



L'anglais pour voler
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Runways

Are they really dangerous places to be ?

An airport is like a theatre where the runway would be the stage. Aircraft are the main actors, but the supporting cast is impressive. And everybody has better play their parts well! What happened in Moscow last October is just a reminder of how easily the show can go sour. But enough of the theatre analogy... Apart from seaplanes and helicopters, which can do without one, a runway is a prerequisite to most forms of air travel. It is the very sensitive area of the airport where all aircraft converge but should never meet, except under extreme supervision. Because of the essential equipment needed to make it operational, a runway also attracts many terrestrial vehicles as well as workers in charge of maintenance, inspection, repairs, cleaning and so on.

A few basic facts

Many elements are taken into account when deciding the orientation of a runway. The first that comes to mind is the direction of the prevailing wind. But other factors such as topography, obstacles, residential areas or pre-existing air traffic facilities in the vicinity are also analyzed.

Runways are named after their magnetic direction rounded off to the nearest 10°, with the last zero omitted. The resulting 2-digit number, known as the runway designator, is painted on the threshold, with an additional letter in case of parallel runways.

Since the magnetic north shifts year by year, the magnetic compass heading of a runway

changes too. And from time to time, the runway designator has to be recalculated. Incidentally, this is what happened recently at Jersey airport where they started operating runway 08/26 on October 16.

The physical characteristics of a runway (e.g. length and bearing strength), and its equipment, for instance the ILS category, determine the type of traffic an airport will get. Atlanta, the world's busiest airport, only has a few taxi restrictions for group VI aircraft, i.e. with a wingspan greater than 214 feet, as is the case of the Galaxy C-5 or the Antonov 124⁽¹⁾. At the other end of the spectrum Redhill, near London, with its four grass runways is « *subject to waterlogging* »⁽²⁾, which means that its access is sometimes restricted to helicopters. Given that aircraft travel at high speeds on the runway, and that take-off and landing are critical phases of the flight, many incidents can occur there and then.

Runway excursions

A runway excursion is not a trip you take to visit the runway. As the ICAO definition goes, it's « *a veer off or overrun off the runway surface* ». The term covers: overrun on take-off or landing, loss of directional control, and undershoot on landing. Wrong runway use is sometimes also included in this category. Runway excursions happen for a number of reasons. In the long list posted on the Skybrary internet site⁽³⁾, one can single out speed or weight of the aircraft, a rejected take-off, crosswinds, and/or runway contamination with water, ice or snow.

Runway incursions

Whereas runway excursions concern only aircraft, vehicles or pedestrians can also be involved in runway incursions. They are recurring incidents on airports and have been identified as one of the most serious threats to flight safety for years, to the extent of prompting ICAO and Eurocontrol to set up working groups and action plans, and to

issue recommendations, checklists and safety toolkits⁽³⁾. Fortunately, runway incursions don't often have such dramatic outcomes as in Moscow. They can even have no operational impact at all. But most of the time, they cause missed approaches, rejected take-offs or very close calls.

ATC error, misidentification of runways, poor communications or inadequate phraseology, ground navigation error, call sign confusion are, in no particular order, some of the factors that can lead to runway incursions. On an airport, some areas are more prone to incidents than others. It is the reason why ICAO advocates for the identification and publication on aerodrome charts of hot spots, the definition of a hot spot being : « *A location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary* ». Poor visibility or work in progress in the vicinity of the runway can significantly increase the risk of such an event. In its European Action Plan for the Prevention of Runway Incursions⁽⁴⁾, Eurocontrol provides to each category of professionals operating on a platform (ATC, pilots, vehicle drivers) an extensive list of recommendations to improve statistics on runway incursions. Some of these recommendations can be put into effect on a short term basis (training, refresher courses, awareness campaigns). Others, such as airport design improvements, need more risk assessment and planning before implementation.

As Eurocontrol's recommendation 1.4.13 goes: « *If there is any doubt when receiving a clearance or instruction, clarification should be requested immediately from Air Traffic Control* ». All the more so in a foreign country, where speaking an unfamiliar language may add to your confusion. "Better repeat than be sorry" should be everyone's motto, ... and not just for runway entry clearances.

A CLOSE CALL.....	un incident évité de justesse
E.G. (exempli gratia).....	par exemple
TO GO SOUR.....	mal tourner
I.E. (id est).....	c'est-à-dire
INCIDENTALLY.....	d'ailleurs
A PREREQUISITE.....	une condition préalable
TO BE PRONE TO.....	être sujet à
TO SHIFT.....	se décaler
A VEEER OFF THE RUNWAY.....	une sortie de piste
WATERLOGGED.....	saturé d'eau

(1) www.airnav.com/airport/KATL (2) www.nats-uk.ead-it.com/public/index.php.html (3) www.skybrary.aero/index.php/Main_Page
(4) www.skybrary.aero/bookshelf/books/151.pdf