

09SAB09

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ATC ordered takeoff aborts – a clarification

Background

As we are all aware the take off roll is one of the most critical phases of flight and that the decision to abort a takeoff especially close to V1 is a very critical one. This is why so much time in recurrent simulator training is spent in the evaluation and assessment of failures at speeds near V1 enhancing a crews ability to arrive at the best (or in some cases least worst) solution for the aircraft they are operating.

However recent changes to the sections of PANS-ATM that deal with ATC instructions and information transmitted to aircraft about runways that become obstructed have raised concerns.

According to the latest version of the document, an Air Traffic Control Officer (ATCO) may instruct a crew to abort a take off after the aircraft has begun its takeoff roll.

In the earlier version of PANS-ATM (Doc. 4444) an ATCO was required to “inform the aircraft involved of the obstruction and its location in all cases” but could only withdraw take off clearance from an aircraft which was yet to start its takeoff roll. In the case of an already rolling aircraft the decision to abort rested solely with the commander of the aircraft.

In the latest version the relevant section has been amended and now reads:

7.4.1.4 RUNWAY INCURSION OR OBSTRUCTED RUNWAY

7.4.1.4.1 *In the event the aerodrome controller, after a take-off clearance or a landing clearance has been issued, becomes aware of a runway incursion or the imminent occurrence thereof, or the existence of any obstruction on or in close proximity to the runway likely to impair the safety of an aircraft taking off or landing, appropriate action shall be taken as follows:*

- a) *cancel the take-off clearance for a departing aircraft;*
- b) *instruct a landing aircraft to execute a go-around or missed approach;*
- c) *in all cases inform the aircraft of the runway incursion or obstruction and its location in relation to the runway.*

...further adds the following phraseology in section 12.3.4.11:

*... to stop a take-off after an aircraft has commenced take-off roll
aircraft call sign STOP IMMEDIATELY [(repeat aircraft call sign) STOP IMMEDIATELY];*

Which implies that the final decision for the abort rests with the controller.

This is not the case.

As always, the final authority for decisions relating to the operation of an aircraft and its safety rests with the aircraft commander. As ICAO Annex 6 (Operation of Aircraft) 4.5.1 states:

“...The pilot-in-command shall also be responsible for the operation and safety of the aeroplane from the moment the the aeroplane is ready to move for the purpose of taking off until the moment it finally comes to rest at the end of the flight and the engines used as primary propulsion units are shut down...”

Of course, the ATCO will have a very good reason for calling for the abort – a runway incursion for example. However, it is also very likely that the ACTO will not have the benefit of all the information critical to the aircraft's performance. A controller cannot be expected to know to within a knot what speed an aircraft has reached at a given point in its take off roll? Visually estimating the actual speed (and energy state) of an aircraft from its apparent speed is hardly scientific. For example, in a recent case in Germany, ATC issued an abort instruction to a CRJ200 which had reached 110kts (because a car had entered the runway), but other than those privy to both the load sheet and all the other temperature, and elevation variables who can say what that speed means in terms of flight or rejected takeoff performance to that aircraft on that day and on that runway? Clearly, vesting the final decision for the abort with any individual without the benefit of this information is ridiculous.

Recommendation

Crews should be aware that in addition to informing them of runway obstructions or incursions during the take off roll ATC may call for an abort using the phrase "STOP IMMEDIATELY" authoritative as this may sound, crews should be careful to always consider the energy state of their aircraft and its performance before attempting to comply with the instruction.

REMEMBER

The final decision for the abort rests with the pilot-in-command

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