Advice on slot tolerance RTHA

Rotterdam The Hague Airport (RTHA) is coordinated on various (capacity) parameters. Since ATC is not restricting any of the parameters at RTHA the LVNL has not been involved in this advice. As sensitivity regarding (time) tolerance can be different for each parameter, the slot tolerance is determined for each parameter including the consequences of any deviation of the allocated slot. The times mentioned in this document are always local time (LT) and therefore never UTC.

This document is limited to the slot tolerance for commercial ("handels") traffic and any position flights linked to these operations only. This document does not apply to general or business aviation since they do not use the commercial terminal or apron and are therefore not coordinated.

In the end the operational consequences of any deviation from an allocated slot determines what the maximum slot tolerance will be. This involves a delicate balance between operation and regulation.

The basis is the current Worldwide Airport Slot Guide (IATA WASG version 1) in which chapter 9 describes the principles for slot monitoring.

"The key principles of slot monitoring are as follows:

a) Slot monitoring is intended to:

i. Ensure that operations at a Level 3 airport are in accordance with the slots as allocated;

ii. Ensure that slots are used in line with the Use It or Lose It rule;

iii. Help ensure scarce capacity is not wasted;

iv. Help ensure the smooth operation of airports for all stakeholders; and

v. Prevent the misuse of slots."

The yellow highlighted sub iii and iv above have been the basis for this document,

Slot tolerance regarding time of operation

Parameter: Conversion of amount of noise to number of available slots

RTHA is limited on an annual (operational year from 1th November – 31th October) maximum allowed level of noise which the airport is allowed. This maximum level is described in the operational permit ("omzettingsregeling" which will be replaced by a "luchthavenbesluit" in the near future). The operational permit does not describe a maximum number of movements or slots at this moment only the maximum annual level of noise is prescribed. The operational permit also limits the operational hours of the airport. There is a night curfew between 23:00LT and 07:00LT (runway times not block times!) during this night curfew only specific operations (no planned commercial) are allowed on the airport (see "omzettingsregeling" and AIP).

The noise level is calculated and depends (mainly) on the aircraft type and the time of operation. The time of operation is the actual time of departure or arrival of the aircraft on the runway (called runway time). The slot times are the on/off block times of the aircraft (called block times).

At RTHA this runway time in case of an arrival will be 2-7 minutes before the block time (depending on runway, aircraft stand and taxiroute). In case of departure the runway time will be 3-7 minutes later than the block time. Be aware that RTHA is at this moment the only slot coordinated airport in The Netherlands which uses “self taxi out procedure” in case of a departure from all stand. The other Dutch (level 3) coordinated airports use a “push back procedure” from most stands. As a result of this the start-up and departure procedure for RTHA is significant different, which result in a different sequence of block time in the process and therefore the time between block times and departure times from the runway (runway times).

The calculation of noise performed via the L_{den} noise calculation. There are three different time brackets for calculating aircraft noise based on the runway time:

- Day 07:00LT – 18:59LT
- Evening 19:00LT – 22:59LT, flights operating in this time bracket are calculated 3,16 times noisier than during Day.
- Night 23:00LT – 06:59LT, flights operating in this time bracket are calculated 10 times noisier than during Day.

Therefore a change in time bracket will result in a different penalty factor and influence the number of available slots which has consequences for the optimal use of the available volume of noise.

07:00LT

The first available departure slot is 06:55LT, the first available arrival slot is 07:00LT. Since there is a night curfew between 23:00LT and 06:59LT any flight that operates in this period (except positioning flights) can be enforced by the inspectorate as a violation of the “omzettingsregeling”. Extra measures are not required to safeguard an optimal use of the volume of noise.

19:00LT

Both arrival and departure flights can be scheduled before and after 19:00LT. There is no parameter in the declared capacity to restrict either period. Since the difference between “day” and “evening” is relatively small and can happen both ways (day slots which result into evening runway time or evening slots which result into day runway time) no specific tolerance restrictions are advised around 19:00LT

23:00LT

Departures after 23:00LT runway times are subject to special limitations and are generally not allowed. Any departure of a commercial flight will be reported to the inspectorate. Therefore hardly any commercial flight departs after 23:00LT and the inspectorate has sufficient legal instruments to act if required. Therefore no additional tolerance restrictions are needed for departing flights around 2300LT.

Regarding arrivals the situation is different. The latest available slot time is 22:55LT, this should result in a runway time no later than 22:53LT. Any runway time after 22:59LT is therefore at least 7 minutes late. Arrivals are allowed after 22:59LT in case of delay. Arrival after 22:59LT will result in a night penalty (10x) and therefore result in an sub optimal use of the noise volume (reduction of 6,84 flights during the day period).

A change of aircrafttype (producing other noise levels) in operation compared the declared slot is regarded by the slot coordinator as a misuse of the slot, no additional measures are therefore required.

Summary on this parameter: Sub optimal use of the volume of noise occur mainly when a flight is operated after 22:59LT (runway time). The resulting reduction of capacity is the same for any delay.

Parameter: Terminal capacity departures

Passengers report themselves at the airport based on the departure time issued on their ticket. The time on the ticket should relate to the slot time for the flight. When the time on the ticket clearly deviates from the slot time and this is the case for more than 1 consecutive week this could be a case of repeated and intentional abuse. Such a deviation can occur when the requested slot time could not be allocated due to insufficient terminal capacity during a departure peak.

If the ticket and slot times are corresponding then a delay is usually not intentional. A departure delay results in passengers remaining in the departure hall longer than anticipated. Especially during a departure peak this can easily result in congestion of the departure facilities and is therefore considered a risk to the smooth operation of other flights.

Parameter: Terminal capacity arrivals

The process time of an arrival flight in the terminal is much shorter than for a departure flight. Therefore a shift in arrival time can result into significant changes to the operation. However this can work both way: when to concurrent flights move away from each other the operation can be smoother, when they come closer to each other the operation can turn more difficult.

Therefore it is difficult to make a clear determination when operational damage occur is a flight is operated off slot. General rule is that in case an arrival peak changes in time are likely to cause more problems in the operation then outside a peak period.

Parameter: Aircraft stands

The use of an aircraft stand is determined by the two slot times which relate to the turnaround of an aircraft at RTHA: the arrival slot and the subsequent departure slot of the same aircraft. Generally it is known in advance which arrival and departure slot are related. However with based operations aircraft can be switched on the day of operations due to delays or aircraft defects. At RTHA all aircraft stands are equal (no buffer stands) and therefore there is no towing of aircraft on the commercial apron.

When an aircraft stands remains occupied longer than planned this can result in a shortage of available stands. There are two ways this can happen:

1. The arrival flights comes in earlier than planned. It could occur that all stands are occupied. The incoming aircraft has to wait on a taxitrack (which will be blocked) before handling can start. It could also occur that another aircraft stand is available but not the originally planned aircraft stand. This can lead to a sub optimal parkingstand and therefore a sub optimal operation (for example leading to last minute unexpected extra bus movements)
2. The departing flight is delayed. The departing flight itself has no problems since it is already at the stand. An arriving flight can have the same problems as mentioned under 1.

Since the current system of ACNL is not designed of coordinating the aircraft stands therefore no specific tolerance restrictions are yet advised for this parameter.

Conclusion regarding time of operation

At RTHA there are busy peak periods but also long off-peak periods. The effects of flying off-slot to the operation is much related to whether it occurs in a peak or off-peak period. The only exception to this is a delayed operation after 23:00LT (runway) which always result in a sub optimal use of the annual noise volume.

Peak and off-peak periods can be determined by the airport at the start of the “use it or lose it”-rule. It is proposed that the peak periods will include the periods where:

- Minimal 70% of departure or arrival capacity is used (determined separately)
- The use over 70% lasts minimal 30 minutes.

All other times are considered to be off-peak.

Peak times will be sent by the airport to ACNL within 1 month of the Historic Baseline Date and will be published by ACNL on their website within 2 weeks after receiving the information from the airport.

Time tolerance on slots is advised to be 30 minutes in general but is reduced to 15 minutes when either the slot time or the actual block time lies within a peak-period.

Slot tolerance regarding destination

When a departure slot is allocated to a Schengen destination but the flight is operated to a non-Schengen destination (where immigration is required) this can result into operational issues when the parameter for maximum number of non-Schengen departure passengers is exceeded.

The other way around is also possible when a slot allocated for a non-Schengen destination is used for a Schengen flight. This could result into refusal or retiming of a slot for another non-Schengen flight when there would be enough non-Schengen capacity available which lead to sub-optimal operations.

Therefore any change of destination from Schengen to non-Schengen or vice versa in a departure peak is considered to be unacceptable.

Advice for slot tolerance RTHA

Determination of peak periods

- RTHA determines the peak periods per season within 1 month after the start of the Historics Baseline Date (HBD). This is based on the slots allocated at the moment of the HBD (31 jan / 31 aug). Changes in slots which occur after the HBD will not alter the peak periods under normal circumstances.
- Peak periods can be different for arrivals and departures
- Peak periods are defined as periods where during 30 consecutive minutes more than 70% of any capacity parameter (split in arrival and departure) has been allocated.
- ACNL will publish these peak periods within 2 weeks after receiving the information from the airport.

Basic slot tolerance (commercial traffic):

- Flights which are operated more than 30 minutes off the allocated slot time
- Any flight operated after 22:59LT (runway time)

Slot tolerance during peak periods (commercial traffic):

- Flights which are operated more than 15 minutes from the allocated slot time
- Any flight operated after 22:59LT (runway time)
- Change of destination for a departure flight from Schengen to non-Schengen or vice versa

	Peak period	Off peak period
Commercial traffic (excluding position flights after 06:00LT) operated between 23:00lt and 06:59LT (runway time)	Always	Always
Deviation between slot time and actual block time	More than 15 minutes	More than 30 minutes
Change of destination Schengen to non-Schengen or vice versa	Always	n/a

Note: an operation is only off peak if both the slot time and the actual block time are both in an off peak period.