

APPENDIX N

INTERPRETING EVENTS – RUNWAY INCURSION?

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APPENDIX N

INTERPRETING EVENTS – RUNWAY INCURSION?

The purpose of this Appendix is to aid interpretation of runway events using the ICAO definition of runway incursion introduced in November 2004 which is:

“Any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft”

Whilst the definition has been widely accepted - and no change to it is proposed - it has become very apparent that determining whether an event is a runway incursion or not is still very subjective and opinions vary considerably.

In an attempt to provide additional clarity and consistency of interpretation of the ICAO definition, this edition of the EAPPRI contains an expanded table of runway incursion and/or runway safety events as assessed by a representative working group of aviation stakeholders.

This aid to interpretation will not guarantee complete consistency but will increase the level of uniformity from the current situation. The following explanations are intended to provide further clarification to ease common understanding of this definition:

“Incorrect presence” This should be interpreted as the unsafe, unauthorised or undesirable presence, or movement of, an aircraft, vehicle or pedestrian.

“Protected area of a surface designated for the landing and take-off of aircraft”.

This is to be interpreted as the physical surface of a runway, from the centreline to the holding point appropriate to the type of runway. Where operations are being conducted during Low Visibility operations this should be the holding point appropriate to the procedures in force.

Note: Further considerations about the Protected Area are covered later in this appendix.

Whether they are interpreted as runway incursions or not, **all runway related safety events should be reviewed/ investigated**, in order to learn lessons and put measures in place to prevent recurrence. It is through this process that safety improvements can be made.

Crossing a red stop-bar does not necessarily mean a runway incursion. However, the working group strongly supports that the message **“never cross a red stop bar”** is widely disseminated and practised.

TABLE TO ASSIST IN DETERMINING IF A RUNWAY INCURSION HAS OCCURRED

Example	Runway Safety; Runway Incursion	Runway Safety Event; Not Incursion	Rationale
An aircraft vehicle or pedestrian is cleared correctly to enter or cross a runway and proceeds as cleared but does not read back the clearance		Yes	There is no incorrect presence. Failing to read back does not create an incursion.
An aircraft is cleared correctly to land or take-off and proceeds as cleared, but does not read back the clearance.		Yes	There is no incorrect presence. Failing to read back does not create an incursion.
Aircraft lands without clearance being issued by the controller	Yes		This is an incorrect presence.
Aircraft lands without clearance being received by the flight crew, having been issued by ATC.		Yes	If ATC have given the clearance, there is no incorrect presence.
Aircraft lands without clearance being received by the flight crew, after a go-around instruction from ATC.	Yes		Once a go-around instruction is given it is an incorrect presence to land on the runway.
Aircraft lands without clearance and evidence shows that the pilot was acting appropriately in accordance with Loss of Communication procedures due to R/T failure.		Yes	
Aircraft takes off without clearance	Yes		The aircraft was only cleared to line up. Thus it is an incorrect presence once take-off is commenced.
An aircraft vehicle or pedestrian enters runway without clearance	Yes		This is an incorrect presence.
An aircraft, vehicle or pedestrian is cleared to enter the runway and does so as instructed and intended, but before the red stop bar has been “dropped”. (This also applies to traffic lights where so positioned)		Yes	There is no incorrect presence as ATC clearance to enter has been given. However, pilots/drivers shall not cross illuminated red stop bars . If the stop bar does not extinguish, pilots and drivers must check with the controller before proceeding.
An aircraft, vehicle or pedestrian crosses a red stop-bar without ATC	Yes		It is an incorrect presence

Example	Runway Safety; Runway Incursion	Runway Safety Event; Not Incursion	Rationale
clearance			
An aircraft vehicle or pedestrian enters the runway at the incorrect holding point.	Yes		At this location on the runway it is an incorrect presence.
An aircraft vehicle or pedestrian vacates the runway at the incorrect holding point.		Yes	There is no incorrect presence on the runway
Controller incorrectly clears an aircraft, vehicle or pedestrian to enter or cross a runway and the runway is entered. I.e. the controller issues a clearance he wouldn't have issued if he was conscious of the whole situation.	Yes		It is the movement onto the runway or protected area that creates the incorrect presence – not the incorrect RT transmission. The RT transmission does not mean an RI occurs at that moment.
Controller incorrectly clears an aircraft to land or take-off. I.e. the controller issues a clearance he wouldn't have issued if he was conscious of the whole situation.	Yes		It is an incorrect presence. It is the movement onto the runway or protected area that creates the incorrect presence – not the incorrect RT transmission. The RT transmission does not mean an RI occurs at that moment.
Aircraft lines up out of sequence	Yes		It is an incorrect presence
Taxiway green lights are selected along a route onto the runway but the ATC clearance is only part way along that route and the a/c or vehicle proceeds on to the runway beyond the stated clearance limit.	Yes		It is an incorrect presence
Two aircraft are correctly present on the runway after lining up: one for full length departure at the beginning of the runway and the other for an intersection take-off. The controller erroneously gives a take-off clearance to the aircraft at the beginning of the runway. The pilots of the aircraft realise the error, communicate it with the controller and do not start to move.		Yes	There is no incorrect presence.
Two aircraft are correctly present on the runway after lining up: one for full length departure at the beginning of the runway and the other for an intersection take-off. The controller erroneously gives a take-off clearance to the aircraft at the beginning of the runway. The pilots of the aircraft do not realise the error and the full length departure starts to roll.	Yes		It is an incorrect presence

Example	Runway Safety; Runway Incursion	Runway Safety Event; Not Incursion	Rationale
An aircraft is cleared to take-off and a vehicle is on the runway correctly and the pilot recognises the situation and refuses to move.		Yes	There is no incorrect presence
An aircraft is cleared to take-off and a vehicle is on the runway correctly and the aircraft commences its take off roll.	Yes		It is an incorrect presence once the aircraft begins its take-off roll.
Aircraft, vehicle or pedestrian crosses a red stop bar but stays outside of the protected surface of the runway (e.g. stop bar at Cat III position but Low Visibility conditions not present)		Yes	No incorrect presence on the runway or protected area. However, pilots/drivers shall not cross lit red stop bars and shall check with the controller.
An aircraft taxis up to a runway holding point and stops, with all undercarriage short of the holding point but the nose/radome is beyond the holding point.	Yes		It is an incorrect presence
During Cat III operations a vehicle enters the Cat III runway strip without ATC clearance.	Yes		It is an incorrect presence
During Cat I operations a vehicle enters the Cat I runway strip without ATC clearance.	Yes		It is an incorrect presence
A vehicle convoy is cleared by ATC to enter the runway, but the stop-bar comes back on before the last vehicle has crossed the holding point.		Yes	As the convoy was cleared to enter, there is no incorrect presence. However, pilots/drivers shall not cross lit red stop bars and shall check the status of the stop bar with the controller before proceeding.
A pilot lands an aircraft on a runway NOTAM'd as closed.		Yes	If the runway is NOTAM'd as closed, it is not a runway.
Two airfield ops vehicles and 2 fire service vehicles call ATC and obtain permission to enter the runway correctly which is done. Another vehicle joins the back of the convoy without communication and 5 vehicles cross the runway.	Yes		In this example the 5th vehicle is an incorrect presence.
At night a departing aircraft is given a conditional line up clearance at the correct holding point which is read back correctly. The aircraft enters the runway at the correct time in terms of the conditional clearance, but in doing so crosses a lit stop-bar.		Yes	There was no incorrect presence. However, pilots/drivers shall not cross lit red stop bars and shall check the status of the stop bar with the controller before proceeding.

Example	Runway Safety; Runway Incursion	Runway Safety Event; Not Incursion	Rationale
An aircraft enters the runway correctly but faces in the wrong direction (e.g. cleared to enter runway 23 but lines-up facing 05 direction) and starts its roll.	Yes		It is an incorrect presence once it starts take-off roll.
The TWR controller erroneously clears an incorrect aircraft for take-off. He immediately realises his error and corrects the clearance. The aircraft does not move and remains at the holding point.		Yes	There is no incorrect presence
A helicopter flies or ground taxis along part of the runway length without clearance to do so.	Yes		It is an incorrect presence
An aircraft is cleared to enter the runway after a landing clearance has been given to another aircraft.		Yes	The RT clearance does not mean an incursion has immediately happened.
An aircraft is cleared to enter the runway and does so, after a landing clearance has been given to another aircraft.	Yes		It is an incorrect presence

PROTECTED AREA: ILS AREA/ZONES AND RUNWAY END SAFETY AREA CONSIDERATIONS

The protected area as a minimum includes the runway and strip distance out to the holding points relevant to the visibility conditions at the time.

ILS Critical and Sensitive Areas/Zones

According to Commission Regulation (EU) No 139/2014 GM (carried over from EAPPRI Edition 2.0) "The "protected surface" includes the ILS glide-path and localiser critical areas at all times, and the ILS sensitive areas during Low Visibility Procedures". However, a number of studies have concluded that the ILS areas/zones do not always need to be part of the protected area. Similarly, the EAPPRI working group was also unable to agree if an aircraft, vehicle or pedestrian entering the ILS LOC or GP critical area is an incursion or not. Thus it is recommended this decision is made jointly between the ANSP and the aerodrome operator for each airport. The result should be depicted on the Aerodrome Protected Area map – see Recommendation Aerodrome Operator 1.2.17a.

RESA

The ICAO Runway Safety Handbook includes the RESA in its description of the protected area. Notwithstanding this, previous studies also showed that there is no consensus regarding the inclusion of the RESA as part of the protected area and whether penetration of them constitutes a runway incursion or not. The EAPPRI working group opinions were equally divided and again it is suggested that the decision to include or exclude RESAs from the protected area is made jointly between the ANSP and the airport operator for each airport. As above, if RESAs are included they should be shown on the Protected Area map.

CONTROLLER CLEARANCE

The issuing of an erroneous RT clearance by the controller does not automatically mean that an incursion has happened at that precise moment – an incursion happens when the aircraft/vehicle/pedestrian actually moves onto the runway/protected area. It is at this point that the presence is incorrect.

DEFINED DISTANCES (FOR DETERMINING RUNWAY INCURSIONS)

The working group was unable to agree on defined distances between, for example, a departing aircraft followed by a landing aircraft – when are they “too close” and a runway incursion is deemed to have occurred? For instance, if the departing aircraft gets airborne when a landing aircraft is at 4nm, 3nm, 2nm, 1nm.... at what point does an incursion occur?

The recommendation from the group is not to define pan-European distances to apply everywhere as various ANSPs and airports have different methods in use. The group agreed, however, to recommend that each airport and ANSP should jointly agree distances that apply at that airport. Thus a local solution is proposed not a “one-size-fits-all.” The local solution should be safety assessed and if there is no local solution then PANS-ATM Chapter 7 (7.9, 7.10 and 7.11) criteria should be used.

Example	Runway Safety; Runway Incursion	Runway Safety Event; No Incursion	Rationale
Landing aircraft followed by landing aircraft	Within defined position of both aircraft	Outside defined position of both aircraft	Only within the defined distance is it an incursion.
Landing aircraft followed by departing aircraft			
Departing aircraft followed by departing aircraft			
Departing aircraft followed by landing aircraft			
A vacating aircraft followed by a landing aircraft			
A vacating aircraft followed by a departing aircraft			
An aircraft is given a clearance to land with a vehicle on the runway that has received a correct clearance to be on the runway.	Yes – if the landing aircraft is within the defined distances above.	Yes – if the landing aircraft is not yet inside the defined distance above.	There is only an incorrect presence once the landing aircraft is within the defined distance.
An aircraft is departing and a landing aircraft commences a go-around. This may result in a loss of separation.	Yes – if the go-around commences within the defined distance	Yes – if the go-around occurs before the aircraft is inside the defined distance above.	There is only an incorrect presence once the landing aircraft is within the defined distance.

JUST CULTURE

To further aid learning lessons from events the working group recommend that being involved in a runway incursion does not imply blame or error – it can be the situation that is classed as the incursion. This supports a Just Culture philosophy.

