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)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Runway Incursions</th>
<th>Serious Runway Incursions (Cat A&amp;B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>386</td>
<td>10</td>
</tr>
<tr>
<td>2012</td>
<td>355</td>
<td>3</td>
</tr>
<tr>
<td>2013</td>
<td>422</td>
<td>5</td>
</tr>
<tr>
<td>2014</td>
<td>462</td>
<td>3</td>
</tr>
<tr>
<td>2015</td>
<td>416</td>
<td>6</td>
</tr>
<tr>
<td>2016</td>
<td>438</td>
<td>14</td>
</tr>
</tbody>
</table>
Runway Incursion Statistics (Nav Canada)

Runway Incursions

- Total Runway Incursions
  - 14-15: 436
  - 15-16: 441
  - 16-17: 438

Runway Incursions by Classification
- A: Extreme Risk
  - 107
- B: High Risk
  - 834
- C: Some Risk
  - 374
- 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

<table>
<thead>
<tr>
<th>5.3.14</th>
<th>Canada does not use rapid exit taxiway indicator lights.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remark:</strong></td>
<td>Difference Category C.</td>
</tr>
</tbody>
</table>

Annex 14 — Aerodromes

---

**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.

<table>
<thead>
<tr>
<th>Annex 14, Aerodromes</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.8.5, 5.2.8.9, 5.2.8.11</td>
</tr>
<tr>
<td>Remark:</td>
</tr>
</tbody>
</table>

Figure 5-7. Enhanced taxiway centre line marking
A17O0038 – 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

1000' FOOT SEPARATION
CYYZ D4 Hi Speed Exit, Markings and Lighting
CYYZ Differences from US airports
Awareness Campaigns

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