

# Brussels airport Noise dispersion plan



*...also a Pilot concern !*

## BeCA Position Paper

### Spreading vs Concentrating

Spreading the acoustical nuisances on the greatest possible number of residents around the Brussels airport is nothing but a political decision.

Since the spring of 2003 EBBR (Brussels National airport) is subject to a noise dispersion plan implementing approach and departure procedures based on system allowing noise dispersion to be the determining factor for runway and routes choices, in other word a noise preferential runway system.

The use of a preferential runway

system automatically implies a concentration of traffic disregarding the weather conditions (wind).

### A noise preferential runway system ?

According to ICAO, as a standard operation, aircraft should land and take off into the wind (DOC 4444, Ch 7.2.2.). Airports have main runways which are better than others, because of obstacles, length, capacity, equipment, en no crossing with other runways. Therefore it is acceptable to use those main runway even with tail or crosswind, knowing that this would decrease safety, because the safety

level would be decreased even more if switched to less good runways.

Therefore the preferential runway system only applies to the major runway. In Brussels, this is 25 L/R because they are longer, better equipped and are not crossing, so providing safer operations even with some tailwind. ICAO determined that this exception could be safe up to 5/15 kt, gust included.

As at night, there is no capacity constraint, BeCA proposes to abandon the preferential runway system and to use the runways according to the actual wind conditions.



At BIAC's request, a safety case study has been undertaken by AAC (Airport & Aviation Consultancy), Abcoude, The Netherlands.

The study defines all limits and set operation procedure that could be enforced in Brussels when ICAO SARPS (Standard and Recommendation Practices) deviations occur.

## Change conditions

Any change in aircraft movement procedures on and around an airport must take three kind of factors simultaneously :

Safety : by fulfilling international standards and aircraft performances

Commercial : by guaranteeing sufficient capacity and shortest dead times

Citizenship : by reducing the environmental burden on its surrounding.

## Major BeCA recommendations

A NPRS (noise preferential runway)



system) in Brussels could only apply on runways 25 Left and Right;

The combined use of RWY 20 for take-off and 25R for landing and secondary take-off does not meet ICAO standards and recommendations and might not be implemented (confirmed by AAC safety case June 2003);

A tailwind limit of 5 kt on RWY 20 for take-off at night is unacceptable, neither by ICAO recommendation nor by the AAC case study (§9.2);

It is physically demonstrated that the aircraft noise emission is significantly reduced when take-off and landings are performed with headwind condition – any Noise Reduction Plan should incorporate that evidence;

The installation of an ILS 07L would allow the use of all directions for landing and take-off and thus all weather conditions would be accommodated for. Landing on RWY 07L should increase the noise nuisance dispersion capacity by 25%;

Experts from the international pilot

community are ready to bring their know-how for finding the best available procedures in the noise perceiving reduction.

During several years airline pilots have known numerous changes in procedures - it is degrading the safety level. Pilots already can see an increase in non-compliance with new procedures. BeCA strongly advises a delay in implementation of new procedures in order to reach more maturity in the proposed procedures and to avoid future adjustments or changes.

Noise procedures should apply to all traffic, including military traffic

by the BeCA  
Technical Commission  
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\* Consult also the BeCA references detailed in page 3

*BeCA is the Belgian voice of airline pilots, promoting the highest level of aviation safety and providing services, support and representation to all of its Members as well as to the global pilot community.*

*By getting its rights from the State Council, BeCA has the duty to offer to the Citizen, the Government and the Industry the highest available aviation expertise.*

*BeCA represents not only the airline pilots in Belgium but also the Flight Engineers, expatriates pilots, helicopter pilots, Instructors, job seekers and ATPL students*

## The noise plan at Brussels International Airport.

Brussels International Airport EBBR has 2 primary parallel runway's, Rwy 25L and 25 R, which are equipped with an ILS. Rwy 25L is fully equipped and approved for CAT III operations. For the moment Rwy 25R is CAT I, but it will also be upgraded to CAT III in the near future. Rwy's 07L&07R have no ILS and are not used for landing traffic due to local restrictions. EBBR also has a secondary (shorter, less suitable) runway 02/20 with an ILS in both directions. Rwy 02/20 crosses the axis of RWY's 25L and 25R (see airport chart 10-9).

The noise plan at Brussels airport is called a dispersion plan, it tries to disperse/spread the noise of landing and departing traffic in several directions depending on the time and day of the week. During the last few years this noise plan has been continuously changing due to political pressure induced by local noise action groups and several court rulings. These frequent changes create an unstable and unsafe system. It is the opinion of the Belgian Cockpit Association that the operational aspects of an airport are guarded and established by international rules. Operational rules should not be changed or adapted on a political level. An international airport is part of a global system and operational safety can only be reasonably assured if the globally established rules are applied.

At Brussels airport the definition of a Preferential Runway System (PRS) is not used in the context as defined by ICAO (ICAO PANS/OPS Doc.8168). In fact all Rwy's at EBBR can be considered as preferential rwy depending on the time of day and period of the week. The ICAO definition of a preferential runway system is meant to provide limitations during which you can continue to use the airport's most preferential runway; it is not aimed at developing (wind)limits for all runways. ICAO clearly states that when the wind components exceed the values of the noise PRS then noise abatement shall not be the determining factor for selecting the runway in use. In this case the most suitable runway should be selected (ICAO PANS-ATM Doc. 4444), this principle is not always correctly applied at Brussels airport. **The BeCA always stressed that RWY 02/20 is a secondary runway and**

**cannot be seen as a preferential runway. This rwy should only be used for what it was designed, so strong northerly and southerly winds and it should certainly not be used with tailwind.** It should also not be used in combination with a crossing Rwy for noise abatement reasons. An acceptable short-term solution could be the use of Rwy 02/20 as a single runway during periods of low demand and only with headwind. The BeCA always stressed that the only safe long-term solution to accommodate with easterly winds would be to equip Rwy 07L with a precision approach system; this would also have a positive effect on the need to spread the noise. Other publications mention that a combination of Rwy's 25R&L for landing and 20 for take-off should not be part of a (noise) PRS for SAFETY reasons and that Rwy 02/20 should not be used with tailwind. Yet in the Belgian AIP you will find that combinations of Rwy 20/02 and Rwy's 25/07 are used for take-off and landings AND that the wind limits for RWY02/20 for landing are 15/5!! (day and night) and 15/5 (night) and 15/0 (day) for take-off, so the noise dispersion plan at Brussels airport "forces" pilots and air traffic controllers to use runways and procedures which are less safe. During certain periods of the week aircraft have to land and take-off on secondary Rwy's with tailwind due to the noise dispersion plan, this despite the fact that a more suitable runway is available. At the same time crossing runways are used for take-off and landings. So at certain moments a combination of crossing runways and tailwind operations is used, not because there is no other safer solution available, but due to the restrictions of the noise dispersion plan.

From an operational point of view, there is no immediate danger in landing or departing with tailwinds. Most aircraft are capable of doing so and pilots are trained to perform tailwind operations. Sometimes we have to land with strong tailwinds (max limits are based on the aircraft/company/performance limitations) as at certain airports there is no other option. It's of course another story when you have to land on a certain runway with strong tailwinds due to noise abatement only even if there's a safer solution available! Operational limitations (aircraft/performance/company max cross& tailwind limits) are hard limitations the crew has to

observe at any time. Procedural limitations must be designed taking into account all factors, including worst-case scenarios. Procedures must be suitable to be followed in all circumstances, by all pilots, from the youngest pilot who just earned his licence, up to the pilot at the end of a 14 hours night duty who's not at all familiar with the airport (terrain influence,...). So while the pilot must preserve the hard limitations, the procedure designer must take into account a combination of factors in order to observe the overall level of safety is not decreased.

It is obvious that two different kinds of wind are often mixed up. When a pilot states a wind he can accept, then that is a momentary real wind. Winds used for runway assignment and ATIS are very different due to the measurement system and tolerances. Due to the tolerances and limits of the wind measurement system wind criteria for runway selection have to be lower. Moreover the reported wind by ATC (TWR) is a mean value of the wind of the last 2 minutes. A crash at EHAM some years ago was due to the fact that a reported crosswind component of 15 kts turned out to be an actual crosswind component of 37 kts at the moment of touchdown of the aircraft.

Due to the fact that the Brussels noise dispersion plan and it's frequent changes have a negative impact on the level of operational safety we feel it is our duty as a professional pilot organization to inform the international pilot community via IFALPA and ECA, that is why the BeCA published an IFALPA Safety bulletin concerning this subject last year

If you fly into EBBR, keep in mind that: The safest option is not always considered for the selection of runway in use.

On the EBBR Jeppesen plates 10-4 to 10-4E (see extract below) you can find a table which gives you the preferential runway for take-off and landing in relation to the hour and day of the week. Below the table you can find the windlimits for the preferential runway system. It is quite difficult for the pilot to plan ahead for a runway in use since the EBBR noise preferential runway system is subject to frequent changes due to court rulings and decisions on a political level.

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