



***Aviation in Transition:
Challenges & Opportunities of Liberalization***

Session 5: Physical and Environmental Constraints

Presentation by:
Victor Aguado
Director General
EUROCONTROL

**ICAO: Seminar on “Aviation in Transition:
the Challenges and Opportunities of Liberalisation”
Session 5: Physical and Environmental Constraints
V́ctor M. Aguado, Director General EUROCONTROL**

In every human endeavour, there are constraints – and opportunities. People who succeed, turn constraints into opportunities, using innovative processes. Aviation was founded and developed by people who refused to let obstacles deter them. We in European ATM are determined to do the same.

Liberalisation, the theme of this seminar, will bring threats, opportunities and challenges to aviation as a whole. Liberalisation will affect Air Traffic Management through the changed patterns and increased volumes of traffic that will follow. Our main concern is to provide a safe, robust and efficient Air Traffic Management system in which traffic can operate. I shall take a look at the constraints facing ATM in Europe and tell you what we are doing to face them.

Safety

[Slide 1: Safety - text]

The first constraint, as it were, is safety: we cannot maximise either airspace capacity or efficiency without due regard for safety.

We are making good progress on both sides of the Atlantic but we can never be complacent.

Last year’s mid-air collision over Lake Constance is proof of this. This accident spurred EUROCONTROL to further action in the safety domain. We launched a European High-Level Safety Action Group which has scrutinised relevant existing standards, requirements and norms to see where improvements can be made. Their report will be presented to EUROCONTROL’s Council in April and the findings incorporated into a renewed Safety Initiative that will be translated into concrete action.

Capacity

[Slide 2: Air Traffic and Delay – animated graphic]

Capacity has long been held a constraint but we seem to be overcoming it. Measures to improve European Air Traffic Management have resulted in an airspace capacity increase of around 80% between 1990 and 2000. A further 20% has been added since. Indeed, since 1997, traffic in Europe has grown by 14% but delays have dropped by 22%.

Worldwide 2002 results show a slight net increase of 0.06% over 2001 in international passenger traffic on IATA carriers. In Europe, there was a slight fall-off in flights in 2002 – we had 1.9% less traffic in 2002 than in 2001. There was a very marked decrease in delay – almost 43% down, en-route.

[Slide 3: airport and en route delay – animated graphic]

En-route capacity problems are progressively being solved. But the capacity issue as a whole is not fully resolved. **Airport delay** used to form around 20% of the whole. Its share has increased in recent years and especially recently.

There is no choice but to examine air traffic management, gate-to-gate. We are, therefore, integrating airport airside programmes with the rest of our European ATM Programmes to enhance airport capacity and safety.

[Slide 4: Benefits of RVSM – chart plus text]

RVSM – Reduced Vertical Separation Minima – is a pan-European programme that was introduced one year ago. In essence, it increased the number of flight levels above FL290 from seven to thirteen. RVSM was a most successful programme. It alone increased capacity in the upper airspace by around 15%; we estimate that it helped decrease fuel burn by 1-2% overall and by almost 5% above FL290. At a stroke, RVSM removed the environmental impact of four days' worth of European air traffic, or 100,000 intra-European flights.

Human Resources

[Slide 5: Human Resources - text]

Human resources are a challenge. Europe suffers from a controller shortage of an average of 12%. There is also a “retirement bulge” coming soon, when many experienced controllers will retire.

The situation is not desperate, though, for there is a growing feeling that better management of existing human resources could go a long way towards improving matters. More efficient rostering, for instance, could help a lot through matching controller presence to the traffic demand.

Some relief could well be obtained once the European Air Traffic Controller Licence is made available. This licence will harmonise standards of controller training and competence and should help with staff mobility, enabling controllers to work in countries other than their own where serious shortages exist. EUROCONTROL has made a substantial contribution to this Licence, including the development of Common Core Content for controller training courses across the continent.

Costs

[Slide 6: Costs - text]

We live in difficult economic times. Aircraft operators and Air Navigation Service Providers are struggling. Although the route charges system that Europe has used for many years has served aviation well, circumstances have altered and it is perhaps time for a change.

At present, the system allows for full recovery of costs over a two-year cycle. As a result, there is no incentive for full efficiency - and neither do the service providers have the flexibility to manage lean periods.

Is it possible to move from full cost-recovery to incentives in the form of more competitive charges for performance-driven services? Now is the time to reassess charging mechanisms – but carefully, for the issue is a delicate one.

There is, however, one key question: should we continue with the existing principle whereby 100% of costs are recovered from the users, or should the taxpayer shoulder some of the burden, as is the case with other transport modes? Time will tell and we will work together with IATA and other user organisations as well as with the European Commission on this sensitive issue.

Environment

[Slide 7: Environment - text]

The environment is a looming constraint. Engines are cleaner and quieter now than they have ever been and research continues to push technology still further – just recently, for instance, there was a breakthrough in coating materials which could pave the way for more efficient engines with lower CO₂ emissions. Research is also being carried out into the reduction of jet engine fan noise using ejector pump flow control, a process which promises reduction of 1-2 dB.

At EUROCONTROL, basing ourselves on the ATM perspective, we build environmental considerations - curtailing noise and emissions, principally - into our strategic decision-making. We are working closely with ATM stakeholders on these issues. Right now, we are making progress on a Basic Continuous Descent Approach which helps reduce noise and emissions without impacting airport capacity. More pertinently, however, the RVSM experience has shown how the objectives of efficiency and reduced environmental impact can be achieved. We will pursue them with vigour.

Conclusion

[Slide 8: Conclusion - text]

In conclusion, we can note that 2002 saw great benefits for European ATM: these were most noticeable in the traffic/delay evolution. Pleasing capacity increases were also made, thanks in part to the introduction of RVSM.

It is growing increasingly clear that the different parts of the system – airports, flow management, traffic control - have to be dealt with as a network in order to deal with the traffic forecast up to 2020. This being the case, the overall function of Architect and Manager of this ATM network is fundamental to ensure the provision and optimisation of the safety and capacity levels required.

Appropriate investment is required to ensure that benefits are continued: not only charges but delay costs, too, must be kept under control in order to ensure measured growth.

Finally, after identifying the major air transport constraints to growth, we shall ensure that ATM will play a fundamental role in overcoming them. Indeed, our challenge is to use these constraints as a spur to develop new ideas and deliver a system that is safer, more cost-effective and environmentally sustainable.