



## Worldwide International Procedures Initial – Detailed Syllabus

### Lesson Content

#### **MNPS (HLA), Oceanic, and Contingency Procedures Module**

##### General Information

- Flight Rules
- International Operations Manual
- FAA Sensitive International Areas
- ICAO Conflict Zone Repository
- Jeppesen Airways Manual
- Jeppesen Enroute Charts
- NAT References
- FAA Oceanic Operations Info
- NAT Information Sources
- Cockpit Reference
- NAT Ops Bulletin
- Authorizations
- Operational Approval
- Authorizations-USA
- Authorizations-EASA
- ICAO SARPs
- State Rules
- Insurance
- Video - Track Wise Introduction
- Important Concepts
- Abbreviations and Definitions

##### NAT HLA

- NAT Introduction
- NAT Region Timetable
- Lateral Navigation Requirements
- Lateral Navigation - GPS Consideration
- Longitudinal Navigation Requirements
- Mach Number Technique
- NAT HLA Lateral and Longitudinal Separation
- 3-Minute Rule
- ICAO Flight Plan

##### NAT HLA Route Options

- North American Routes
- NAR Example
- NAT Routing Options
- Special Routes
- What is the NAT OTS?
- NAT Organized Track System
- OTS - Track Messages
- Random Routes
- GOTA - Gander Oceanic Transition Area
- NAT Tracks - FAN 1/A
- NAT OTS Message - CPDLC
- NAT RLatSM
- NAT RLatSM - Tracks
- GOTA - ReDesign for RLatSM Implementation
- NAT OTS - CPDLC Mandates
- NAT OTS - CPDLC Flight Planning
- Europe Coast-In
- NAT Clearance Procedures
- OAC - Oceanic Area Control Center
- Video - An overview of the Shanwick Operation
- Clearance Procedures
- General
- Clearance Content
- Amended Clearance
- Reclearance
- Video - Reclearance Error
- Shanwick OCA - Clearance Request
- Shanwick OCA - Datalink
- Video - A Standard Westbound Flight
- Gander OCA - Clearance Delivery
- Gander OCA - Clearance Frequencies
- Gander OCA - Datalink
- New York OCA
- Santa Maria OCA
- Video - The Southeast Corner
- NAT Aeroradio Stations



## General Procedures

- ARINC 424 Oceanic Waypoint Format
- ARINC 424 Oceanic Waypoint Format - Verification
- ARINC 424 Oceanic Waypoint Format - Half Degree
- ARINC 424 Oceanic Waypoint Format - Half Degree - Jeppesen
- Loading the Nav System/FMS
- Position Reporting Procedures
- Position Reports - Waypoint Types
- Position Report Format
- Position Report Example
- Other Standard Air-to-Ground Messages
- 3-Minute Rule - Revised Estimate
- Video - Errors - When Things go Wrong
- Weather Reporting
- Large Height Deviations
- Conditional Clearances
- Video - Large Height Deviations
- SLOP - Strategic Lateral Offset Procedure
- Transponder Operation
- Enroute Wx - CAT
- Enroute Wx - Turbulence
- Enroute Wx - Turbulence Assessment
- Enroute Wx - Resource
- Equal Time Points
- ETP Calculation
- Point of Safe Return
- Wet Footprint
- ETOPS
- ETOPS On Flight Plans
- VOLMET
- METAR
- Altimeter Settings

## NAT Communication Procedures

- Communications - Concepts
- Communications - HF / VHF
- Communications - SELCAL
- HF Families
- HF Frequency Selection
- Monitor Frequencies

## SATCOM

- Communications Failure - General
- Comm. Failure Prior to Entering NAT Airspace
- Comm. Failure Prior to Exiting NAT
- Summary of Lost Comm. Procedures

## Contingency Actions

- Introduction
- SLOP
- Basic Contingency Procedures
- Weather Deviation Procedures
- ICAO Doc. 4444 - Introduction
- ICAO Doc. 4444 - General Procedures
- ICAO Doc. 4444 - Initial Actions
- ICAO Doc. 4444 - Subsequent Actions
- ICAO Doc. 4444 - ETOPS
- Video: Emergency on a Random Route above Tracks
- Video - Contingencies and Emergencies
- Loss of LRNS Capability - Introduction
- Loss of LRNS Capability
- Loss of All LRNS Capability

## Enhanced LRN Best Practices

- Introduction
- Preflight - Introduction
- Preflight - Master Flight Plan
- Preflight - Flight Plan Review
- Preflight - Position Initialization
- Preflight - Ramp Position
- Preflight - Checking Ramp Position
- Preflight - Database Routes
- Preflight - Flight Plan Route Entry
- Preflight - Flight Plan Route Verification
- Preflight - Master CFP Verification
- Preflight - Waypoint Verification
- Preflight - Upload Winds
- Preflight - Groundspeed Check
- Climb Out - Transition Altitude
- Climb Out - Manually Compute ETAs
- Class I & Class II Nav Review
- Enroute - Gross Accuracy Check
- Enroute - Approaching a Waypoint



- Enroute - Passing a Waypoint
- Enroute - Class II CFP Procedures
- Enroute - Class II CFP Procedures - Circle
- Enroute - Class II CFP Procedures - Slash
- Enroute - Class II CFP Procedures - X
- Enroute - Class II - Position Plotting
- Enroute - Class II - Plotting Chart & AIREP
- Enroute - Plotting Chart and AIREP - Completion
- Enroute 10-Minute Plot

- Oceanic Checklist
- Oceanic Checklist Use

## Europe P-RNAV Module

- Background
- The Beginning
- B-RNAV
- P-RNAV
- RNP-RNAV
- AC 90-96A

- P-RNAV SIDs /STARs
- Naming of RNAV SIDs / STARs
- STAR Termination
- ICAO Waypoint Definition
- Fly-By & Fly-Over
- Radio Phraseology
- Additional Radio Phraseology
- SIDs / STARs Phraseology

- Pre-Flight
- Pre-Flight Prep
- Approvals - FAA
- Approvals - AFM
- Database
- Preparation of ICAO Flight Plan
- NOTAMS
- Dual Systems
- RAIM
- SID Loading
- Flight Plan Check

- Departure

- Prior to Takeoff
- Review the Chart Notes
- Flight Director
- Line Up
- Flight Plan Monitoring

- Arrival
- Star Notes
- Flight Plan Check
- Flight Plan Monitoring
- Conventional Procedures

- Contingencies
- Lost Comm
- Loss of RNAV Capability
- Loss of the Primary RNAV Sensor System

- Incident Reporting
- EASA Incident Reporting

## Europe Module

- Planning
- State Rules and Regulations
- Russia
- Emergency Rules
- Approvals
- First Class Medical
- AOC
- Insurance
- ICAO Flight Plan
- Overflight Permits
- Landing Permit
- Curfew
- SAFA
- VIDEO: Planning

- Flow Management
- Video - Europe Traffic Flow
- Central Flow Management
- Slot Procedures
- Slot Allocation Message
- CFMU Help Desk



## Summary

### Radio Communications

- PANS-ATM Verbiage
- Line Up and Wait
- Flight Levels
- SIDs / STARs Verbiage
- FIR Boundaries
- Cleared To or Direct
- Enroute Chart Notes

### EU-Ops 1 Approaches

- EU-OPS and JAR-OPS
- CDFA
- CDFA Minimums

### Contingencies

- Weather Diversions
- Emergency Descent
- Emergency Descent Radio
- Emergency Descent - Minimum Altitude
- Comm Failure
- Lost Comm

## North America

### Sources and Content of International Flight Publications

- Preparation
- International Operations Manual
- FAA Oceanic Operations
- Jeppesen Airways Manual
- Jeppesen Enroute Charts
- NBAA
- ICAO

### Required Documents

- Documents for whom / what?
- Crew
- Class I Medical Certificate
- FCC Radio Operators Permit
- Passports
- Types of Passports

## Passengers

### Birth Certificates

- Does everyone need a passport?

- What is a Visa?

- Outside the U.S.

- Visa Requirements

- Types of U.S. Visas

- Visa Waiver Program

- VIDEO: Visa Waiver Program

- Visa Waiver Program Approved

- Visa Paperwork

- Status of Minors

- Aircraft

- Pets

## General

- Cabotage

- ICAO Flight Plan

- State.gov

- CDC

## US Customs

- Private or Commercial

- Outbound Clearance

- APIS & eAPIS

- Commercial APIS Filing

- Private eAPIS Filing

- eAPIS & CBP Destination Notification

- Southern Returns to the USA

- Border Overflight Exemption

- Border Overflight Exemption Process

- Information for Private Flyers

- Each office is different

- Passenger Declaration

- General Declaration

- I-92

- Customs Decal

- Regulated Garbage

## Canada

- Customs Notification

- Canadian Customs

- CANPASS



Entry Letter  
Firearms  
Curfew  
Weather  
Runway Friction  
CRFI Application  
Flight Plan  
SID/STAR  
Communications  
Uncontrolled Airport Communications  
Enroute Communications  
Shuttle Procedure

#### Mexico and Caribbean

Handler  
Weather  
Prist  
Insurance  
USVI

#### Gulf of Mexico and Cuba

Introduction  
Authorizations  
International Operations Manual  
Airspace  
International?  
Air Traffic Control  
Warning Areas  
Alert Areas  
Controlled Firing Areas  
Restricted Areas  
Navigation Requirements  
Long Range Navigation  
RNP-10 or 4  
RNP-10 or RNP-4 Operations  
NDB Navigation  
WGS-84  
HF and VHF Communications  
VHF Lo Gap  
Position Reports  
Military Operations  
Helicopter Operations  
Operations to Mexico

Operations to Cuba  
Cuba Overflight Permit  
Jeppesen LA 7 & 8 Chart  
FIR Hand-Off  
Ball Notes  
10 Minute  
FIR Contact Example

#### Extended Overwater

Definitions  
Required Emergency Equipment  
ICAO Flight Plan  
Communication and Navigation  
Exception to the Rule  
Flight Planning and Dispatch  
Equal Time Point Calculations  
Wet Footprint  
Search and Rescue Techniques  
ADIZ  
Intercept Procedures

#### WATRS Plus Airspace

Introduction  
Lateral Separation  
Vertical Separation  
Waypoint Types  
ICAO Flight Plan  
ICAO Flight Plan: Negative RNP  
RNP-10 Authorization  
RNP-10 LRNS  
No RNP-10  
Y-Routes Introduction  
Y-Routes Authorization  
Y-Routes Procedures  
HF Communications  
Communications Concepts  
HF Frequencies  
Monitor Frequencies  
Comm Failure  
VHF / Radar Coverage Routes  
Transponder Operation  
Bermuda  
Bermuda Airport



## Important Concepts

SLOP

LRNS Failure

Inflight Contingency Procedure

Basic Contingency Actions

Weather Deviation Procedures

ICAO Doc. 4444 - Introduction

ICAO Doc 4444 - General Procedures

ICAO Doc 4444 - Initial Actions

ICAO Doc 4444 - Subsequent Actions

ETOPS

Distress or Urgent Communications

Autopilot

Aircraft Specific Procedures

Verify Altimeters

Altimeters

Overshoot

Standby Altimeter

Mx Items

TCAS TA/RA Mode

TCAS Caution

Visual Perception

Wake Turbulence

Wake Turbulence Report

Numbers

RVSM Checklist

For Additional Information

## RVSM

### Authorizations

RVSM Authorization

US Letter of Authorization

US Change of Address - LOA

US FAA Ops Spec B046 - Part 135

US FAA Ops Spec D092 - Part 135

US FAA LOA for Non-Part 135 Aircraft

US FAA LOA Validity

EASA Authorization

### Contingency

Contingency Plans

RVSM Equipment Problems

Basic Contingency Procedure

RVSM Contingency

## ICAO Procedures Module

### Background

Overview

Introduction

ICAO Annexes

Other ICAO Documents

FAR 91.703

Information Sources

State Rules

PANS-OPS

### RVSM

FAA and EuroControl Guidance

Height Monitoring

Height Monitoring-USA

Height Monitoring-Europe

RVSM Worldwide

RVSM Locations

Russia RVSM

Mongolia RVSM

RVSM Altitudes

China FLAS

FLAS Example

Transition Areas

Flight Planning

Flight Plan - FAA Non PBN

Flight Plan - ICAO

Flight Plan - Equipment Error

Equipment Requirements

### General

ICAO Airport Codes

Jepp Terminal Briefing

Engine Start

Conditional Phrases in Clearances

Speed Limits

Approach Clearances

Approach Ban

Emergency and Interception



## PANS-OPS

- What is PANS-OPS?
- TERPS or PANS-OPS
- RWY Distance
- Approach Category
- Track
- Departure Climb Gradient
- SIDs
- SID Categories

## PANS-OPS Approaches

- TERPS vs. PANS-OPS - Procedures
- Holding
- Holding Limitations
- Approach Segments
- PANS-OPS Approach Segments
- Initial Approach Chart
- Final Approach Chart
- Initial Approach Speed
- Procedural Tracks
- TERPS Approach Procedures
- ICAO Reversal Procedures
- 45 - 180 PT
- 80 - 260 PT
- Base Turn PT
- Course Reversal Entry
- The 30° Entry Sector
- Base Turn - 30° Entry Sector
- Outside the Entry Sector?
- Racetrack Procedures
- Circling Procedures

## ICAO Altimetry

- QNH, QNE, and QFE
- Transition Layer
- Units of Measure
- Which Unit?
- mm
- Settings - Rule of Thumb
- Metric System
- MPS
- QFE Procedures

- QFE Introduction
- QNH and QFE Values
- Correction Factor
- QFE Procedures
- Emphasis
- High Elevation Airports
- EGPWS and Pressurization
- Summary

## ADS-B Module

### General Information

- Airspace
- What Is ADS-B
- Ground Based Radar
- Satellite Based Air Traffic Control
- Terminology (ADS-B Out, ADS-B In, ADS-R)
- Terminology (FIS-B, TIS-B)
- Regulatory Requirements Around the World
- Regional Specific Information
- Mandates Soon Approaching

### How ADS-B Works

- Broadcast Data
- Pilot Actions
- 1090ES
- UAT
- Rebroadcast
- Ground Stations
- 24-Bit Address

### ADS-B In and Out

- Airspace
- Traffic Display
- TIS-B
- FIS-B

### Benefits

- Radar Service
- Ground Operations
- Search and Rescue

### Operational Considerations



- U.S. Airspace General Operating Requirements
- U.S. Airspace and Equipment Requirements
- Operations Outside of U.S. Designated Airspace
- Equipment Certification and Installation
- Preflight Planning
- Equipment and Operator Familiarity and Failures
- Flight Plans
- Flight Crew Entry of Required Data
- Aircraft ID
- Operations Manuals and Checklists
- Maintenance Procedures
- MEL Considerations
- Dispatcher/Flight Follower Information
- Phraseology - Canada
- Phraseology - Australia
- Inoperative/Malfunctioning
- Transmitter/Transceiver
- Emergency and Abnormal Procedures
- Contingency Plans
- Human Factors

#### ADS-B In-Trail Procedure

- Design and Benefits
- ATC and ITP
- ITP Concept
- ITP Procedure
- Proposed ITP Operations Area

#### **CPDLC Module**

##### General Information

- General Information
- Texting
- Status of CPDLC Use
- Benefits
- Impact on Operations
- Primary Means of Communication
- What CPDLC is used for
- AC 120-70C
- Global Operational Data Link Document (GOLD)
- GOLD - Definitions
- GOLD - Flight Crew Procedures
- GOLD - Regional/State-specific information

#### S1P1 CPDLC DCL Document

- ADS-C and CPDLC
- ADS-C and CPDLC
- ADS-C Similarities
- ADS-C Differences Data Authority
- ADS-C Differences Human Interaction

#### CPDLC DCL

- CPDLC DCL
- Overview
- PDC
- DCL US
- 2016 CPDLC DCL Sites
- Subscriber Database
- ICAO FPL or FAA Web-Access SDB
- DCL Europe
- VIDEO: DCL
- Systems
- Pilot Perspective of DCL
- DCL Generation
- NAT Tracks
- FANS-over-Iridium for Gulfstream GIV/V
- Logon and Connection Establishment
- No Free Text
- Clearance Response
- Departure Runway
- Revised DCL Uplinks
- Cancel or Modify
- Service Termination
- Ops Problem Reporting
- CPDLC DCL Crew Job Aid

#### Flight Planning

- Flight Planning
- ICAO Flight Plan
- Enroute Charts
- VHF Frequencies for Data link

#### Connecting with ATS

- Connecting with ATS
- FMS
- Initial Logon





CPDLC Connection  
Connection Timings  
Data Authority - NDA  
End Service  
Jurisdiction

#### CPDLC Messages

CPDLC Messages  
New Message  
Climb to FL220  
Respond  
Verify Response  
Dialogues  
Conditional Clearance  
Conditional Clearance Accept  
ASRS Report  
When can we expect?  
Expect Higher At  
ATC Request  
ATC Request Altitude  
ATC Request Verify  
ATC Request Open  
ATC Request Standby  
ATC Uplink Request Approved  
CPDLC  
Version 1 January 2017  
ATC Uplink Accept  
Preformed vs Free Text  
Message Intent  
Arming the FMS  
Loadable Messages  
ATC Log

#### Emergency

Emergency  
Emergency Mode  
ATC Index  
Emergency Report  
Verify Report  
ADS-C Emergency  
Emergency CAS Message

#### Europe-specific Procedures

Europe-specific Procedures  
ATN B1  
Maastricht FIR  
No ADS-C  
ATS CDA Message  
Message Latency Timer  
Confirmation on VHF  
Position Reports Not Required

#### Pacific-specific Procedures

Pacific-specific Procedures  
Position Reports  
Position Report Page 1  
No ADS-C

#### AOC Messages

AOC Messages  
AOC Main Menu  
ATS Main Menu  
Oceanic Clearance  
ATC Status Message  
ATC Oceanic Clearance  
New York Center

#### ADS-C

ADS-C  
ADS Armed  
ADS Established  
ADS Established ATC LOGON Page  
Periodic Contracts  
Event Contracts  
Event Report Example  
Confirm ID

#### **Required Navigation Performance (RNP)**

##### Background

RNAV  
Satellite Systems  
Inertial Nav  
Advantages  
RNP  
Navigation Specifications



- RNP Phase of Flight
- Monitoring and Alerting
- PBN
- Requirements
- Database
- Multiple References
- WGS-84
- RNAV Airspace

#### RNP-10

- Introduction
- Use
- Areas
- Approvals
- Flight Plan
- Inertial Nav Only
- GPS Only
- Technical Note

#### RNP-4

- Introduction
- Overview
- ADS
- CPDLC
- FANS CNS
- Preflight

#### B-RNAV/RNP-5

- Introduction
- Explained
- In Europe
- Requirements
- Operations

#### RNAV-1/RNP-1

- Introduction
- Path and Terminator Legs
- Track Designators
- Waypoints
- Monitoring and Alerting
- Contingency Procedures
- The Unexpected

#### RNP Approaches

- Introduction
- AC 90-101A
- Features
- RF Legs
- RNP AR
- More RNP
- VIDEO: RNP at Juneau
- DCA RNP
- RNP Summary

#### RNAV-2/RNP-2

- Introduction
- Q-Routes
- T-Routes
- NextGen
- RNP-2

### **Pacific Ocean Region Module**

#### General Information

- Pacific Introduction
- Pacific FIRs
- Pacific Traffic
- Authorizations
- Pacific Information
- Pacific Resource Guide
- Important Concepts

#### Operations

- RVSM & RNP-10
- RNP-10 Route Structure
- RNP-10 Equipment
- RNP-10 Limits
- RNP-10 GPS
- MACH Number Technique
- Communications HF
- Communications SATCOM
- NOPAC VHF
- Guarding Frequencies
- Position Reports
- CPDLC
- Transponder



General Considerations  
Typhoons  
Ring of Fire  
Volcanoes  
Tsunamis

Central East Pacific (CEP) System  
PACOTS - Pacific Organized Track System  
NOPAC Route System  
NOPAC Route Check Procedures  
Airports  
Pacific Oceanic Airspace Entry Checklist  
SLOP  
Australia TSP

Contingency Actions  
Contingency Introduction  
Special Note - NOPAC  
Comm Failure  
NAV Failure

China RVSM  
Intro  
FLAS Table  
FLAS Table Example  
Transition Areas  
Chinese English

## **Latin and South America Module**

General Information  
Introduction  
Jepp Terms  
FAA Sensitive International Areas  
CFIT  
Hazards  
What's Ahead

Communications  
Introduction  
Enroute Communications  
Finding the Procedures  
HF Frequencies

Communicating with ATC  
HF and SELCAL Checks  
Guarding Frequencies  
Communications Problems  
Spanish and Portuguese  
Second Language  
Pronunciation  
Best Practices  
Coverage Gaps  
Lost Comm?

Airspace Control  
Who Controls the Airspace?  
FIRs  
The Filing Message  
Caribbean ATS  
Miami Oceanic  
Southbound from Miami FIR  
Radar Service  
Departing the Northeast U.S.  
Houston Oceanic Services  
West Coast Departures  
Overflight  
Landing  
Position Reports  
FIR Handoff  
Clearances at the FIR  
HI or LO Airspace  
Uncontrolled Airspace  
State Rules  
Transponder and TCAS  
Study the Charts and Plates  
Radar Contact?

Enroute and Terminal Navigation  
Navigation  
GPS WGS-84  
GPS  
GPS Caution  
Know Where You Are!  
HI to LO Airways  
Determining Terrain Elevation  
HI Charts



LO Charts  
Area Chart  
An Exercise  
An Exercise - Answer  
Arrival Plates  
MSA  
Missed Approach  
Cleared Direct  
EGPWS

Customs  
CARICOM eAPIS  
CARICOM eAPIS Submission  
Visas

Hazards  
Introduction  
CFIT  
Visual Illusions  
Runway Excursions  
Volcanoes  
VAAC  
Weather  
Hurricanes  
Heavy Rain  
Mountain Wave  
Fog  
Smog  
Weather Reports

## **ICAO Phraseology Module**

General Information  
Precise Communication  
Phraseology  
ICAO  
Who's Roger?  
Language - The Line Between

IATA Study  
World-Wide Data  
Notable Responses  
Communications Issues

Ambiguities in General Aviation Language  
Use of Slang and Rate of Speech  
Call Signs/Readbacks/Multiple Transmissions  
Multiple Language Users  
Accents and Pronunciation of English  
Non-Standard Phraseology/Errors in Technology  
Use  
Communications Solutions

English Language in Aviation  
Chronology of English Language in Aviation  
Demonstrate Language Proficiency  
Mandated International Aviation Language  
ICAO Rating Scale  
Re-Evaluation Intervals

Phraseology  
Standard Phraseology  
Non-Standard Phraseology  
Say This, Not That  
Say What?  
Misunderstandings  
Phraseology - Australia  
Phraseology - Canada  
Phraseology - Europe  
Phraseology - North America  
Phraseology in Abnormal/Emergency Situations

Contributory Factors  
General  
Pilot Workload  
ATC Workload  
Frequency Congestion  
Expectation of Clearance  
Radio Interference

Conclusions  
General  
Basic Guidelines



## Assessment

Demonstrate knowledge by successful test completion with a minimum score of 80% corrected to 100%.