

NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

February 17, 2021

Attachment 5 – Delta Air Lines A330 Training Curriculum [Excerpts]

OPERATIONAL FACTORS/HUMAN PERFORMANCE

DCA18LA163

DAY 2
Briefing: 1.5 Hours

Link to 642 Power Point briefing
Only available when viewing from DeltaNet

Airports and Runways Used:
KJFK 31L & 22L

Administration:

- Ensure you have your pilot certificate, medical and FCC Radio Operator permit.
- Ensure Surface tablet is charged, updated and pre-loaded with airports for training (see above right box).

BRIEFING ITEMS/ TASKS	LOCATION	REFERENCES
Systems Validation		
Memory Items Limitations Preflight Inspection Procedures		Quick Reference Handbook, Memory Items Operations Manual Vol 1, Limitations Operations Manual Vol 1, Exterior/Interior Inspection Walk Around Slides Training aid (Fleet webpage)
Maneuvers Validation (MV)		
KJFK		
Engine Failure after V ₁	Rwy 31L	FCTM 3, Takeoff and Initial Climb > Takeoff – Engine Failure FCTM 8, Non-Normal Operations > Engines QRH NNC.7.37
Rejected Takeoff	Rwy 31L	FCTM 3, Takeoff and Initial Climb > Rejected Takeoff Decision QRH NNC 0.27
Non ILS Approach	Rwy 31L	Vol 1, Normal Operational Information > Approach Guidance Vol 2 , Chapter 22 Autoflight>Approach Modes > Non-Precision Approaches Vol 2, Chapter 22 Autoflight > FMA Indications FCTM 5, Approach and Missed Approach > Non-ILS Instrument Approaches
CAT II Approach & Landing	Rwy 22L	Vol 1, Normal Operational Information > Approach Guidance Vol 2 , Chapter 22 Autoflight>Approach Modes > ILS Approaches Vol 2, Chapter 22 Autoflight > FMA Indications FCTM 5, Approach and Missed Approach > ILS Instrument Approaches Airway Manual OS 1.7
Engine Out ILS Approach	Rwy 31L	FCTM 5, Approach and Missed Approach> Engine Inoperative Approach ODM
Engine Out Missed Approach	Rwy 31L	FCTM 5, Approach and Missed Approach> Engine Inoperative Approach
Rejected Landing	Rwy 31L	FCTM 5, Approach and Missed Approach>Go-Around and Missed Approach FCTM 6, Landing > Flare and Touchdown > Rejected Landing
Engine Our Landing	Rwy 31L	FCTM 6, Landing > Flare and Touchdown ODM
Landing with Flap/Slat Malfunction	Rwy 31L	FCTM 8, Non-Normal Operations > Non-Normal Situation Guidelines FCTM 8, Non-Normal Operations> Flight Controls > Flap/Slat Malfunctions QRH NNC.9 ODM
Additional Training		
Inextinguishable Engine Fire	Rwy 31L	QRH NNC 8.7 QRH NNC 0.20 FOM 17, Emergency Operations FCTM 9, Human Factors

Initial Qualification

Syllabus:	A330
Segment:	Maneuvers
Module:	303
Instructor:	Flight Training Instructor

Media:	Classroom
Objective:	Discuss and review selected Procedures.
Crew (Duty) Position:	N/A.
Planned Time:	Approximately 1.5 hours.
Evaluation Method:	Instructor assessment of proficiency.
Requirement:	Demonstrate an appropriate level of understanding for the following items:

Windshear

Predictive Windshear

ECAM Discipline

*LOC & FPA Mode Approach**Final APP Mode Approach*

QRH Procedures

Low Oil Pressure

Engine Fire

CRM Procedure

Media:	Training Device (FFS)
Objective:	Demonstrate appropriate knowledge of systems.
Crew (Duty) Position:	Captain – PF/PM, First Officer – PF/PM.
Planned Time:	Approximately 4.0 hours.
Evaluation Method:	Instructor assessment of proficiency.
Requirement:	The following are accomplished by each crewmember unless otherwise noted. Only those portions of the listed tasks that involve maneuver skills are trained.

21. Normal Takeoff Operations

3.1 Climb Operations

Area Departure

6.2 Non – Precision/Non – ILS Approach Operations

LOC & FPA Mode

6.7 Missed Approach Operations

6.7.4 Rejected Landing

Terrain Surrounding Airport

6.9 RNAV Approach Operations

Final APP Mode

7.1 Landing Operations

9.1 Aircraft System Non – Normal Procedure Operations

Low Oil Pressure (One Only)

Engine Fire (One Only)

Initial Qualification

Syllabus:	A330
Segment:	Line Operational Simulation
Module:	401
Instructor:	Flight Training Instructor

Media:	Classroom																				
Objective:	Discuss and review selected topics.																				
Crew (Duty) Position:	N/A.																				
Planned Time:	Approximately 1.5 hours.																				
Evaluation Method:	Instructor assessment of proficiency.																				
Requirement:	Demonstrate an appropriate level of understanding for the following items:																				
	<table> <tr> <td>Flight Planning</td><td>Cold Weather Operations</td></tr> <tr> <td>Taxi Out</td><td>Landing (Contaminated Runway)</td></tr> <tr> <td>FANS/HF/VHF</td><td>QRH Procedures</td></tr> <tr> <td>Atlantic Oceanic Orientation Chart</td><td>F/CTL Stab Cntl Fault</td></tr> <tr> <td>Tire Wear Training</td><td>Eng 1 (2) Fire</td></tr> <tr> <td><i>CRM Procedure</i></td><td>Ditching</td></tr> <tr> <td>Non – Precision/Non – ILS Operations</td><td>Driftdown</td></tr> <tr> <td><i>LOC & FPA Mode</i></td><td>Dual Engine Failure</td></tr> <tr> <td>Hazardous Materials Receipt</td><td>Engine Relight</td></tr> <tr> <td><i>Oceanic Track Exit</i></td><td></td></tr> </table>	Flight Planning	Cold Weather Operations	Taxi Out	Landing (Contaminated Runway)	FANS/HF/VHF	QRH Procedures	Atlantic Oceanic Orientation Chart	F/CTL Stab Cntl Fault	Tire Wear Training	Eng 1 (2) Fire	<i>CRM Procedure</i>	Ditching	Non – Precision/Non – ILS Operations	Driftdown	<i>LOC & FPA Mode</i>	Dual Engine Failure	Hazardous Materials Receipt	Engine Relight	<i>Oceanic Track Exit</i>	
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<i>Oceanic Track Exit</i>																					

	Media: Training Device (FFS)
Objective:	Demonstrate appropriate level of LOS skills.
Crew (Duty) Position:	Captain – PF/PM, First Officer – PF/PM.
Planned Time:	Approximately 4.0 hours.
Evaluation Method:	Instructor assessment of proficiency.
Requirement:	The following tasks are accomplished during LOS by the Captain unless otherwise noted.

- 1.1 Flight Planning Procedures
- 1.2 Before Start Operations
- 1.3 Pushback/Start Operations
- 1.4 Taxi/Before Takeoff Operations
 - Complex Taxi
 - Runway Change
- 2.1 Normal Takeoff Operations
 - Heavyweight (Capt Only)
 - Light Weight (F/O Only)
- 3.1 Climb Operations
 - Managed Area Departure
 - Reroute
 - Altitude Constraints
- 4.1 Cruise Operations
 - Nav Accuracy Check
 - Oceanic Entry – European Theater
 - SelCal Check
 - SLOP
 - RVSM
 - Driftdown
 - Communications

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- 5.1 Descent/Approach Preparation Operations
 - Oceanic Track Exit
 - 6.2 Non – Precision/Non – ILS Approach Operations
 - LOC & FPA Mode*
 - 6.3 CAT I ILS Precision Approach Operations (F/O Only)
 - 7.1 Landing Operations
 - 7.2 Perform Landing with Engine Out Operations (Capt Only)
 - 8.1 After Landing Operations
 - 9.1 Aircraft Systems Non – Normal Operations
 - Power Plant
 - Engine Fire
 - Dual Engine Failure
 - Engine Relight
 - Flight Controls
 - F/CTL Stab Cntl Fault (F/O Only)
 - 9.17.1 Emergency Landing/Ditching Preparation
 - 11.7.1 Terrain Induced GPWS/EGPWS Warning/Caution Recovery Procedures
 - 12.2 Crew Resource Management
 - Pilots demonstrate CRM skills appropriate for the LOS scenario
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Media:	Classroom/Training Device
Objective:	Debrief activity accomplished in training device with emphasis on CRM/TEM considerations and introduce content of next training module.
Crew (Duty) Position:	N/A.
Planned Time:	Approximately 0.5 hours.
Evaluation Method:	N/A.