
CITY PAIRS

Improving the network

In 2009, FABEC started to work on improving the so-called 50 most penalised city pairs. Based on a list provided by Eurocontrol, civil and military experts are investigating solutions for specified routes connecting major airports which deviate significantly from the ideal great circle routings. Most prominent examples are Amsterdam/Madrid or Paris/Munich. They have been notorious for decades and are often used by aircraft operators to illustrate the inefficiency of ATC as such. Although the political pressure was very high, experts have made it very clear right from the beginning that the level of ambition has to be realistic.

FABEC experts proposed several shorter routes given the situation where the core area is affected by a combination of main civil en-route flows, a huge amount of vertical movements and a lot of segregated military areas. Although some of the changes seem to be minor, the overall effect is impressive. To be more specific: based on a calculation of flights from one week in November 2010, the first 19 route changes led to annual savings of approximately 4,000 tonnes of fuel per year, 555,000 nautical miles and 11.6 million kilograms of CO₂. The reason behind this is quite easy: due to the traffic density in the core area of Europe, 77,400 flights per year are using these shortened routes, but not all of them connect the respective airports.

Balancing interests and gains

The main task for the experts is to balance the different requirements between the civil and military airspace users as well as the functional need to segregate vertical flows to or from airports from horizontal overflights. A possible solution is to separate overflying traffic from aircraft movements in the vicinity of airports. A proposal would also have to take into account the balance between capacity and flight efficiency. This means in fact that a decision has to be taken to accept more traffic or to implement shorter routes – accepting the condition sine qua non that safety has to be ensured at all times.

Civil-military cooperation

A good example of cross-border collaboration between civil and military partners is the city pair between Paris and Munich. Near the southern border between France and Germany, several military areas hamper the direct connection. But a solution was found after bringing the experts together. Overall, the route was reduced by 34 nautical miles, saving on average 204 kilograms of kerosene and 680 kilograms of CO₂ per flight. This positive result was achieved because German and French militaries as well as their civil colleagues agreed on a common solution.

Huge network effects

One aspect which should not be underestimated is the effect of the measures on the European network as such. One impressive example is the city pair of Amsterdam/Madrid. FABEC experts implemented a shortened route structure southeast of Paris. The improvement in terms of nautical miles is minor, and only six flights per day are, in fact, using the new route between Amsterdam and Madrid. But the majority of flights from Scandinavia to Spain use this route – which means about 37,000 flights per year. With the slight improvement of one city pair, a complete pan-European traffic flow was improved. That's why the European Network Management Function asked FABEC to proceed with the work started.

New routes on the way

Due to the success of the first steps, FABEC will take the next step. In the first half of 2011, FABEC will implement further routes which affect traffic flows from the Balearic Islands to the north of the FABEC and vice versa. Based on the proposal we have on the table, further sustainable improvements of city pairs, and of traffic flows as well, seem to be realistic.

