NAV CANADA ANSP UPDATE

October 22nd, 2019

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CURRENT/RECENT PROJECTS

› SB-ADSB
› Four Majors
› AMAN
› RECAT
› PBN/EOR
› ONTIME
› CDO
› Time Based Separation
› Closely Spaced Parallel Operations
› Digital Facilities
› RPAS
› NAVAID Modernization
› ICAO NOTAM
› Vancouver Airspace Modernization Project (VAMP)
4 MAJORS

› Toronto, Vancouver, Calgary and Montreal

› Flight Management
› Airspace Management
› System Synergy Gate to Gate
› Satellite Surveillance

› Predictable/Consistent/Efficient
4 MAJORS
AMAN (YZ EXAMPLE)

AMAN Active

- TMU will advise (east low, west low and north) when AMAN times active
- Low specialties will advise High specialties when AMAN active via hotline using the phraseology: “AMAN times in effect.”
- The airports specialty will APREQ all departures to YYZ all day
- The west low will coordinate with airports if an aircraft stays low that is landing YYZ as airports will not be displaying AMAN times.
## ICAO Enhanced Wake Turbulence Minimum Arrival Separations (NM)

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EOR – WHAT IS IT?

› New ICAO separation standard for use in Simultaneous Independent Parallel Operations

› Precise Required Navigation Performance (RNP) approaches

› Allows for integration of RNP AR operations into busy parallel runway operations
CURRENT PARALLEL OPERATIONS

- Existing simultaneous parallel operations require ATC to apply 1000 feet or 3 nautical miles separation until aircraft are established on the straight in portion of the approach.

- "Low" side arrivals required to level off, increasing noise at low altitudes.

- Longer downwinds required in "High – Low" ops (20-25nm final common).
EOR PARALLEL OPERATIONS

› RNP AR arrivals considered “Established” at the commencement (IWP) of the procedure

› No “High- Low” requirement between EoR and parallel runway leading to noise benefits for “Low side” downwind

› Significant reduction in mileage, fuel burn and GHG emissions

› Air Canada estimates RNP-AR saves:
  • Approximately 300-400 kg per flight for B777
  • Approx. 100-125 kg for narrow body aircraft
PBN/EOR
ONTIME

Overview

› ONTIME development has been moving forward over the last year working on setting up various data connections and putting together tools to help the Airlines and the TMUs units at NAV CANADA get a better view of the flow situation.

› Key areas of ONTIME development:
  • Traffic Situation Display
  • 3d Sector display
  • OIS automation
  • Sector Demand Capacity Balance (DCB) monitoring and display
Focus on Sectors – How we got here…

Starting with a static definition of the sector geometries, ONTIME was given the listing for all ACCs.

- **Note:** this is not updated on a regular basis

Then, a list of all the specialties and sectors that are part of the specialties were then provided to ONTIME.

- **EX:** for CZYZ, the specialty list is the following
  - AIRPORTS
  - EAST HIGH
  - EAST LOW
  - NORTH
  - NORTH BAY
  - TERMINAL
  - WEST HIGH
  - WEST LOW
OTHER INITIATIVES RELATED TO THE 4 MAJORS

› CDO (Continuous Descent Operations)

› Time Based Separation
  › Spring 2021 in Toronto
  › 1.5+ arrivals/hour

› Closely Spaced Parallel Operations
  › Spring 2021 in Toronto
  › 6+ arrivals/hour

› Vancouver Airspace Modernization Program (VAMP)
DIGITAL FACILITIES

Low volume, multiple airports
Medium/large contingency
Through Searidge Technologies
Proof of Concept

› PTZs provide zoomed views of critical areas and hot spots
› Configurable pre set views and tracking capability
› Signal Light Gun PTZ provides additional redundancy
DIGITAL FACILITIES
DIGITAL FACILITIES
New CAR Part IX – “Remotely Piloted Aircraft Systems” (RPAS)

- January publication / enforceable on 1 June, 2019
  - SFOC process for all commercial ops remains in place until 1 June
  - Subsequently, SFOC required for:
    - Operations that are not compliant with new regulations
    - Operations for RPAs > 25Kg or Beyond Visual Line of Sight (BVLOS)
- All UAVs will be considered RPAs, no longer a “Model Aircraft” Category
  - 3 categories of operation that will govern airspace access
    - Very small (more than 250g to 1 kg.)
    - Basic (lower risk), min. age 14 or supervised, basic knowledge test
    - Advanced (controlled airspace), min. age 16, requires knowledge test + flight review
    - Any operation in controlled airspace must be approved by ANSP
- All RPAs >250g will need to be registered via Government web site
http://www.navcanada.ca/EN/products-and-services/Pages/NAVAIDs-Modernization-Project.aspx
BENEFITS OF ICAO NOTAM FORMAT

- Aligned with ICAO standards
- Pilot briefings will contain NOTAM that are pertinent to flight thus reducing risk of misinformation
- Automation assists with entry and validation of NOTAM
COMPARISON OF CANADIAN DOMESTIC AND ICAO NOTAM FORMAT

180001 NOTAMN CYOW OTTAWA/MACDONALD-CARTIER INTL
CYOW RWY 07/25 CLSD
1306141230 TIL APRX 1306172000

(A0001/18 NOTAMN
Q) CZUL/QMRLC/IV/NBO/A/000/999/4519N07540W005
A) CYOW B) 1306141230 C) 1306172000EST
E) RWY 07/25 CLSD
NOTAMS

Georeferencing using ICAO NOTAMs

- Flight from CYUL to CYQB
- Recall NOTAMs within 25 miles of route between:
  - CYUL
  - CYQB
- NOTAMs georeferenced according to the following in the Q-line
  - Geographical coordinates
  - Radius
- FIR NOTAMS will intersect with the route
- National NOTAMS will intersect with the route
THANK YOU

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