

POLAR OPERATIONS

PILOT SPECIALTY COURSE SERIES

SUMMARY

Covers flight operations in polar regions. Flight preparation and planning are emphasized, including use of polar charts, designated areas of magnetic unreliability, Canadian and Russian airspace, metric altitudes and QFE / QNH references, solar flare activity and communication procedures (HF, SATCOM and CPDLC).

The course includes a discussion of regulatory requirements, including en-route alternates, special equipment and area approvals. Additional lessons are focussed on cold fuel management and selection of en-route alternate airports.



TARGET POPULATION

Experienced Airline Pilots

Great for pilots requiring initial or recurrent training.



REGULATORY COMPLIANCE*

- EASA / FAA / Transport Canada
- Maintains compliance with IOSA standards



DELIVERY MODE

100% online, self-guided



COURSE LENGTH

1 hours, 15 minutes

LESSON 1: Introduction to Polar Operations

- Definitions – Polar Operations
- Route benefits and schedule integrity
- Time and fuel savings
- Regulatory authority and approval – TC, EASA, FAA
- Operational challenges

LESSON 2: Operational Factors

- Properties of fuel at very low temperatures
- Cloud point and pour point
- Fuel types
- Factors affecting fuel temperature
- Fuel systems and temperature measurement
- Fuel analysis
- Upper air temperature charts
- FMC indications
- Strategies for avoiding cold fuel – altitude and speed changes
- MEL considerations
- Space weather
- Solar flares – electromagnetic and geomagnetic radiation
- Solar activity scales
- Radio blackout

LESSON 3: Navigation and Communication Procedures

- Designated Polar Routes
- Random routes
- Charts and manuals
- ICAO phraseology
- VHF and HF communications
- HF in Russian airspace
- SATCOM
- CPDLC and ADS
- Position reporting
- Designated areas of magnetic unreliability
- Operation in true heading reference
- North Pole over – flights
- Use of metric units – altitude, distance, wind speed and visibility

LESSON 4: Alternates and Diversions

- ASOA process
- Considerations for alternate and diversion airports
- ETOPS / non-ETOPS factors
- Safety equipment
- Airline recovery plan for passengers at diversion alternates
- Adequate and suitable airports
- Use of QNE / QFE
- Cold temperature altimetry

LESSON 5: Abnormal and Emergency Procedures

- Emergency diversions / descents
- Preferred airfields
- Polar gear
- Search and rescue
- Diversion recovery plan

LESSON 6: Operational Flight Plan

- Company policy
- Polar OFP review – fuel freeze point, MEL, route, weather and NOTAMs
- Plotting charts
- Sample POLAR flight – Cincinnati to Hong Kong

*** REGULATORY COMPLIANCE:** This course focuses on core elements of Polar Operations including; air traffic services, communication, and emergency procedures. Reference documents include:

- FAA AC 91-70A
- ICAO Doc 4444 PANS-ATM

Operator remains responsible for obtaining approval from the regulatory authority.