



Transportation
Safety Board
of Canada

Bureau de la sécurité
des transports
du Canada

Runway Incursions

A Canadian Perspective



TSB Watchlist

- Risk of Collisions on Runways
- On the TSB Watchlist since 2010
- From 2011 to 2015 there were 2041 runway incursions at Canadian airports (source: NAV CANADA)

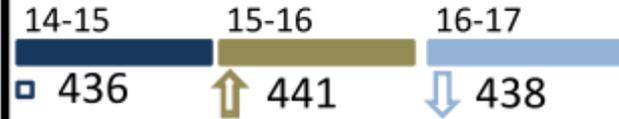
Year	Total Runway Incursions	Serious Runway Incursions (Cat A&B)
2011	386	10
2012	355	3
2013	422	5
2014	462	3
2015	416	6
2016	438	14

Runway Incursion Statistics (Nav Canada)

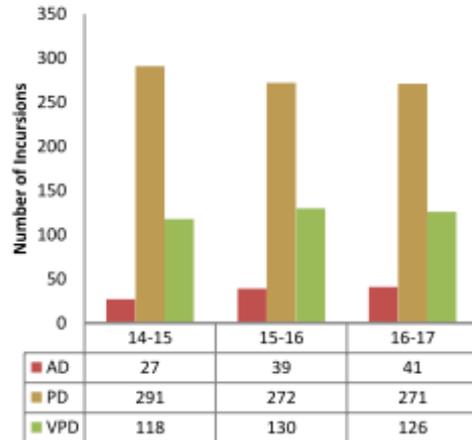
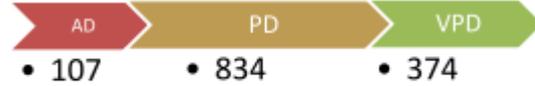
Runway Incursions

1 Apr 2014 - 31 Mar 2017

Total Runway Incursions



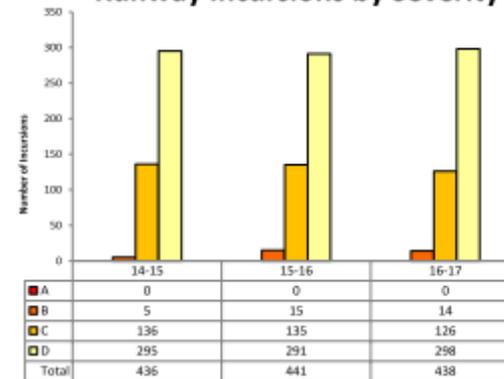
Runway Incursions by Classification



AD – ATS Deviation
 PD – Pilot Deviation
 VPD – Vehicle or Pedestrian Deviation

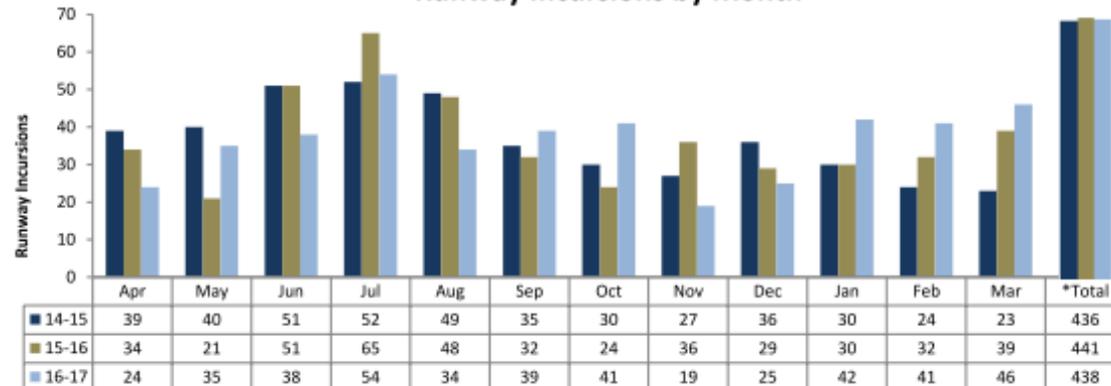
- A - Extreme Risk
- B - High Risk
- C - Some Risk
- D - Minimal or No Risk

Runway Incursions by Severity



Runway Incursions by Month

*Total not to scale



TP312 vs ICAO Annex 14

- The Canadian airport standards are published in Transport Canada's TP312 "Aerodrome Standards and Recommended Practices"
- 5th edition published July 31st, 2015
- Based on ICAO Annex 14 Vol I "Aerodrome Design and Operations"
- Differences Between TP312 and ICAO Annex 14 are published in NAV Canada's AIP Part 1 GEN section 1.7 Table "Differences from ICAO Standards"
- No published list of differences between the FAA AC150 and TP312 available to crew

Notable Differences in Canada - RETILS

5.3.14	Canada does not use rapid exit taxiway indicator lights.
Remark:	Difference Category C.

Annex 14 — Aerodromes

Volume I

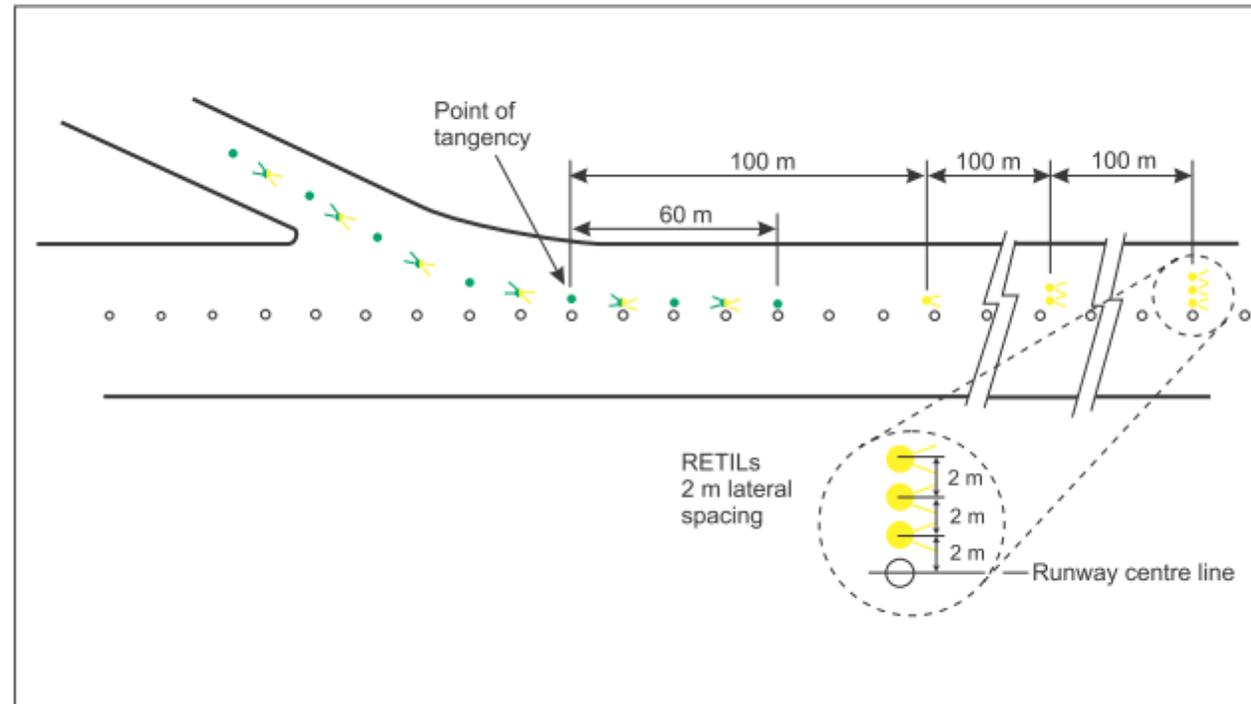


Figure 5-24. Rapid exit taxiway indicator lights (RETILS)

Enhanced Taxiway Centreline Markings

5.2.8.9 Where provided, an enhanced taxiway centre line marking shall extend from the runway-holding position pattern A (as defined in Figure 5-6, Taxiway markings) to a distance of up to 45 m (a minimum of three (3) dashed lines) in the direction of travel away from the runway or to the next runway-holding position, if within 45 m distance.

Annex 14, Aerodromes	
5.2.8.5, 5.2.8.9, 5.2.8.11	Canada does not have specifications for enhanced taxiway centreline markings.
Remark:	Pending an amendment to the regulatory requirements, an exemption is in place to permit the positioning of the enhanced taxiway centreline marking. Difference Category C

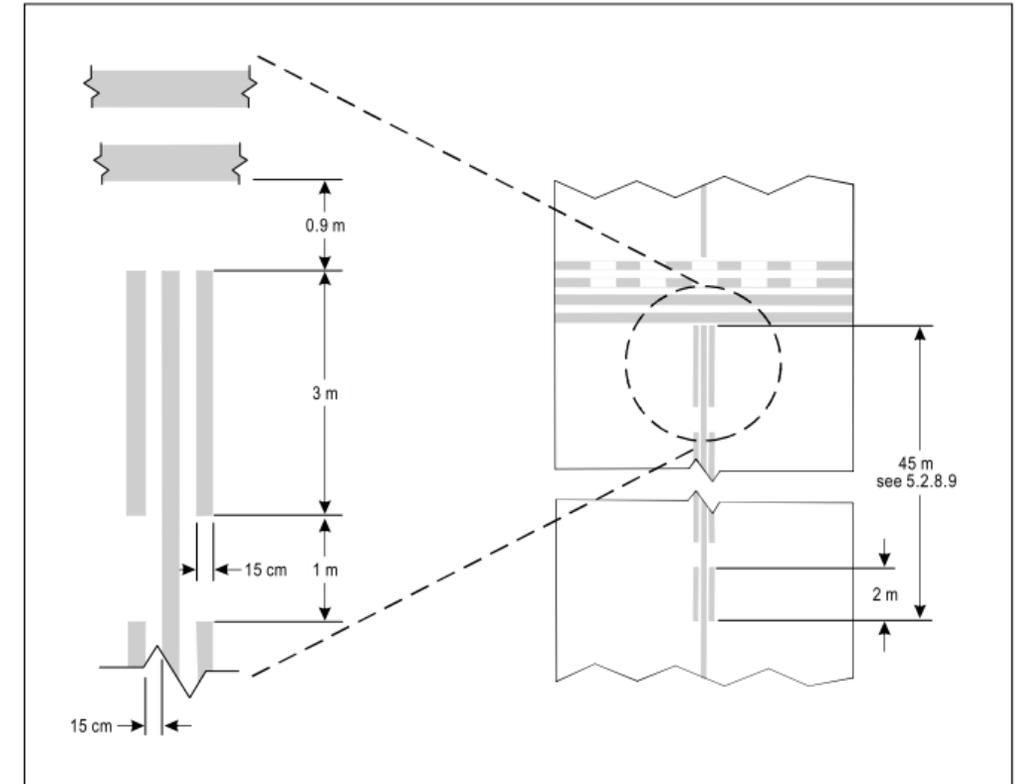


Figure 5-7. Enhanced taxiway centre line marking

A1700038 – Safety Issues Investigation

- In May 2017, the Transportation Safety Board of Canada (TSB) launched a safety issues investigation (SII) that will examine in depth multiple runway incursions that have occurred between runways 06L/24R and 06R/24L at Toronto/Lester B. Pearson International Airport (CYYZ) from June 2012 to June 2017.
- 25 Incursions between the south parallel runways since the beginning of 2012 of varying severity.
- Of the 25 incursions 76% were US Regional carriers operating E175 and smaller aircraft

CYYZ South Complex Layout



CYYZ D4 Hi Speed Exit, Markings and Lighting



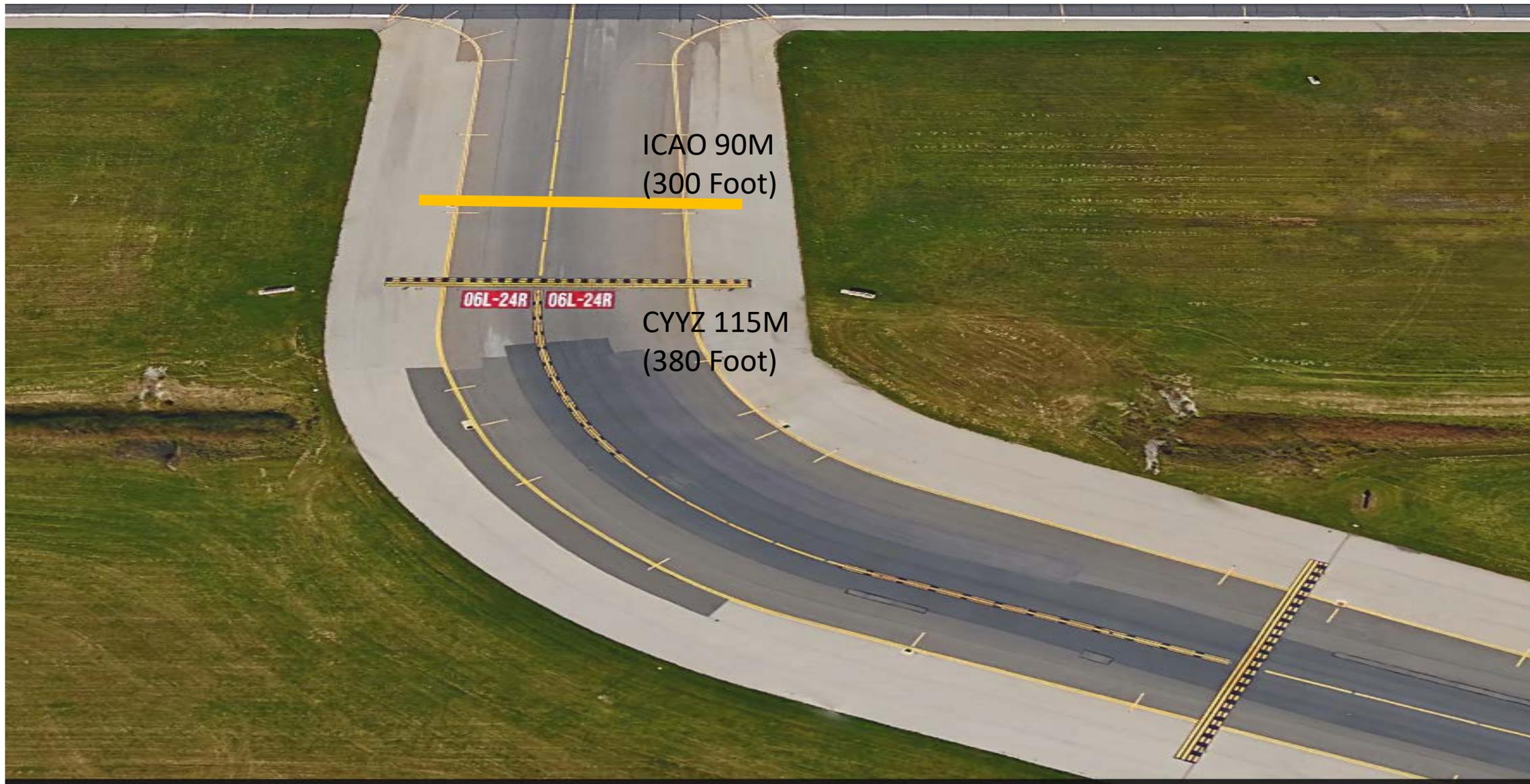
KSFO



KDFW



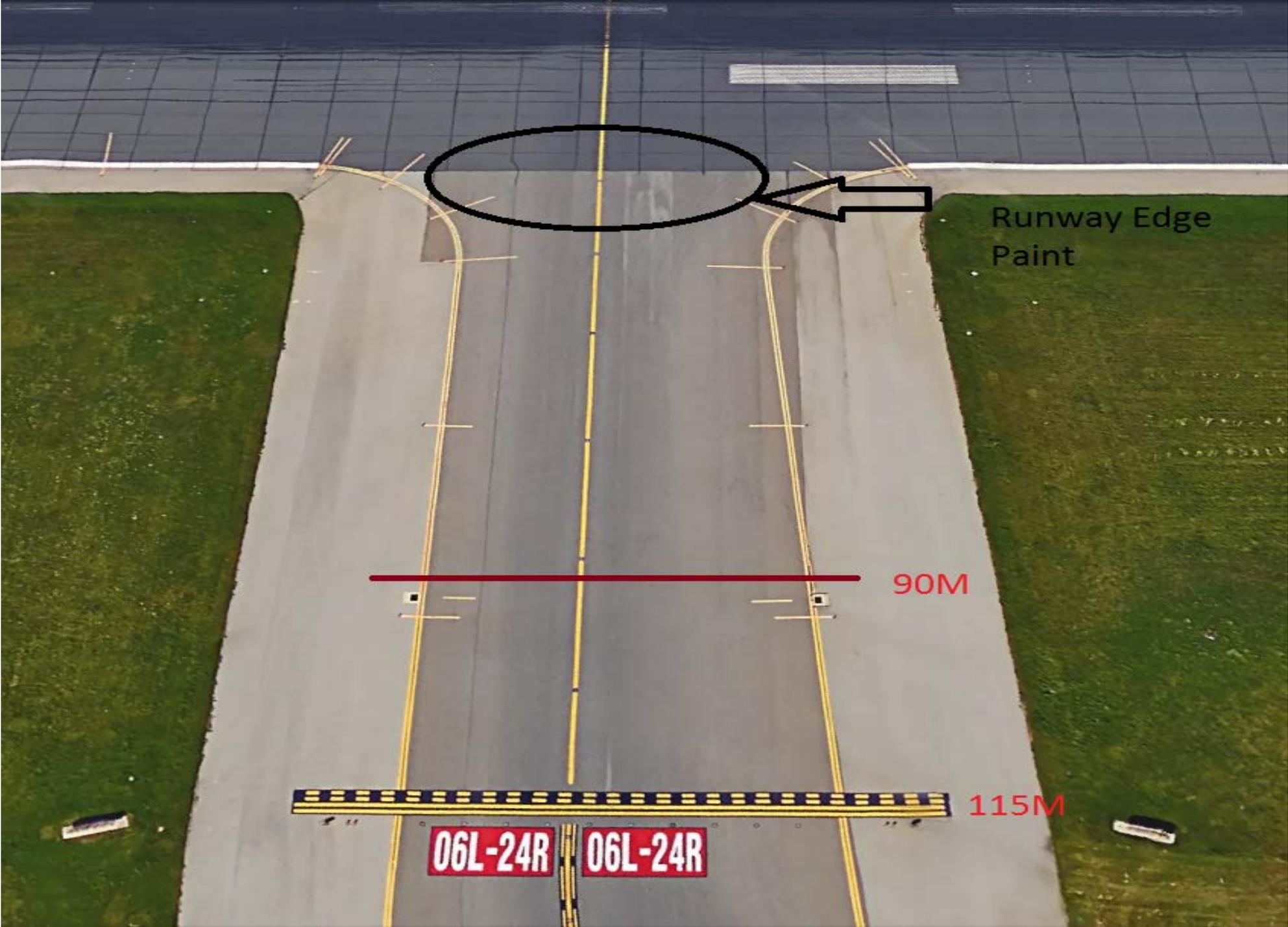
CYYZ Differences from US airports



06L-24R 06L-24R

No Runway Exit Markings





Runway Edge
Paint

90M

115M

06L-24R 06L-24R

Awareness Campaigns

- Notifications to RAA and Airlines
- ASAP Newsletters
- Recurrent Training
- Jepp 10-7 company pages
- Limitations of awareness campaigns