

Displaced threshold wake turbulence separation issues

WakeNet Europe
Langen Feb 2012

Isa Alkalay



Content

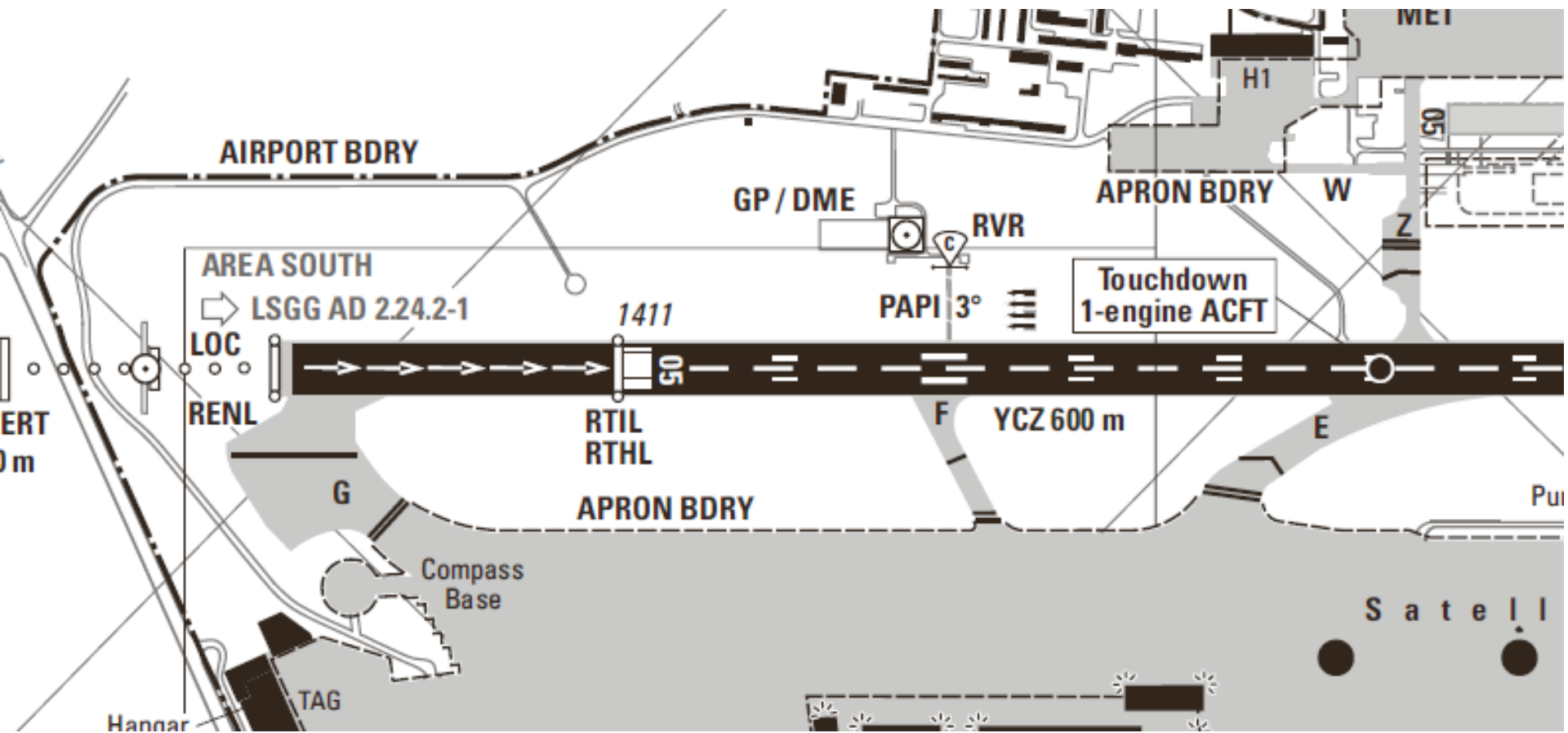
- Existing regulation/situation
- Problem
- Snap-shot of application
- Solution

Existing regulation/situation

ICAO P-ATM § 5.8.4:

A separation minimum of 2 minutes shall be applied between a LIGHT or MEDIUM aircraft and a HEAVY aircraft and between a LIGHT aircraft and a MEDIUM aircraft when operating on a runway with a displaced landing threshold when:

- a) a departing LIGHT or MEDIUM aircraft follows a HEAVY aircraft arrival and a departing LIGHT aircraft follows a MEDIUM aircraft arrival; or
- b) an arriving LIGHT or MEDIUM aircraft follows a HEAVY aircraft departure and an arriving LIGHT aircraft follows a MEDIUM aircraft departure if the projected flight paths are expected to cross.



Today **always 2min** separation **regardless** of the flight paths crossing or not, and **regardless** of the displacement



Follower



ICAO Applied	ICAO Not Applied	Un-clear	Comment
Italy			+ additional between two heavies also. Calculated into the Capacity .
Sweden			Always – even when it is temporary and regardless of the displacement. Capacity affected.
	NATS		Cap493 supplementary instruction 200-04 amended the NATS section 2 § 3.7.2 and ICAO provision under a) and moved the "if the projected paths are expected to cross." To be applicable for both a) and b):
Brussels			Aircraft actually taxi to the displaced threshold and take off from there. Capacity affected.
Norway			Increased - the LIG (level end ELEV) to 3 minutes. Capacity affected.
Serbia			AFT taxiing to the displaced threshold – TWY available to facilitate exit at the level of the displaced THR. Displacement 400
		Major EU ACP	The provision of 2 minutes to be applied always, however there is a number of airports where there is operational practice is to apply these two minutes only if the flight paths are not expected to cross.
ICAO			The ANNEX14 definition simply defines displaced threshold as any threshold not located at the runway end and therefore there is no displacement distance minimum.
ECTRL			Intention is to include the provision into SERA-C
	FAA		Crossing paths are used as the criterion in both a) & b) cases. However, every displacement greater than 500ft is treated as the intersection departure and an additional minute is added.

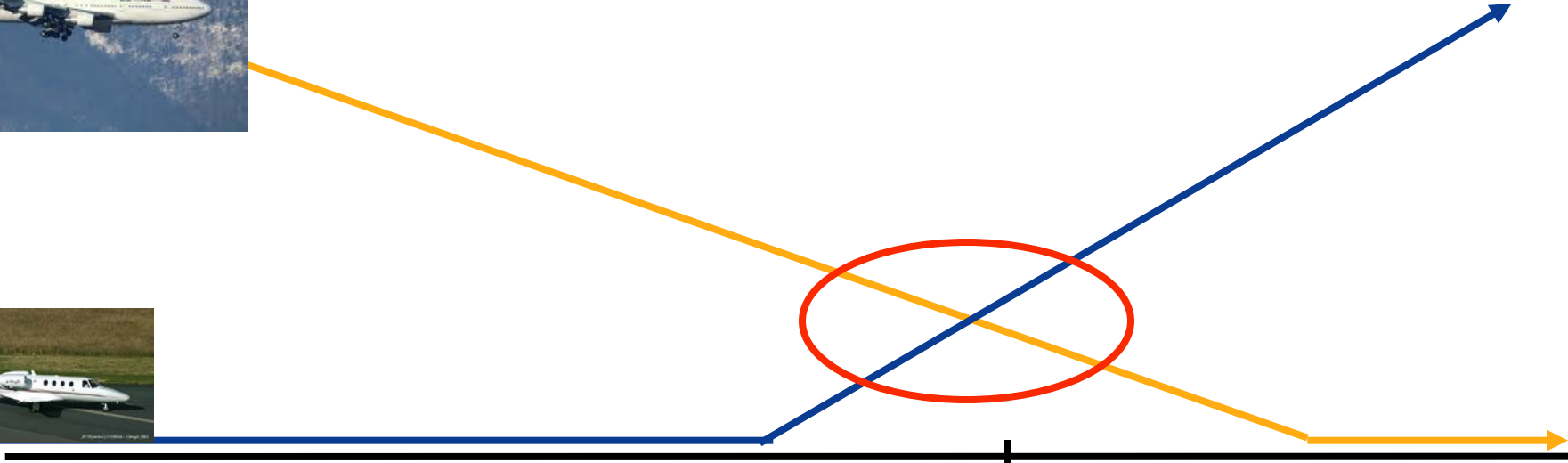
Added complexity

Tomorrow

If the projected flight paths are expected to cross a separation minimum of 2 minutes shall be applied between a LIGHT or MEDIUM aircraft and a HEAVY aircraft and between a LIGHT aircraft and a MEDIUM aircraft when operating on a runway with a displaced landing threshold when:

a) a departing LIGHT or MEDIUM aircraft follows a HEAVY aircraft arrival and a departing LIGHT aircraft follows a MEDIUM aircraft arrival; or

b) an arriving LIGHT or MEDIUM aircraft follows a HEAVY aircraft departure and an arriving LIGHT aircraft follows a MEDIUM aircraft departure. ~~if the projected flight paths are expected to cross.~~



2 minutes **only** if the projected flight paths are **expected** to cross

ICAO Applied	ICAO Not Applied	Un-clear	Comment
Italy			+ additional between two heavies also. Calculated for the c [REDACTED]
Sweden			Always – even when it is temporary and changes of the displacement. [REDACTED]
	NATS		Cap493 supplementary instruction 09/04 modified the UK MATS section 2 § 3.7.2 and ICAO provision under a) and moved the <i>flight paths are expected to cross.</i> "To be applicable for both a) and b):
Brussels			Aircraft actually taxi to the displaced threshold and take off from there. [REDACTED]
Norway			Increased - the ICAO behind HEAVY to 3 minutes. [REDACTED]
Serbia			Only taxi to the displaced threshold – TWY available to facilitate exit at the level of the displaced threshold. Displacement 400m.
			The regulation is clear - 2 minutes to be applied always, however there is a number of airports where real operational practice is to apply these two minutes only if the flight paths are not expected to cross.
ICAO			The ANNEX14 definition simply defines displaced threshold as any threshold not located at the runway extremity and therefore there is no displacement distance minimum.
ECTRL			Intention is to include the provision into SERA-C
	FAA		Crossing paths are used as the criterion in both a) & b) cases. However, every displacement greater than 500ft is treated as the intersection departure and an additional minute is added.

Added complexity

Thank you for your attention



Questions?