



26th March 2026

RUNWAY INCURSION PREVENTION AND AERODROME GROUND MOVEMENT SAFETY

1 Purpose

- 1.1 This Safety Information (SI) is issued by the Civil Aviation Authority of Malaysia (CAAM) to raise awareness among aerodrome operators and Air Navigation Service Providers (ANSPs) on the risks associated with runway incursions and the importance of maintaining effective procedural controls, coordination, and situational awareness governing vehicle operations within aerodrome movement areas.

2 Background

- 2.1 On the night of 22 March 2026, Air Canada Express Flight 8646, a Bombardier CRJ900 regional jet operated by Jazz Aviation, was conducting a scheduled passenger flight from Montreal-Trudeau International Airport, Canada, to LaGuardia Airport (LGA), New York, United States of America.
- 2.2 At approximately 2338 local time, during the aircraft's landing roll on Runway 4, the aircraft collided with a Port Authority Aircraft Rescue and Fire Fighting (ARFF) vehicle that had been cleared by Air Traffic Control (ATC) to cross the same runway. The ARFF vehicle was responding to a separate declared emergency involving another aircraft at the airport. According to preliminary reports, the collision resulted in the fatalities of both pilots and injuries to 41 persons, including passengers, cabin crew, and ARFF vehicle personnel. The cockpit and forward section of the aircraft sustained severe damage, and the airport was closed for approximately 14 hours following the occurrence.
- 2.3 The investigation is being conducted by the United States National Transportation Safety Board (NTSB). While the contributing factors have yet to be formally established, preliminary information indicates that several operational factors may have played a role in the occurrence:
- a) Possible simultaneous runway occupancy clearances issued to both the landing aircraft and the ARFF vehicle, allowing both to enter Runway 4 during the same period;
 - b) High controller workload, as the controller responsible for Runway 4 was also managing a declared aircraft emergency on another runway, which may have affected situational awareness;



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- c) Limited visibility of the ARFF vehicle to surface surveillance systems, as the vehicle was reportedly not equipped with a transponder capable of interfacing with automated runway conflict detection systems; and
 - d) Night-time operating conditions, which may have further affected situational awareness for personnel involved in the runway and ground operations.
- 2.4 CAAM notes that this occurrence is the most recent in a series of high-profile runway incursion events globally. Runway incursions (RI) remain among the highest-risk categories of aviation safety occurrences, with the potential for catastrophic or fatal consequences. This occurrence reinforces the imperative for all stakeholders involved in aerodrome ground operations to maintain the highest standards of procedural discipline, coordination, and situational awareness at all times.

3 Recommendations

- 3.1 Aerodrome operators and ANSPs are advised to review existing procedures governing vehicle operations within aerodrome movement areas and to implement all necessary operational controls without delay.
- 3.2 In particular, relevant parties are advised to consider the following measures:
- a) Review ATC procedures and standing instructions governing runway occupancy to ensure that no simultaneous clearances are issued to aircraft and vehicles for the same runway, including during emergency response activations. Attention should be given to procedures governing ATC task allocation and workload relief during periods of concurrent operational events;
 - b) Review coordination and communication protocols between aerodrome operators and Air Traffic Control to ensure strict compliance with ATC clearance requirements prior to entry into the manoeuvring area, particularly during non-routine or emergency operations, and including during Low Visibility Operations (LVO);
 - c) Conduct an audit of transponder and ADS-B equipage across all airside vehicle fleets, including ARFF vehicles, follow-me cars, baggage tractors, and other ground support equipment authorised to operate within the manoeuvring area. All such vehicles should be equipped with technology compatible with the aerodrome's surface movement surveillance and conflict detection systems;
 - d) Review and test the functionality, alert thresholds, and operational effectiveness of Surface Movement Guidance and Control Systems (SMGCS) or Advanced-SMGCS installed at the aerodrome, to ensure that runway conflict detection and warning systems are fully operational and appropriately calibrated;



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- e) Review ATC staffing levels and shift rostering arrangements, with particular attention to night and low-traffic shift periods, to ensure that an adequate number of certified controllers are on duty to manage concurrent operational events without incurring unacceptable workload levels;
- f) Ensure that personnel authorised to operate vehicles within aerodrome operational areas are duly trained, assessed as competent, and remain familiar with applicable aerodrome driving procedures, including runway crossing protocols and emergency response coordination requirements; and
- g) Conduct a joint tabletop exercise or simulation, where practicable, involving ATC, aerodrome operations, and ARFF units, to evaluate the adequacy of existing protocols for managing concurrent emergencies and vehicle movements within the manoeuvring area.

4 Conclusion

4.1 The above recommendations are consistent with the provisions contained in:

- Civil Aviation Directive (CAD) 14 Vol. I – Aerodrome Design and Operations;
- Civil Aviation Directive (CAD) 11 – Air Traffic Services; and
- Civil Aviation Directive (CAD) 1101 – Air Traffic Management.

4.2 CAAM urges all aerodrome operators and ANSPs to review the above recommendations and take appropriate measures, where necessary, to ensure that the highest standards of operational safety continue to be maintained at all aerodromes in Malaysia.



DATO' CAPTAIN NORAZMAN BIN MAHMUD
Chief Executive Officer
for Civil Aviation Authority of Malaysia
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