

Appendix C

AIR TRAFFIC CONTROL BEST PRACTICES

1. AIM OF THIS APPENDIX

1.1 The aim of this appendix is to highlight some of the causal or contributory factors that have resulted in runway incursions and which were identified during a runway safety survey in Europe in 2001. It is usually the responsibility of the air traffic service provider to put best practices in place to prevent runway incursions.

1.2 While the use of the language normally used by the station on the ground or the English language¹ is allowed, the use of standard aviation English at international aerodromes enhances the situational awareness of all those listening on the frequency.

2. CLEARANCES

2.1 Whenever possible, an en-route clearance should be passed to an aircraft before the start of taxi. If this is not possible, controllers should try to avoid passing the clearance to a pilot engaged in complicated taxiing manoeuvres near the runway due to the possibility of distraction.

2.2 An en-route clearance does not authorize the pilot to take off or enter an active runway. The words “take off” shall be used only when an aircraft is cleared for take-off, or when cancelling a take-off clearance.

3. READBACK REQUIREMENTS

3.1 Readback requirements were introduced in the interest of flight safety. The stringency of the readback requirement is directly related to the possible seriousness of misunderstandings in the transmission and receipt of ATC clearances and instructions. Strict adherence to readback procedures ensures that the clearance or instruction has been received and understood correctly by the correct aircraft.

3.2 The flight crew must read back to the air traffic controller the safety-related parts of ATC clearances and instructions. The air traffic controller is responsible for checking the completeness and accuracy of the readback.

3.3 In accordance with Annex 11, the following items shall always be read back:

- a) ATC route clearances;

1. ICAO language requirements for air-ground radiotelephony communications are shown in Annex 10 — *Aeronautical Telecommunications*, Volume II, Chapter 5, and Annex 1 — *Personnel Licensing*, Chapter 1 and Appendix 1.

- b) clearances and instructions to enter, land on, take off from, hold short of, cross and backtrack on any runway; and
- c) runway-in-use, altimeter settings, SSR codes, level instructions, heading and speed instructions and, whether issued by the controller or contained in ATIS broadcasts, transition levels.

Other clearances or instructions, including conditional clearances, shall be read back or acknowledged in a manner to clearly indicate that they have been understood and will be complied with.

3.4 An aircraft must include its call sign in the readback, and failure to do so should be challenged by the controller.

3.5 PANS-ATM (Doc 4444), 4.5.7.5.2, states:

“The controller shall listen to the readback to ascertain that the clearance or instruction has been correctly acknowledged by the flight crew and shall take immediate action to correct any discrepancies revealed by the readback.”

This requirement constitutes an essential cross-check to confirm correct understanding of a clearance or instruction or part thereof by flight crews and vehicle drivers. This closed loop supports the safety and redundancy of pilot/vehicle-driver/controller communications, and whenever adverse factors are likely to affect communications, strict adherence to this closed loop constitutes an important line of defence against communication errors.

4. TAXI INSTRUCTIONS

4.1 Taxi instructions issued by a controller must always contain a clearance limit, which is the point at which the aircraft must stop until an instruction to proceed is given. For departing aircraft, the clearance limit will normally be the runway-holding point of the runway in use, but it may be any other position on the aerodrome, including runway intersections, depending on prevailing traffic circumstances. When intersection departures are used, the appropriate runway-holding points shall be clearly identified by ATC.

4.2 When a taxi clearance contains a taxi limit beyond a runway, it must contain an explicit clearance to cross that runway, even if the runway is not in use. Where an expected or anticipated runway crossing is required, a means of communicating this to the pilots, at the gate or prior to descent, should be established.

4.3 Communication with any aircraft related to the use of a runway for the purpose of taxiing should be transferred from the ground controller to the aerodrome controller prior to the aircraft entering or crossing a runway.

4.4 It is strongly advised, when practicable, to use standard taxi routes. For more complicated taxi instructions, it may be appropriate to divide the message into segments, placing the clearances and instructions in sequential order, to avoid the possibility of pilot misunderstanding.

5. STOP BARS

5.1 Annex 2, 3.2.2.7.3, states:

“An aircraft taxiing on the manoeuvring area shall stop and hold at all lighted stop bars and may proceed further when the lights are switched off.”

This Standard applies both to runways and taxiways where fitted with stop bars. The objective of this Standard is to maintain the integrity of the stop bars, which are intended to protect the relevant part of a manoeuvring area.

5.2 PANS-ATM (Doc 4444), 7.14.7, states:

“Stop bars shall be switched on to indicate that all traffic shall stop and switched off to indicate that traffic may proceed.”

As such, a controller should never issue a clearance to cross a stop bar without first switching off the stop bar. The only exception to this should be when contingency measures are required due to unserviceability. An example of a contingency measure is the use of a follow-me vehicle.

6. TAKE-OFF PROCEDURES

At aerodromes with separate ground control and aerodrome control functions, aircraft are transferred to the tower at or approaching the holding point. Since misunderstandings in the granting and acknowledgement of take-off clearances can result in serious consequences, care should be taken to ensure that the phraseology employed during the taxi manoeuvres cannot be interpreted as a take-off clearance.

7. POSITION HANDOVER

NAV CANADA in its runway safety survey found that a significant percentage of incidents involving ATC operational errors takes place after a controller position handover takes place. To ensure that the complete traffic situation is included in a position handover, the use of a standardized handover checklist should be considered.
