Schedule of Charges
Chapter 6, ZFBB

INNS' BRUCK AIRPORT

ADDENDUM 2
to Annex 3 of the Schedule of Charges

Introducing emission-based fees

Tiroler Flughafenbetriebsgesellschaft m.b.H (TFG) is expanding its Schedule of Charges regarding environmental protection by an emission-based fee component. Preventive environmental protection is an essential of our corporate strategy.

An airplane's starting and landing procedure causes, among other things, emissions of the pollutants NOx (nitrogen oxide) and HC (unburned hydrocarbons) close to the airport. This means that both pollutants, along with other sources of emission, can contribute to a local environmental problem in the airport environment (especially in valleys such as the Inntal, where Innsbruck is located). To limit the emission of these pollutants and provide an incentive to increasingly use aircraft with low-emission engines, an emission-based landing charge – the first in Austria – is being introduced in Innsbruck.

In this manner, a bonus-malus system will be implemented for all aircrafts based on their engines' NOx values, which will lead to an income-neutral situation for the airport operator in the medium term. The income achieved with the surcharges should be deducted from the users in the following period by way of a compensation amount.

A possible funding gap by way of a too high bonus distribution as reduction from landing charge should be compensated in the following period by a modification of the scheme's parameter.

To differentiate between the airplanes, NOx values per aircraft and the engine data will be consulted as a suitable, objective, and transparent criterion according to FEG paragraph 4a, subpara 2, clause 1.

Calculation of the model

The emission-based fee amounts to EUR 3.00 per emission value in the standardized landing and starting procedure of an aircraft. The calculation is made for each start and each landing.

The emission value is the nitric oxide equivalent emitted by the aircraft, per kilogram, in the standardized landing and starting procedure ('Landing and Take-Off-Cycle', or LTO cycle for short). The necessary information on the aircraft and engine types is determined using a recognized fleet database. Unknown data are elicited from the users.

The emission value is determined using the ERLIG formula ('Emission Related Landing Charges Investigation Group' of the ECAC ('European Civil Aviation Conference') based on certified nitric oxide (NOx) and hydrocarbon (HC) emissions per drive in the LTO cycle in accordance with the provision ICAO Annex 16, Volume II.

Calculation formula:

NOx, aircraft[kg] = (number of engines x ΣMode time [s] x fuel consumption [kg/s] x emission factor [g/kg]) / 1000

If the engine emissions for HC per LTO cycle exceed the certification value of 19.6 g/kN, the corresponding NOx value of the aircraft will be multiplied by a factor 'a':

a =1, if…

- ⇨ DpHC/F00 <= 19.6 g/kN = (DpHC/F00) / 19.6 g/kN;
- ⇨ DpHC/F00 > 19.6 g/kN with a_{max} = 4 nitric oxide equivalent (emission value) of the aircraft = a x NOx of the aircraft.

The emission value is considered up to three decimal places.

The emission values are determined based on the ICAO database for turbofan and jet engines (ICAO Aircraft Engine Emission Database) and the database of the FOI Swedish Defense Research Agency for turboprop engines. If multiple or deviating entries exist for one engine type in these emission databases, the highest recorded emission value will be recognized regardless of the respective usage criteria.

If no engine information or conflicting engine information exists for an aircraft, the highest known emission value for that type of aircraft will be used as a basis.

If an engine is not contained in any of the available emission databases and no standard engine can be recognized, the engine will be valuated using the study of the German Center for Air and Space Travel from 28 February 2005.

The use of an engine type with low emission values (through different UID numbers or versions of an engine identified as “re-rated”), TFG must be verified through presentation of the Airplane Flight Manual (AFM) in connection with the corresponding ICAO certificate or the manufacturer proof. Until this has been verified, the TFG will calculate the fee based on the highest emission value known for the aircraft or engine type.

Each increase or reduction of the emission values for the aircraft in accordance with AFM, ICAO certificate or manufacturer’s notification must be communicated to TFG without delay.

For movements in which subsequently increased emission values are determined, fees can be subsequently calculated; reduced values will be considered without delay as soon as they have been verified and checked. No refunds will be given retroactively.

By way of deviation from this general regulation, the emission from aircraft is calculated as follows:

- ⇨ up to 1,200 kg MTOM flat rate per movement EUR 1.00
- ⇨ 1,201 kg up to 10,000 kg MTOM flat rate per movement EUR 3.00

For users with aircraft over 10,000 kg MTOM without evidence of the emission value, a flat rate of EUR 250 will be recognized, in addition to the other provisions on the emission value, until the actual value is proven. A lower emission value reported later will be recognized beginning with the air movement following the verification, but no refunding of the flat rate amount is provided for.