

# Runway separation

Runway management is the main task of every tower controller. Without a runway, an airport obviously makes no sense. Not only do we have to use our runway as efficiently as possible in order to fully utilize the airport's capacity, but we also have to protect it accordingly, as the critical flight phases of take-off and landing take place there. Runway separation was introduced for this purpose. But what actually is runway separation? It's actually quite simple:

**The runway may only ever be occupied by one user at a time.**

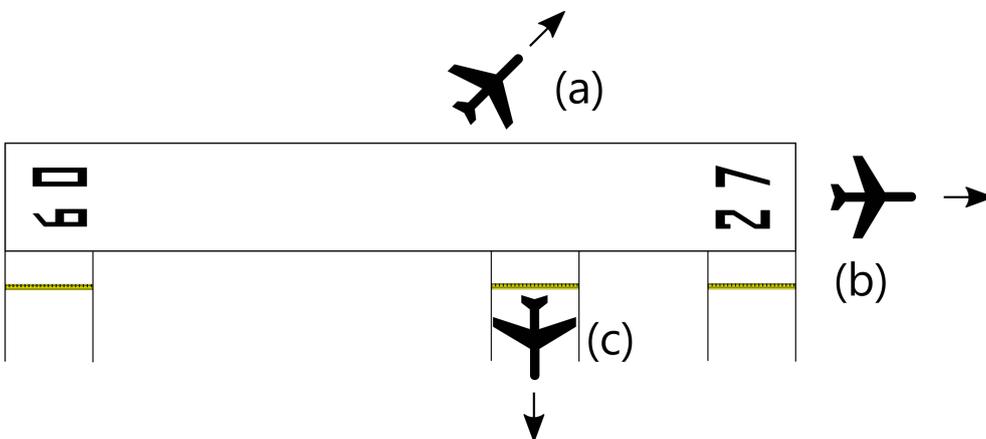
Now we just have to deal with a few more questions to clearly define the concept.

Who is considered a runway user?

- Landing aircraft (i.e. aircraft with active landing clearance)
- Aircraft taking off (i.e. aircraft with active take-off clearance)
- Vehicles on the runway e.g. inspecting the runway (not implemented on Vatsim)

How long is a user considered to be an active user of a runway and when is the runway free again for the next user?

- For aircraft taking off: The runway can be used again as soon as the departing aircraft has either
  - overflown the end of the runway (image b) or
  - vacated the runway to the side (picture a)
- For landing aircraft: The runway can be used again as soon as the aircraft has vacated the runway (image c). The runway is considered abandoned as soon as all parts of the aircraft have rolled over the stop bar of the CAT1 holding point.



An aircraft that is cleared for line-up (i.e. taxiing onto the runway, but without take-off clearance) does not count as a runway user. A line-up clearance can therefore be given in the following cases, even though the runway is still occupied according to the above criteria:

- After a landing aircraft has passed the point at which the waiting aircraft will taxi onto the runway
- After a departing aircraft has passed the point at which the waiting aircraft will taxi onto the runway

The procedure described on this page is also called “**full**” runway separation. Does this mean that there is a “half” runway separation, too? Not quite, but almost. There is also “**reduced**” runway separation (RRS), which is taught in the specific tower textbooks. A brief teaser: with reduced runway separation, under certain conditions the runway may be used more efficiently.

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