Tower

Determining the Active Runway

Controllers should determine the active runway based on the following factors:

1. **Winds** – Choosing the runway with the largest headwind component.
2. **Runway length/characteristics** – If the headwind component between two runways is similar, choosing the one which is longer, or which has an ILS, etc.
3. **Local procedures** (e.g., preferred runway for noise abatement, if one exists.)

Flexibility should also be granted where possible. Traffic permitting, one should make all reasonable efforts to accommodate any requests from pilots to use non-active runways.

Control Zone (CTR)

In addition to the runways, TWR is also responsible for the Control Zone (CTR), the airspace immediately surrounding their airport. This includes controlling VFR arrivals, departures, and aircraft in the circuit. See the VFR Guide for more information.

Takeoff Clearances

Takeoff clearances must not be issued unless all departing traffic ahead has crossed the end of the runway or begun a turn, and any arriving traffic ahead is clear of the runway. The only exception is if reduced runway separation minima (RRSM) is being applied; see below.

The takeoff clearance should include:

- Winds

- Departure runway
- *(Intersection departures only)* The runway intersection
- *(IFR departures only)* The next ATS unit which the aircraft will be contacting.
  - This may be omitted if one is covering TWR top-down.

For example:

> FNA102, when airborne contact Keflavik Approach on 119.300, winds 170 degrees 12 knots, runway 19 from S, cleared for takeoff.

For VFR departures, the takeoff clearance should include the flight's VFR clearance to join the circuit, VFR route, or leave the control zone. See the VFR Guide for examples.

Taxiing on the Runway

Any taxiing or backtracking on the runway shall be conducted on the TWR frequency. TWR shall transfer the aircraft back to GND once it is clear of the runway.

Departure Separation

Fixed-wing aircraft departing on the same route must have at least **5 NM** constant or increasing separation in trail. TWR and APP shall be jointly responsible for ensuring this.

Wake turbulence separation must be applied between departures when the second (trailing) aircraft is a lighter WTC than the first (preceding) aircraft, and they are using:

- The same runway
- Parallel runways separated by less than 760m (2500ft)
- Intersecting runways, if the projected flight path of the second aircraft will cross the projected flight path of the first aircraft at the same altitude or less than 300m (1000ft) below
- Parallel runways separated by 760m (2500ft) or more, if the projected flight path of the second aircraft will cross the projected flight path of the first aircraft at the same altitude or less than 300m (1000ft) below.

> At the time of writing, no airport under the Reykjavik CTA currently has parallel runways.

A minimum time separation shall be applied as follows:

MINIMUM TIME-BASED SEPARATION FOR DEPARTURES					
		First (Preceding) Aircraft			
		Light (L)	**Medium (M)**	**Heavy (H)**	**Super (J)**
Second (Trailing) Aircraft	**Light (L)**	—	2 min	2 min	3 min
	Medium (M)	—	—	2 min	3 min
	Heavy (H)	—	—	—	2 min
	Super (J)	—	—	—	—

One should further add **1 minute** to the wake turbulence separation time after any departures from an intermediate point. Touch-and-goes are considered to be departures from an intermediate point. E.g.,

- A Light departure behind a Heavy departure from an intersection requires 3 mins of separation.
- A Medium aircraft behind a Super aircraft doing a touch-and-go requires 4 mins of separation.

> To maximize efficient use of the runway, if two departures require either wake turbulence or route separation, TWR should utilize the delay time between the two aircraft to allow other aircraft not requiring separation to depart.

Landing Clearances

Landing clearances must not be issued unless all departing traffic ahead has crossed the end of the runway or begun a turn, and any arriving traffic ahead is clear of the runway. The only exception is if reduced runway separation minima (RRSM) is being applied; see below.

A landing clearance shall contain the current winds, the arrival runway, and the phrase “cleared to land.” For example:

> ICE403, winds 190 degrees 6 knots, runway 19, cleared to land.

If one previously gave an aircraft the winds & landing runway in a “continue approach” instruction, and neither have changed since then, one does not need to say them again in the landing clearance.

If TWR anticipates that the aircraft will be cleared to land less than 4 NM from the airport, TWR should tell the aircraft to “expect late landing clearance.”

Reduced Runway Separation Minima

Some aerodromes in Iceland allow the use of **reduced runway separation minima (RRSM)** in some limited circumstances.

> As of the time of writing, these procedures apply only to the following aerodromes: **BIKF, BIRK, BIAR.**

Aircraft Categories

For purposes of applying RRSM, aircraft are divided into three categories:

- **Category 1:** Single-engine propeller aircraft with a maximum certificated take-off mass of 2000kg or less.
  - *E.g., Cessna 172 (C172), Diamond DA-40 (DA40), etc.*
- **Category 2:** Single-engine propeller aircraft with a maximum certificated take-off mass of more than 2000kg but less than 7000kg; and twin-engine propeller aircraft with a maximum certificated take-off mass of less than 7000kg
  - *E.g., Cessna Caravan (C208), Diamond DA-42 (DA42), etc.*
- **Category 3:** All other aircraft.

> To find an aircraft's maximum certificated takeoff weight, as well as other useful performance characteristics, one may visit the **Eurocontrol Aircraft**

> **Performance Database** at
> contentzone.eurocontrol.int/aircraftperformance/default.aspx.

Conditions for RRSM

Reduced runway separation minima is subject to the following conditions:

- Must be within the hours of **daylight** (30 mins after local sunrise to 30 mins before local sunset.)
- Shall **not** apply between a departing aircraft and a preceding landing aircraft.
- **Wake turbulence separation** minima shall be applied.
- Visibility shall be at least **5km** and ceiling shall not be lower than **300m (1000ft.)**
- Tailwind component shall not exceed **5 KTS.**
- There shall be available means to assist the controller in assessing the distances between aircraft.
  - *For VATSIM purposes, it is acceptable to use the Euroscope-provided ground radar for this purpose.*
- **Minimum separation continues to exist** between two departing aircraft immediately after take-off of the second aircraft.
- **Traffic information** shall be provided to the flight crew of the succeeding aircraft concerned.
- The **Runway Condition Code** shall not be lower than **5** on any part of the runway.

Separation to Be Applied

> For VATSIM purposes, controllers may use the Euroscope "click and drag" vector tool to measure out the distances required below.
>
> As the Euroscope vector tool shows distances in nautical miles (NM), below are some helpful rough conversions of the distances listed below into NM:
>
> • 600m ≈ **0.5 NM**
> • 1500m ≈ **1 NM**
> • 2400m ≈ **1.5 NM**
>
> *(The above conversions have been rounded up to the nearest .5, for safety and ease of memorization.)*

Landing Aircraft

A succeeding landing Category **1** aircraft may cross the runway threshold when the preceding aircraft is a Category **1 or 2** aircraft which either:

- Has landed and has passed a point at least **600m** from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
- Is airborne and has passed a point at least **600m** from the threshold of the runway.

A succeeding landing Category **2** aircraft may cross the runway threshold when the preceding aircraft is a Category **1 or 2** aircraft which either:

- Has landed and has passed a point at least **1500m** from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
- Is airborne and has passed a point at least **1500m** from the threshold of the runway.

A succeeding landing aircraft may cross the runway threshold when a preceding Category **3** aircraft:

- Has landed and has passed a point at least **2400m** from the threshold of the runway, is in motion and will vacate the runway without backtracking; or
- Is airborne and has passed a point at least **2400m** from the threshold of the runway.

Departing Aircraft

- A Category **1** aircraft may be cleared for take-off when the preceding departing aircraft is a Category **1 or 2** aircraft which is airborne and has passed a point at least **600m** from the position of the succeeding aircraft
- A Category **2** aircraft may be cleared for take-off when the preceding departing aircraft is a Category **1 or 2** aircraft which is airborne and has passed a point at least **1500m** from the position of the succeeding aircraft; and
- An aircraft may be cleared for take-off when a preceding departing Category 3 aircraft is airborne and has passed a point at least **2400m** from the position of the succeeding aircraft.

> Consideration should be given to increased separation between highperformance single-engine aircraft and preceding Category 1 or 2 aircraft.

Go-Arounds & Missed Approaches

Go-arounds may be initiated by the pilot or ATC, if either one feels that the approach cannot be safely continued. TWR must instruct aircraft to go around if they will cross the runway threshold before the aircraft ahead is airborne or clear of the runway (the only exception is if RRSM is being applied, in which case see above.)

IFR go-arounds should generally be instructed to follow the standard missed approach. If an aircraft is flying a visual approach, or is unable to follow the standard missed approach, then they should be given instructions such as a heading or visual climb, as defined by LOPs.

VFR go-arounds may simply be instructed to (re)join the circuit. This may include making an early turn onto downwind, if necessary to avoid conflicts.

> **TWR must coordinate all IFR go-arounds with Approach (APP) before transferring the aircraft back to APP!** APP may tell TWR to relay de-conflicting instructions to the go-around aircraft, such as a heading or climb/stop climb, in order to avoid conflicts with airborne aircraft.

Maintaining the ATIS

At aerodromes with an ATIS, it is TWR’s responsibility to maintain the ATIS. If TWR is offline, then APP or area control units who are covering TWR top-down shall maintain the ATIS. Only if there are no overlying APP/area control units online should GND or DEL maintain the ATIS.

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