United Polar Operations 1999-2019

- First polar operation in 1999 ORD-HKG
- Continental started 777 Polar Operations in 2001 EWR to HKG
- Since 1999 –United has completed over 35,000 Cross Polar Operations (including Continental from 2001 until 2011 merger)
United’s Fleet Status for Polar Ops

- Boeing 777-200ER – 55 in service
- Boeing 777-300ER – 18 in service and additional 4 delivered by the end of 2019
- Boeing 787-8/9/10 – 46 in service and 28 future deliveries
- Airbus 350-900 – 45 ordered expected delivery in 2022
Polar Routes – EWR/IAD/ORD Hubs

- PEK/NRT/PVG/HKG and BOM/DEL
- ORD-HKG recently discontinued due to weakened demand
Routes – SFO/LAX Hub

- 9 cities to Asia – mainly over the Pacific and Russian Trans-East routes and minimal exposures to “polar” region
- NEW – DEL service beginning December 5, 2019
New SFO-DEL-SFO service

- SFO-DEL is primarily a polar operation via Edmonton/Murmansk
- Similar to West Coast US – Middle East Traffic
New SFO-DEL-SFO service

- DEL-SFO will see a wide range of route optimization with seasonal variations
- In winter, advantageous over the North Pacific due to favorable tailwind
Current UHMM/PAZA Route Option

- Closer to “great circle” (minimum distance) route
- Favorable flight times during the summer
- Desire for some airway alignment in Russia to optimize trajectory
Current UHMM/PAZA Route Option

- Looking for a more efficient UHMM/PAZA transition through airway alignment and less UPR restrictions in the PAZA side
UHMM/PAZA Route Option SFO-DEL-SFO

- Proposal to add a new bidirectional airway PEMID-FRENK on UHMM side
- Eliminate/reduce UPR restriction via FRENK on the PAZA side
Looking into the future – Arctic UPR

- The true great circle trajectory for SFO-DEL-SFO is in the arctic region.
Looking into the future – Arctic UPR

- It is an entirely different trajectory from the current route structure in Magadan arctic region catered to flights to/from Asia.
- How do we go from airway structures to allowing user preferred trajectories in the near future?
The End