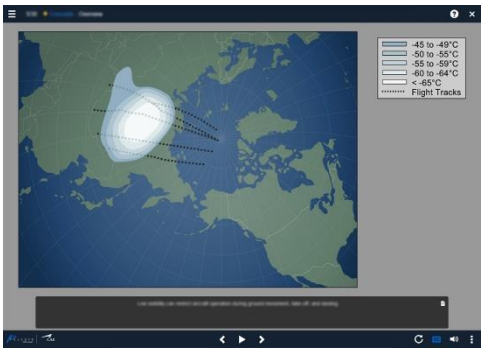
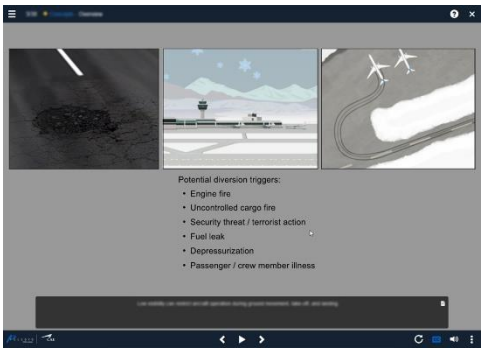
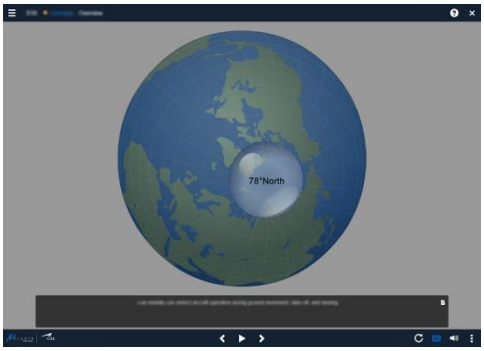
POLAR OPERATIONS

2020 - 2021







SUMMARY

This course 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 enroute alternates, special equipment and area approvals. Additional lessons are focused on cold fuel management and selection of enroute alternate airports.

TARGET POPULATION

The Pelesys Polar Operations course is designed for Professional Pilots requiring initial or recurrent training.

REGULATORY COMPLIANCE

- ICAO / EASA / FAA / Transport Canada
- Maintenance compliance with IOSA standards

Versions Available:
Standard

Course Length:
1 hr 35 min

LESSON 01: Introduction

In this lesson we present an 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 02: Operational Factors

In this lesson we will review operational factors on associated topics, including:

- 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 03: Navigation and Communication Procedures

In this lesson we will cover procedures for navigation and communication:

- 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 04: Alternates and Diversions

In this lesson we will cover requirements for en-route alternate airports:

- 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 05: Abnormal and Emergency Procedures

This lesson reviews abnormal and emergency procedures:

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

LESSON 06: Operational Flight Plan

This lesson presents flight planning requirements and use of the 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

LEARNING TIME AND RUN TIME

This course has a learning time of: (run time plus additional time per page to account for understanding learning points)

- 1 hr 35 min

This course has a run time of: (the base time for each page to be completed)

- 41 min

Exam Generation System (EGS) Banked Questions

The total amount of banked questions for this course is:

Lesson Title	Standard Questions
Introduction	4
Operational Factors	14
Navigation and Communication Procedures	10
Alternates and Diversions	4
Abnormal and Emergency Procedures	2
Operational Flight Plan	4
	38

REFERENCE MATERIAL

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

ICAO

- Doc 9613 Performance Based Navigation
- Doc 4444 PANS-ATM

EASA

- GM1 SPA.PBN.100
- SPA.PBN.105

FAA

- 14 CFR Appendix P to Part 121, Requirements for ETOPS and Polar Operations
- AC 91-70B
- AC 120-42B
- FAA Guidance Overview – Polar Routes

TC

- TP 14371 Airman's Information Manual AIM COM 3.5 Data Link Networks
- TP 14371 AIM COM 5.2 Global Positioning Systems (GPS)
- TP 14371 AIM RAC 3.16.9 Item 19: Supplementary Information
- TP 14371 MET 1.3.2 WAFS Charts
- TP AIM RAC 8.6.2 Altitudes and Direction of Flight

This course material may be supplemented when used in conjunction with any of these Pelesys courses: CPDLC, and ETOPS / EDTO.

The operator remains responsible for obtaining approval from the regulatory authority.

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