

Aerodrome Techniques

Departure separation

General

Departure separation often has a major effect on the handling capacity of an aerodrome. Effective use of departure separation and departure sequence planning maximizes efficiency while still complying with minimum time-based separation requirements.

Applying separation

It is often impractical to try to time the separation based on the rotation of the aircraft, as the controller must know exactly when each aircraft will rotate, and requires them to keep a close eye on the take-off roll of the aircraft which is often impractical, especially during times of high traffic workload.

In order to minimize workload while still maximizing efficiency, the separation must be applied to the start of the take-off roll, as opposed to the rotation point. This is much easier to do and allows the controller to focus elsewhere in between take-off clearances.

For example, if the separation requirement between two aircraft is 2 minutes, the controller must start a 2-minute timer as soon as the preceding aircraft commences the take-off roll and deliver the next aircraft's take-off clearance such that the second aircraft commences their take-off roll exactly 2 minutes after the first.

The time taken for a pilot to read back the instruction and commence a take-off roll is usually 15 seconds, so the take-off clearance in this example must be delivered 1 minute and 45 seconds after the first aircraft has commenced its take-off roll to ensure efficient use of departure separation.

Departure sequence

General

Effective planning of the departure sequence ensures that the average delay experienced on the aerodrome is minimized, maximizing aircraft throughput. If done correctly, this ensures that in most instances the separation required between successive take-offs is minimized.

Planning the departure sequence

In general, ensuring that aircraft on the same departure are always paired with an aircraft on a departure in a different direction will minimize average delay. Where there are different weight categories of aircraft, aircraft should in general be paired with an aircraft of the same category.

Revision #1

Created 11 October 2024 02:07:05 by Ali

Updated 27 January 2025 04:21:12 by Ali