suboptimal flight profiles, circling before landing and waiting for arrival gates to become available.

If nothing is done, there could be another 30 Heathrows in Europe by 2030!

This is where well organised air traffic flow and capacity management is crucial.

Our Central Flow Management Unit organises this process across Europe, working closely with national authorities and air navigation service providers to organise the flow of traffic across our skies and into and out of our airports. Increasingly, airports are being brought into this process through the sharing of real-time operational data.

This allows us, for example, to hold an aircraft at the gate, with its engines switched off rather than have it hold either on the taxiway system (generating noise and emissions) or holding in the air before approach, burning fuel and releasing emissions.

The air traffic flow and capacity management process, co-ordinated through EUROCONTROL, adds real value, since it identifies what is best for the network.

The key to getting the airport data into this process is Collaborative Decision Making, which we are strongly encouraging airport operational stakeholders to implement.

However, an Air Traffic Management system having to deal with persistently high loads of traffic, coping with delays, strikes, cancellations, bad weather, major events such as the World Cup, the Olympic Games or climate change conferences, also has to cope with the push to drive down our industry's environmental impact, as well as identifying what it may have to do to adapt to climate change on the industry itself.

Our Challenges of Growth report looked into this for the first time.

Changing weather patterns will affect supply and demand patterns, most likely during winter and summer peaks.

Over the very long-term, the industry will have to be prepared for the impact of an increase in temperature: rising sea levels could impact airports located on coastlines or tidal river floodplains; we may experience bouts of extreme weather such as storms and flash floods; and they may occur more frequently and with more severity, disrupting flights and airport operations.

Although we still have some time before the most severe effects are seen, we nevertheless watch the mounting scientific evidence with some concern.

II: Air Traffic Management – Delivering Tangible Results

This brings me to the second component of my discussion: what Air Traffic Management is contributing to mitigating these challenges.

Operational and technological improvements are at the heart of what we do.

The key initiative here is of course SESAR, the Single European Sky Air Traffic Management Research Programme.

The SESAR Joint Undertaking between EUROCONTROL, the European Union, and industry entered its development phase in 2008 and will provide a framework in which all stakeholders can work together to focus their Air Traffic Management related development activities on performance improvement. Indeed, by 2020 SESAR promises to:

- Improve safety performance by a factor of 10 ensuring no negative safety impact on 2020 traffic;
- enable a three-fold increase in capacity;
- reduce delays both on the ground and in the air;
- reduce the cost of air navigation service provision by more than half;
- and provide a 10% reduction in the environmental impact per flight.

But, how do these targets translate into tangible actions and how do airports fit into the system? By linking an aircraft's push-back from its departure gate to engine shut down at its arrival gate, SESAR will manage all stages of a flight as a single continuous event.

Airports will therefore become full participants in the Air Traffic Management system.

Even before SESAR deployment, EUROCONTROL and other stakeholders were working hard to deliver results in the short-term: we have a bridging programme for SESAR called DMEAN - which stands for the Dynamic Management of the European Airspace Network.

The keyword here is 'dynamic' and we are actively pulling together all programmes and activities which make a difference to airspace capacity and efficiency: capacity planning; airspace design; flight efficiency; collaborative decision making – bringing airports into the system; the flexible use of airspace and air traffic flow and capacity management.

We are, for example, helping airports implement Continuous Descent Approaches. This is an operational technique which aims to keep aircraft higher for longer, before performing a smooth single-stage descent, reducing fuel burn and noise.

Properly designed and implemented Continuous Descent Approaches have the potential for saving over 150,000 tons of fuel per year, which equates to almost 500,000 tons of CO₂, and can bring about reductions of one to five decibels in noise impact on the ground.

On 31st March 2009, a Joint Industry Action Plan was signed with our partners, ACI-EUROPE, CANSO and IATA. In this plan, we target 100 airports with CDA implementation by 2013. Already, over 60 airports have indicated their willingness to implement.

III: The Way Forward

Going forward, these ongoing and future programmes must further build on a solid partnership with airport operators, air navigation service providers and airspace users, all collaborating closely at every stage of their planning, testing and deployment. This is another key aspect of improving performance.

And here, ladies and gentlemen, is where I specifically address you.

I would like to emphasize balance and mutual understanding.

The right balance must be struck between local flexibility for individual airports, which particularly concerns you, and the need for harmonisation at a network level, which particularly concerns us.

We would like to move towards a situation where we avoid the imposition of operational constraints driven by local environment concerns leading to a knock-on effect across the network which in fact, increase our industry's environmental

impact overall; or where a rule is imposed, for example, that reduces one environmental impact slightly, such as noise, only to increase fuel burn and emissions by a greater extent.

This brings me back to the need to achieve balance and, although we at EUROCONTROL can deliver the technical advice to decision makers, in the end those decisions are political, which brings me back to you!

So, I consider that ARC's QLAIIR initiative is an important step in increasing understanding among operational and policy-making stakeholders. Quality of Life in Airport Regions is not just the name of a report, the title reflects a wider concern to achieve balance between the social and economic benefits that an airport can bring and the environmental – and social – impacts that may detract from these benefits.

I hope that QLAIIR will kick-start a process whereby local decision makers better understand where Air Traffic Management can make a difference – and where it either cannot or should not. We have to avoid raising expectations, only for them to be dashed later on; rather, we should be working in partnership to address the shared challenges that we have – operational and regulatory stakeholders alike.

EUROCONTROL is committed to supporting this two-way dialogue.

If I may turn to one such example.

There is a need to improve spatial planning and operational performance at and around airports. The latter can be achieved through forming airport environmental partnerships, what we call Collaborative Environmental Management: a framework under which airport operators can manage environmental impact in the airport vicinity in cooperation with their operational partners – air traffic control and the airlines.

SESAR targets Collaborative Environmental Management for widespread implementation by 2013. EUROCONTROL has developed the CEM concept with stakeholders and we will complete our validation of it next year through development of case studies at airports who have volunteered to implement it. We think that it could accelerate airports' participation in ACI EUROPE's Airport Carbon Accreditation Scheme.

But, if Collaborative Environmental Management at an airport is isolated from local decision and rule making, it may fail. Hence, the need to ensure mutual understanding through dialogue across the regulatory frontier.

In this respect, airport stakeholders have to continue building links with SESAR and the International Civil Aviation Organisation, especially regarding airport planning guidance. Since many local regulators approve airport Master Plans for several decades ahead, it is essential they are aware of what might be implemented by SESAR and ICAO in these timeframes.

In Conclusion

The world is ever changing. In the 16th Century, French philosopher Michel de Montaigne wrote about the world being in perpetual change. What is true today may be untrue tomorrow.

Events such as the financial crisis highlight that what we believe to be true for the aviation industry today may be very different to what we believe tomorrow. We must be prepared for all scenarios.

Of course, the aviation industry has relatively long lead-in times for new technology and it takes time to perfect and introduce the new improvements.

Yet, I am confident about our future and the ability of Air Traffic Management to deliver.

Work is ongoing and programmes such as Continuous Descent Approaches and Airport Collaborative Decision Making are delivering tangible results for airports and their regions.

The balance has tipped from awareness and acknowledgement to concrete actions resulting in a willingness to change our operational procedures to improve performance.

Working in partnership is a force for positive change and I would like to emphasize the importance of encouraging environmental partnership at all steps in the aviation value chain.

ARC is, of course, central to this. EUROCONTROL and ARC have a solid cooperation in place – the Agency will notably be supporting the ARC Workshop on Air Traffic Management in Spatial Planning in spring 2010, and I am encouraged by progress so far.

Together with all stakeholders, we must build towards a common objective of developing a sustainable air transport industry. This depends on airport operators, Air Traffic Management organisations and aircraft operators working in partnership; under the watchful – and encouraging – eye of their regulators.

Thank you, Ladies and Gentlemen.