Ultra Long Range Flights
Flight Planning on the Polar Route
Singapore – Newark - Singapore

CPWG/27, Singapore
22 to 24 October 2019
Non-Stop To & From USA

- 62 weekly Non-stop A350 flights between Singapore and USA

- SEA, SFO, LAX, EWR*

- EWR flights benefit from the Polar routes

- EWR to SIN flights often operate on the North Polar route during Summer months with significant time savings compared to other routes

* SIA resumed daily Non-Stop SIN-EWR-SIN services in Oct 2018
Our Journey to Flying Polar Routes Again

- Simulated Exercise to validate Recovery plan for an enroute diversion to Krasnoyarsk (UNKL)
- Visits to alternates in Siberia
- Recovery Plan:
  - Notification & Activation
  - Ground Support & Logistics
  - Recovery Flight

- Delivery Flight 9V-SGA
- LFBO – ABERI (N8730) – WSSS
- 16h 24m
- First SIA Trans Polar flight in 5 years

- Polar route via ABERI
- 17h 17m
- 8532 NM
Polar Operations Recovery Plan

The purpose of the Recovery Plan is to facilitate the recovery of the passengers and crew, in the event of a diversion, from a remote region not served by SIA.

Upon receiving information of a possible diversion to a remote airport, the Duty Flight Controller (SIAOCC), is responsible for immediately notifying and briefing respective stakeholders. Where the diverted aircraft is unable to continue its journey after landing, a recovery aircraft will be sent to the diversion station to recover the passengers and crew.

SIAOCC will activate the recovery plan to recover passengers and crew within 48 hours.

- Decision / Diversion / Recovery
- Flight Ops, SIAOCC, Stations, Engineering, Go-Team, GAC
- Recovery time within 48 hours of diversion
- AIRBUS A350-900ULR
- MTOW 280,000 kg
- SIN-EWR: North Pacific or Polar routes
- EWR-SIN: Polar or Trans-Atlantic, Europe
Singapore to Newark

- NOPAC / UPR
- Polar Routes via ABERI, DEVID
- Polar Route is used on exception basis as NOPAC route is usually more efficient
Newark to Singapore

- Polar Routes via ABERI, DEVID
- Trans-Atlantic via Europe
- Polar Routes are commonly used during Summer months
Additional Flight Planning Requirements

Polar Routes
# Flight Planning on Polar Routes

## Space Weather / Radiation Scales
- Monitoring of Geomagnetic, Solar and Electromagnetic Radiation before and during flight
- Polar route will not be planned if any of the categories exceed company policy levels

## En-route Alternates
- Strategically located airports in Canada Arctic region, Scandinavia, Iceland, Siberia
- Monitoring of airport weather, conditions and availability
- EDTO Coverage (180 / 240 minutes)

## Minimum Equipment List
- Items required for Polar operations, *for example:*
  - Fuel System (Qty / Temp Indication)
  - APU
  - Medical Kit with AED
  - Both Air Cond Packs must be operative
FACTS & FIGURES (Oct’18 to Oct’19)

Singapore to Newark
Average flight time **17:28**
- Min 16:39 (NOPAC)
- Max 18:28 (NOPAC)
Avg Distance **8982** nm
Flights via Polar route: **9** (2.5%)

Newark to Singapore
Average flight time **17:43**
- Min 16:43 (Polar)
- Max 18:51 (Transatlantic)
Avg Distance **8929** nm
Flights via Polar route: **145** (40.3%)
SQ21 EWR to SIN Flights via Polar Route
(From 12 Oct’18 to 11 Oct’19)

Percentage of flights 40.3%

Flight Times 16:43 to 18:23
**Why Polar Route**

- Good alternative when non-polar routes are affected by enroute hazards, e.g. Volcanic Activity; Weather systems (Tropical Storms)

- Very northerly Polar route connections (e.g. ABERI) and connecting route structure less susceptible to Airspace / Airway restrictions such as NOTAM closures, LSWD, AWY or WPT time restrictions (min delays)

- More efficient during summer months especially on EWR to SIN flights (approximately 35 minutes faster, 3300 kg lower fuel burn compared to Trans-atlantic / Europe route); better payload and operational flexibility in RTOW limiting scenarios
THANK YOU