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Budapest Liszt Ferenc Nemzetközi repülőtér / Budapest Liszt Ferenc International Airport

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1. General provisions

The aim of the Environmental Protection Manual is to summarize and publish the noise abatement procedures which can be applied to mitigate the impacts of the noise generated by aircraft at the airport and on the residential areas affected by landing and takeoff procedures. The scope of this manual covers the operators and crews of all aircraft intending to use Budapest Ferenc Liszt International Airport in aerial traffic, as well as organizations which participate in the handling of these flights.

Budapest Ferenc Liszt International Airport may be used by aircraft which comply with the requirements prescribed by joint decree no. 18/1997 (X. 11.) of the Minister of Transport, Telecommunication and Water Affairs and of the Minister of Environmental Protection and Regional Development.

Only aircraft which comply with chapters 3, 4, 5, 6, 8, 10 and 11 of part II, volume I of annex 16 of the Convention on International Civil Aviation signed on 7 December 1944 in Chicago (ICAO Convention), or with stricter requirements in terms of noise emissions than the aforementioned regulations, may use the airport on a regular basis.

The airline or aircraft operator planning to use the airport is obliged to send to the airport operator in advance the noise certification of its aircraft intending to use the airport. The noise certificate must be sent in advance by email to aodm@bud.hu or by fax to +36 1 296 6890.

The selection of the runway to be used is performed by air traffic control (ATC) on the basis of the regulations specified below.

All times specified in this chapter are local times. The periods specified hereunder shall be interpreted as follows: all periods include the starting time of the period, but not its closing time.

2. Noise preferential runway use

2.1. Daytime (between 06:00 and 22:00 LT)

In case of runway direction 31

Runway 31R shall by default be used for landing by arriving traffic. In case of ICAO Code A, B, C, D and E traffic arriving to Terminal 1, runway 31L can also be used for landings.

In case of departing traffic, runway 31L is to be used for takeoffs.

In case of runway direction 13

In case of arriving traffic, runway 13R is to be used for landings.

Runway 13L shall by default be used for takeoff by departing traffic. In case of ICAO Code A, B, C, D and E category traffic departing from Terminal 1, runway 13R may also be used for takeoff.

2.2. Nighttime (between 22:00 and 06:00) – Operational regulations which differ from daytime

For noise protection reasons, primarily runway 31R and also runway 13R are to be used by arriving traffic, in compliance with the authority resolution on the designation of noise protection zones. Light turbulence category aircraft arriving for the Terminal 1 apron may also use runway 31L for landing outside of the period of deep sleep, which lasts from midnight to 5:00 a.m.

For noise protection reasons, from 00:00 to 05:00 LT, runway 13L is to be used for takeoffs and runway 31R is to be used for landings (reciprocal runway operation). In case runway 13L/31R is closed during this period, or it is open, but one of the connecting taxiways A9, V, B5 and K is closed and therefore the reciprocal landing and takeoff procedure cannot be applied, runway 13R is to be used for takeoffs and runway 31L is to be used for landings.

This reciprocal landing and takeoff procedure must be applied under the following conditions, up to a maximum 5 kt tailwind and 15 kt crosswind component value (including wind gusts):

- All of the CNS and AGL equipment of the runway in use must be available without restriction, in line with the prevailing weather conditions;
- At least the following adjoining taxiways of the runway in use must be available without restriction: taxiways A1, A2, B1, B2, C and D for runway 13R/31L, taxiways A9, V, B5 and K for runway 13L/31R;

– It may only be used on a dry runway, if the published runway condition code is "6";

The reciprocal landing and takeoff procedure must be applied up to a maximum 10 kt tailwind and 15 kt crosswind component value (including wind gusts), with the proviso that with a tailwind component value of more than 5 kt, the following additional conditions must also be complied with:

– It is only permitted on runway 13L/31R (takeoff: 13L; landing: 31R);
– Takeoff from 13L is preferred from the threshold (B5);
– It may be used under VMC conditions (cloud base of at least 1500 ft and 5 km horizontal visibility is necessary).
– It may only be used for ICAO WTC L and M category aircraft.

2.3. Exceptions

Other than the cases specified in section 5., deviation from the basic rules on runway use is only possible under the following circumstances:

– If a closure or restriction must be introduced on one of the runways and/or on any of taxiways A2, A6-A7-A8, B1, G;
– In case of calibration flights;
– If no ILS approach is available on the runway selected on the basis of standard regulations;

3. Noise abatement takeoff and landing procedures

3.1. Takeoffs

During takeoffs, the noise abatement takeoff procedures specified in section 7 of part I. of ICAO Doc 8168-OPS/611 (PAN-OPS) Volume I. (5th edition, 2006) must be used, except if this is not recommended by the pilot of the aircraft or ATC due to foreseeable reasons (meteorological or aviation safety). If the noise abatement takeoff cannot be executed due to foreseeable reasons, air traffic control must record this fact.

The use of taxiways for runway 13L/31R for departing aircraft for noise abatement reasons:

– In case of departure from runway 13L, takeoff shall be planned from taxiway intersection K.

– If a departing aircraft belonging in the medium or heavy turbulence category receives/is given runway 31R for takeoff, it must commence takeoff from the end of the runway, using taxiway A9. If runway 13R/31L is not available, 31R takeoff from taxiway intersection V may also be permitted, for flow management reasons.

The noise abatement takeoff procedure considered during the calculation of the noise protection zones must be executed in accordance with the procedures described in the appendix to chapter 3 of section 7 of part I. of ICAO Doc 8168-OPS/611 (PAN-OPS) Vol. I. (5th edition, 2006). This procedure is described in the annex to this manual.

The departure and arrival procedures for the individual runways are specified on the maps in chapter AD2 LHBP of the valid Hungarian AIP.

Compliance with the standard instrument departure (SID) procedure published in the AIP is mandatory for aircraft performing IFR flights up to an elevation of QNH 7000 feet (2150 m) above mean sea level in case of runway direction 31 and up to QNH 4000 feet (1200 m) above mean sea level in case of runway direction 13, except for light turbulence category propeller driven aircraft or aircraft requesting a cruise altitude of less than 9500'.

3.2. Landings

With the exception of aircraft using visual flight rules (VFR) and calibration aircraft, primarily the instrument landing procedure of the highest available level shall be used during landing, except if the pilot of the aircraft expressly requests a lower level approach procedure. In case of the unrestricted availability of both runways and their navigation equipment, visual approach procedures may not be used on threshold 13L.

The use of reverse thrust shall be limited to idle thrust during landing, except if aviation safety considerations require the use of a higher level of thrust (e.g. if the runway is wet or snowy).

4. Other noise abatement measures

4.1. Nighttime traffic restrictions

At nighttime, the number of movements of scheduled and non-scheduled commercial landings and takeoffs may be planned as follows:

- 50 movements between 22:00 and 06:00;
- Out of this, 6 movements between 00:00 and 05:00.

4.2. Restrictions on the use of auxiliary power units (APU)

Aircraft operators must act circumspectly regarding noise burdens arising from the use of auxiliary power units (APUs), in order to protect the area surrounding the airport:

- The operation of APUs must be stopped at the latest within 5 minutes of arrival on stands equipped with a ready-installed external power source, in operational condition;
- APUs may only be restarted for essential technical checks, or immediately prior to planned departure to ensure appropriate conditions in the passenger cabin and for electronic systems, maximum 5-30 minutes prior to passenger boarding, depending on the aircraft type;
- The operation of APUs is not permitted without the presence of trained specialist staff.

During nighttime, the duty airside manager (DAM) checks airfield operational areas and warns the crews or the ground handling agent of aircraft breaching regulations on the use of APUs.

4.3. Rules on training, demonstration and certification flight

Training flights, demonstration flights and certification flights may not be planned and executed:

- On workdays between 22:00 and 06:00;
- On bank holidays between 18:00 and 08:00.

Calibration flights may be executed on workdays, non-work days and bank holidays as well, between 06:00 and 22:00.

Training flights may not be planned or conducted during single runway operation.

Training flights may not be planned or conducted with ICAO code A and B, non-jet aircraft.

Training flights shall be grouped in such a way that, if possible, different exercises should follow each other, in order to avoid the continuous noise pollution of the same residential areas. A maximum of 3 exercises may be planned in a sequence for the same route.

Requests for the execution of training flights must be submitted at least one, but not more than three calendar days in advance to the Budapest Airport Ltd. Airport Operations Control Center (AOCC) (tel.: +36 1 296 7421 or +36 1 296 6914; E-mail: airport.ops@bud.hu), providing the following data:

- Aircraft registration marks and call sign;
- Aircraft type;
- The nature and the planned time of the exercise;
- The contact details of the pilot in command (PIC) of the training flight (preferably mobile phone number).

The AOCC shall confirm to the applicant the authorization or prohibition of the training flight.

Training flights authorized initially by the AOCC may be subject to ATC restriction on the day of execution if this is warranted due to the traffic situation, weather conditions or technical failures. Therefore, the PIC of the training flight shall contact the Budapest TWR prior to the execution of the training flight on +36 1 293 4600.

Maintenance organizations are obliged to inform the AOCC at least 24 hours prior to the planned time of certification flight about the planned time and the nature of flight.

In case of demonstration flights planned over the area of the airport, the organization responsible for the event must request consent from the AOCC to holding the event, prior to initiating the permitting procedure with the aviation authority.

When requesting consent, the following information shall be provided to the AOCC:

- Aircraft registration marks and call sign;
- Aircraft type;
- The nature, the planned time and duration of the demonstration flight;
- The contact details of the PIC of the demonstration flight (preferably mobile phone number).

Only one training or demonstration flight, flight test or calibration flight may be authorized at any one time within LHBP CTR.

Rules on runway use for training flights and certification flights

In case of runway direction 31

Training and certification flights may be authorized for runway 31R. Only Police training flights may be authorized for runway 31L (even during dual runway operation), and certification flights only if runway 13L/31R is not available.

In case of runway direction 13

Training flights may not be authorized for runway 13; certification flights may be authorized for runway 13R. If runway 13R/31L is not available, flight testing may be authorized for runway 13L.

In case of demonstration flights, prior authority coordination and permitting is required with respect to runway use as well.

5. Exceptions

The restrictions listed in sections 1. – 4. do not apply to the following cases:

- If noise abatement considerations cannot be taken into account during the selection of runway use, based on Part 3, Chapter XII, Paragraphs 177.§ (4), (5), (5a) and (6) of decree no. 57/2016 (XII. 22.) of the Ministry of National Development;
- If the aircraft is in an emergency;
- Movements of aircraft requiring special handling, as defined in section 10.1.2.1 of Appendix 1 of decree no. 56/2016 (XII. 22.) of the Ministry of National Development;
- Movements of aircraft operating due to various exceptional purposes, such as urgent humanitarian or emergency search and rescue operations, medical assistance, patient transportation and disaster relief;
- Aircraft participating in state operations, including military, customs, Police, fire service, law enforcement and national security operations;
- The restrictions also do not apply to exceptional cases when their enforcement would endanger aviation safety, under the given circumstances. The aviation safety justification must in all cases be attested by the party making reference to it.

6. ANNEX

Appendix to chapter 3, section 7, part I. volume I. of ICAO Doc 8168 OPS/611 PANS-OPS

(5th edition – 2006)

Appendix to Chapter 3

NOISE ABATEMENT DEPARTURE CLIMB GUIDANCE

1. General

1.1 Aeroplane operating procedures for the take-off climb shall ensure that the necessary safety of flight operations is maintained while minimizing exposure to noise on the ground. The following two examples of operating procedures for the climb have been developed as guidance and are considered safe when the criteria in 3.2 are satisfied. The first procedure (NADP 1) is intended to provide noise reduction for noise-sensitive areas in close proximity to the departure end of the runway (see Figure I-7-3-App-1). The second procedure (NADP 2) provides noise reduction to areas more distant from the runway end (see Figure I-7-3-App-2).

1.2 The two procedures differ in that the acceleration segment for flap/slat retraction is either initiated prior to reaching the maximum prescribed height or at the maximum prescribed height. To ensure optimum acceleration performance, thrust reduction may be initiated at an intermediate flap setting.

Note 1.— For both procedures, intermediate flap transitions required for specific performance-related issues may be initiated prior to the prescribed minimum height; however, no power reduction can be initiated prior to attaining the prescribed minimum altitude.

Note 2.— The indicated airspeed for the initial climb portion of the departure prior to the acceleration segment is to be flown at a climb speed of V_2 + 20 to 40 km/h (10 to 20 kt).

2. Noise abatement climb — Example of a procedure alleviating noise close to the aerodrome (NADP 1)

2.1 This procedure involves a power reduction at or above the prescribed minimum altitude and the delay of flap/slat retraction until the prescribed maximum altitude is attained. At the prescribed maximum altitude, accelerate and retract flaps/slats on schedule while maintaining a positive rate of climb, and complete the transition to normal en-route climb speed.

2.2 The noise abatement procedure is not to be initiated at less than 240 m (800 ft) above aerodrome elevation.

2.3 The initial climbing speed to the noise abatement initiation point shall not be less than V_2 + 20 km/h (10 kt).

2.4 On reaching an altitude at or above 240 m (800 ft) above aerodrome elevation, adjust and maintain engine power/thrust in accordance with the noise abatement power/thrust schedule provided in the aircraft operating manual. Maintain a climb speed of V_2 + 20 to 40 km/h (10 to 20 kt) with flaps and slats in the take-off configuration.

2.5 At no more than an altitude equivalent to 900 m (3 000 ft) above aerodrome elevation, while maintaining a positive rate of climb, accelerate and retract flaps/slats on schedule.

2.6 At 900 m (3 000 ft) above aerodrome elevation, accelerate to en-route climb speed.

I-7-3-App-1 **23/11/06**

3. Noise abatement climb — Example of a procedure alleviating noise distant from the aerodrome (NADP 2)

3.1 This procedure involves initiation of flap/slat retraction on reaching the minimum prescribed altitude. The flaps/slats are to be retracted on schedule while maintaining a positive rate of climb. The power reduction is to be performed with the initiation of the first flap/slat retraction **or** when the zero flap/slat configuration is attained. At the prescribed altitude, complete the transition to normal en-route climb procedures.

3.2 The noise abatement procedure is not to be initiated at less than 240 m (800 ft) above aerodrome elevation.

3.3 The initial climbing speed to the noise abatement initiation point is V_2 + 20 to 40 km/h (10 to 20 kt).

3.4 On reaching an altitude equivalent to at least 240 m (800 ft) above aerodrome elevation, decrease aircraft body angle/angle of pitch while maintaining a positive rate of climb, accelerate towards V_{ZF} and either:

a) reduce power with the initiation of the first flap/slat retraction; or

b) reduce power after flap/slat retraction.

3.5 Maintain a positive rate of climb, and accelerate to and maintain a climb speed of V_{ZF} + 20 to 40 km/h (10 to 20 kt) to 900 m (3 000 ft) above aerodrome elevation.

3.6 On reaching 900 m (3 000 ft) above aerodrome elevation, transition to normal en-route climb speed.

3.7 An aeroplane should not be diverted from its assigned route unless:

a) in the case of a departing aeroplane it has attained the altitude or height which represents the upper limit for noise abatement procedures; or

b) it is necessary for the safety of the aeroplane (e.g. for avoidance of severe weather or to resolve a traffic conflict).

23/11/06

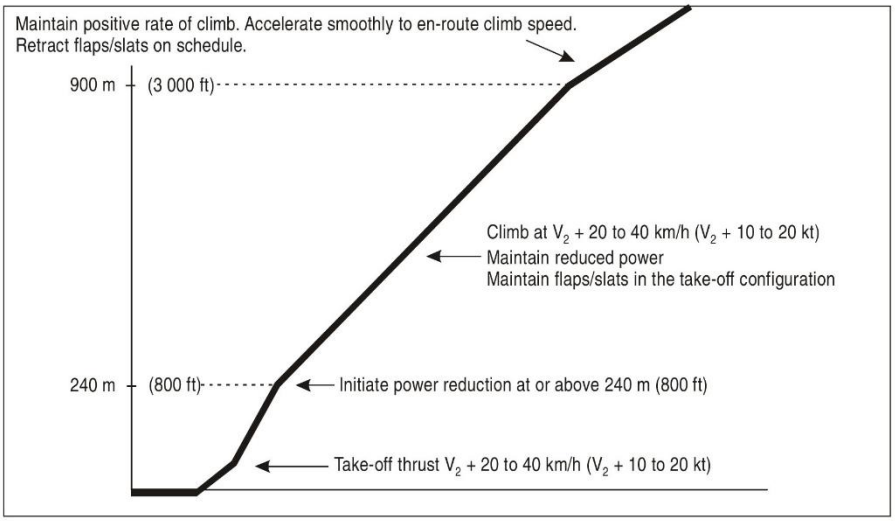

Figure I-7-3-App-1. Noise abatement take-off climb — Example of a procedure alleviating noise close to the aerodrome (NADP 1)

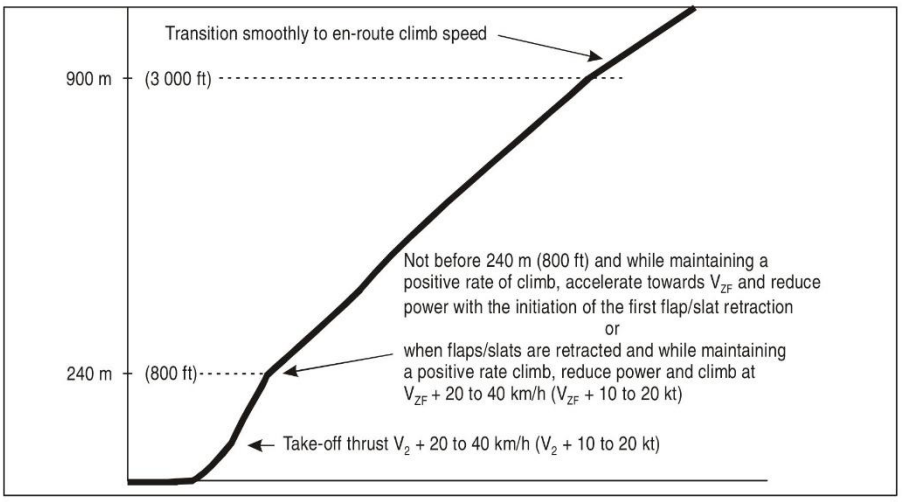

Figure I-7-3-App-2. Noise abatement take-off climb — Example of a procedure alleviating noise distant from the aerodrome (NADP 2)

23/11/06