OVERDRIVE INTERACTIVE

AIRBUS A320 · MCDU · ND · WEATHER RADAR

A320 MCDU Trainer

Instructor Guide



Version 2.0 · Android tablet / phone · Windows PC

Classroom set-up, license codes, quick reference,
eight ready-to-teach lessons with answer keys, and an assessment checklist.

For academic, familiarization and training purposes only. Not for operational use.

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HOW TO USE THIS GUIDE

Chapters 1 to 5 prepare the class. Chapters 6 to 16 are lessons you can teach in order: each one has objectives, the steps the students follow, an **answer key** taken from the trainer itself, and the mistakes students usually make. Chapter 17 is a checklist you can print for practical assessment.

CHAPTER 01

About the Trainer

The A320 MCDU Trainer puts the Airbus A320 Multipurpose Control and Display Unit, the Navigation Display and the weather radar panel on a tablet, phone or PC, so students can practise flight management before they meet the real cockpit or a full simulator.

What students learn

- How the MCDU works: the 14-line display, line select keys, scratchpad, CLR and the Airbus colour code.
- Cockpit preparation: INIT A, INIT B (weights and fuel), checking the F-PLN, PERF take-off data, RAD NAV.
- Flight plan revisions: constraints, inserting and clearing waypoints, discontinuities, LAT REV and the temporary flight plan.
- Reading the ND in ROSE, ARC and PLAN, and following the flight as waypoints sequence.
- DIR TO and what happens when the aircraft reaches a discontinuity.
- Weather radar operation: WX, WX+T, TURB, MAP, gain and tilt, and planning a deviation around a storm.
- The approach phase, the go-around (TOGA), a second approach or a diversion (ENABLE ALTN), and the IRS position check.

The screen



DUAL view: MCDU on the left, Navigation Display in the middle, EFIS and weather radar panels on the right, TRAINER box under the ND.

Part	What it is
MCDU	Display, 12 line select keys (LSK), page keys, slew keys, alphanumeric keyboard, annunciators.
ND	Captain's Navigation Display with the flight plan and weather radar returns.
EFIS CTL	ND mode selector (ROSE ILS / VOR / NAV, ARC, PLAN), range selector 10–320 NM, option pushbuttons.
WEATHER RADAR	MultiScan panel laid out as in the aircraft: GAIN and TILT knobs, MODE selector, SYS, MULTISCAN, GCS and PWS switches.
TRAINER dashed	Exists only in the trainer: FLY / PAUSE, speed ×1 ×4 ×16, RESET, FAULTS, and hints for the instructor.

> **TRAINER BOXES**
> Anything inside a dashed amber box is a trainer control, not a cockpit control. Tell the students so on day one.

Airbus colour code (used on the MCDU)

Colour	Meaning	Example
White	Titles, prompts, labels, advisory messages	INIT, <RETURN, FORMAT ERROR
Blue	Data the crew can change, brackets	RPLL/RPVM, [ ]
Green	Active or computed data, not modifiable	Predictions, TOW, RWY
Amber	Mandatory entries (boxes), important messages	□□□□/□□□□, *ERASE / INSERT*
Magenta	Constraints	250/+5000
Yellow	Temporary flight plan (TMPY)	LAT REV and DIR TO changes before INSERT

Large characters are entries and modifiable data; small characters are labels and computed or default values (for example the ISA temperature after the cruise level).

Simplifications you should mention

- **Training data:** every waypoint, VOR, NDB, ILS and frequency is **fictional**. Airport positions are real but rounded. The trainer has no SIDs, STARs, airways or holds.
- **Performance:** predictions use a simple model (climb about 2.6 NM per 1000 ft, descent 3 NM per 1000 ft, 250 kt below FL100, 300 kt / M.78 above, no wind in predictions). Fuel values are realistic in size, not exact.
- **Weather:** eight training storm cells near the Manila–Cebu route.
- Functions that exist in the aircraft but not in the trainer show the white message `NOT SIMULATED`.

CHAPTER 02

Classroom Set-up

The trainer runs on Android tablets and phones and on Windows PCs. Every device needs its own license code (see Chapter 3); after activation it works offline.

Recommended equipment

Device	Best use	Notes
Windows PC + projector	Instructor demonstration	DUAL view shows MCDU, ND and panels together. You can type on the MCDU with the computer keyboard.
Android tablet	Student practice	Landscape. DUAL view on 10-inch tablets, or MCDU and ND/WXR views separately.
Android phone	Homework and revision	MCDU view puts the keyboard beside the display so the keys stay usable.

Installing on Android

1. Open `opulencecircle82.github.io/OI/mcdu` on the device, or scan the QR code on that page.
2. Tap **Download APK**. Allow "Install unknown apps" for the browser when Android asks.
3. Open **A320 MCDU**, enter the license code (internet needed once), and agree to the notice.

Installing on Windows

1. Download **A320_MCDU_Trainer_Setup_v2.0.exe** from the same page and open it.
2. If Windows shows "Windows protected your PC", click **More info**, then **Run anyway**. The app is not code-signed; this is expected.
3. Follow the Setup (Next, accept the notice, Install). No administrator rights are needed. A desktop shortcut can be created.
4. Open **A320 MCDU Trainer** and enter the license code.

Views

The tabs at the top select `MCDU`, `ND / WXR` or `DUAL`. Tablets start in DUAL, phones in MCDU. The app always runs in landscape.



TRAINER box: FLY / PAUSE, simulation speed, RESET.

Knobs and switches

The EFIS and weather radar panels use knobs, selectors and toggle switches like the aircraft. There is no coloured "selected" light: the position of the knob pointer or the switch lever shows the setting.

Control	Touch screen	PC (mouse)
Knob or selector (GAIN, TILT, MODE, ND mode, range)	Drag around the knob to turn it. Tap a mark to go straight to it, or tap the left / right half of the knob for one step.	Drag around the knob, click a mark, or use the mouse wheel over the knob.
Toggle switch (SYS, MULTISCAN, GCS, PWS)	Tap a position label, or tap the switch to move the lever.	Click a label or the switch.

Running a session

- **FLY** needs FROM/TO and a CRZ FL (the box tells you what is missing). Erase or insert any temporary flight plan first.
- **×16** flies Manila–Cebu in about three minutes; **×1** is real time (about 50 minutes).
- **RESET** puts the aircraft back at the gate with the flight plan as it was at take-off, so the next student can start again. INIT data and PERF data are kept; all faults are removed.
- To start completely fresh, close and reopen the app.

> **TEACHING TIP**
> Demonstrate on the projector with the PC, then let students repeat the same steps on their tablets. The lessons in Chapters 6 to 16 are written for that rhythm.

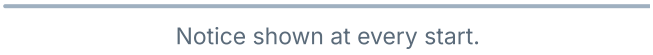
CHAPTER 03

License Codes & Admin Page

Each device needs a license code such as `MCDU-k7Rm9Qx2`. A code works on one device at a time. A320 FAP codes do not work in the MCDU Trainer, and MCDU codes do not work in the FAP.



Start screen: license code or free demo.



Notice shown at every start.

Rules students must know

- Codes are **case-sensitive**: capital letters, small letters and numbers must be typed exactly.
- Activation needs internet **once**. After that the trainer works offline.
- Reinstalling on the same device does not need a new code: the device is recognised.
- New device: on the old one open ⚙ Settings → **Deactivate & Transfer License** (online), then enter the same code on the new device.
- Free demo code `MCDU-DEMO` (no internet): INIT and F-PLN pages and the ND only. Other keys ask for a license code.

Admin page (for the instructor)

Open `opulencecircle82.github.io/OI/admin` and sign in. Choose the tab **A320 MCDU Trainer** (codes start with MCDU-).

Section	What to do
Unused codes	Always exactly 10. **Copy** one and give it to a student. A new code is created automatically when one is used. **Replace** only if a code was shared by mistake.
Used codes	Listed by platform: 📱 Android or 💻 PC, with the activation date and device.
Release	Use when a student's device is broken or lost: the code is freed for the same student's new device. Give it back only to the same owner.
Transferred	Codes that moved to another device at least once.

KEEP CODES PRIVATE

A used code cannot be given to another person. Hand codes out individually; never post the list in a group chat.

CHAPTER 04

Quick Reference



The MCDU: display, line select keys, page keys, slew keys and keyboard.

Keys

Key	Function
LSK 1L–6L, 1R–6R	Put the scratchpad entry on the line beside the key, or select the prompt on that line. LSK n sits beside display line 2n.
DIR PROG PERF INIT DATA	Direct to, progress, performance (opens the page of the current phase), initialization, data index.

F-PLN RAD NAV FUEL PRED	Flight plan, radio navigation, fuel prediction (after take-off).
SEC F-PLN ATC COMM MCDU MENU	Pages shown; functions not simulated (MCDU MENU → <FMGC returns to INIT).
AIRPORT	F-PLN page with the destination, then the alternate, then the origin (before take-off).
← →	Next / previous page (INIT A ↔ INIT B, F-PLN A ↔ B).
↑ ↓	Scroll. On F-PLN, ↑ shows the later waypoints (Airbus convention).
CLR	Delete the last character; hold to clear the scratchpad; on an empty scratchpad shows CLR so the next LSK deletes that field.
+/- / SP OVFY	Sign (press twice for +), slash, space, overfly symbol Δ.
BRT DIM	Display brightness.

On a PC: letters, digits, / and . type directly; Backspace = CLR, Space = SP, - = +/-, arrow keys = slew keys.

Entry formats

Field	Format	Range / example
FROM/TO (INIT 1R)	XXXX/YYYY	RPLL/RPVM
CO RTE (INIT 1L)	Route name	RPLLRPVM1
ALTN (INIT 2L)	ICAO	RPMD
FLT NBR (INIT 3L)	1–8 letters/digits	OI320
COST INDEX (INIT 5L)	Number	0–999
CRZ FL/TEMP (INIT 6L)	350, FL350, 350/-50	FL010–FL398
ZFW/ZFWCG (INIT B 1R)	62.5/27, 62.5, /27	35.0–80.0 t / 8.0–50.0 %
BLOCK (INIT B 2R)	Tonnes	0.0–19.0
V1, VR, V2 (PERF 1L–3L)	Knots	90–350, V1 ≤ VR ≤ V2
FLAPS/THS (PERF 3R)	1/UP1.0 or /0.5DN	Flaps 0–3, THS 0–5.0
FLEX TO TEMP (PERF 4R)	°C	0–80
Constraint (F-PLN right LSK)	SPD/ALT, /ALT, SPD/	250/+5000, /FL120, -8000
VOR / ILS / ADF (RAD NAV)	Ident or frequency	108.00–117.95 / 108.10–111.95 / 190–1750
QNH (PERF APPR 1L)	hPa or inHg	745–1100 or 22.00–32.48

Altitude constraints: **+** means at or above, **–** at or below, no sign means at. Altitudes are shown in feet below the transition altitude (11000 ft) and as flight levels above it; in descent the transition level FL130 is used.

Scratchpad messages

Message	Meaning
FORMAT ERROR	The entry is not in a valid format for that field.
ENTRY OUT OF RANGE	Correct format, but the value is outside the allowed range.
NOT IN DATABASE	The identifier does not exist in the training database (or is the wrong type, e.g. an NDB in a VOR field).
NOT ALLOWED	This line cannot be changed now (e.g. clearing the origin, FROM/TO in flight).
V1/VR/V2 DISAGREE	Take-off speeds are not in the order V1 ≤ VR ≤ V2.
TMPY F-PLN EXISTS	Insert or erase the temporary flight plan first.
DEST EFOB BELOW MIN	Amber. Predicted fuel at destination is below MIN DEST FOB.
NOT SIMULATED	Trainer only: the function exists in the aircraft but not in this trainer.

Press `CLR` once to remove a message; the student's entry comes back so it can be corrected.

CHAPTER 05

The Training Database

Airport codes and positions are real (rounded). Every waypoint, navaid and frequency below is **fictional**, made for this trainer. Never use them for real flight planning.

Airports

ICAO	Airport	Elevation	Runway used
RPLL	Manila Ninoy Aquino Intl	75 ft	06
RPVM	Mactan-Cebu Intl	31 ft	22
RPMD	Davao	96 ft	05
RPLC	Clark	484 ft	02
RPVI	Iloilo	27 ft	02
RPVP	Puerto Princesa	71 ft	09
RPVK	Kalibo	14 ft	05
RPLI	Laoag	25 ft	01
RPVD	Dumaguete	15 ft	09
RPMZ	Zamboanga	33 ft	09

Company routes

CO RTE	Route
RPLLRPVM1	RPLL ALPAS BATIS DAGAT LAWIN TALAB RPVM
RPVMRPLL1	RPVM TALAB LAWIN DAGAT BATIS ALPAS RPLL
RPLLRPMD1	RPLL ALPAS BATIS DAGAT LAWIN SINAG BAYBY RPMD
RPVMRPMD1	RPVM HALIK BAYBY RPMD

Fictional waypoints

Ident	Position	Ident	Position
ALPAS	1400.0N 12122.8E	KULOG	1248.0N 12312.0E
BATIS	1312.0N 12158.8E	BAGYO	1200.0N 12154.0E
DAGAT	1224.0N 12221.0E	SIKAT	1348.0N 12224.0E

LAWIN	1134.2N 12305.4E	TUBIG	1106.0N 12230.0E
TALAB	1048.6N 12337.2E	PULOS	1154.0N 12342.0E
SINAG	0936.0N 12418.0E	ULAPS	1336.0N 12048.0E
BAYBY	0818.0N 12500.0E	BITUN	1524.0N 12118.0E
HALIK	0912.0N 12430.0E		

Fictional navaids

Ident	Type	Frequency	Near
LLV	VOR	113.80	RPLL
MCV	VOR	112.30	RPVM
DVV	VOR	113.10	RPMD
RBV	VOR	114.50	Route, near DAGAT
LN / MN	NDB	350 / 382 kHz	RPLL / RPVM
ILL	ILS	109.90, CRS 238	RPLL RWY 24
IMV	ILS	110.30, CRS 222	RPVM RWY 22
IDV	ILS	109.30, CRS 053	RPMD RWY 05

Weather scenario

Cell	Where	Strength / tops
Severe thunderstorm	On the BATIS–DAGAT leg, about 10 NM north-west of DAGAT (1233N 12218E)	Red core, turbulence, tops FL430
Line of storms	Across the route around LAWIN, mostly north-east of it	Red / amber, turbulence, tops FL330–FL390
Moderate showers	Near BATIS	Amber / green, tops FL260
Light rain	South of LAWIN (wide area)	Green, tops FL180
Isolated cell	East of Mactan, near the arrival	Red core, turbulence, tops FL310
Light showers	Over Mindoro	Green, tops FL150

The simulated wind is a constant 060° / 15 kt (5 kt below 3000 ft). Magnetic variation is taken as 0°.

CHAPTER 06 · LESSON 1

MCDU Familiarization

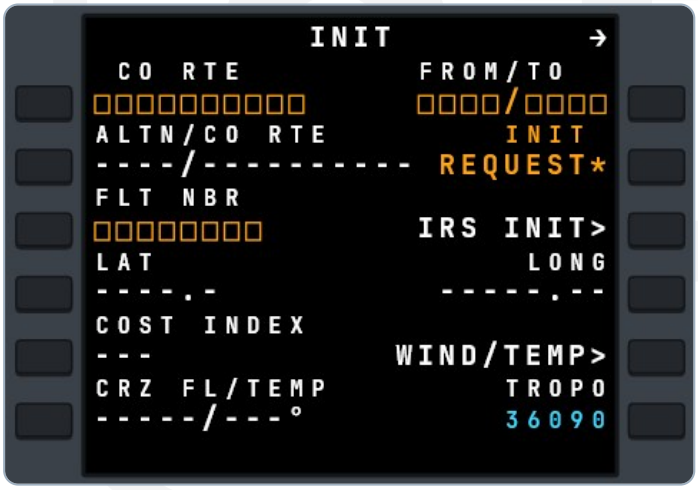
Duration: 20–30 minutes. Students learn the layout, the scratchpad and the colour code before entering any real data.

Objectives

- Name the parts of the MCDU and match each line select key to its line.
- Type, correct and clear the scratchpad.
- Read the colours: amber boxes, blue, green, white.

Steps

1. Open the trainer. The MCDU shows **MCDU MENU**. Press `LSK 1L` (<FMGC) or `INIT`.
2. Point out the title line, the six label/data pairs and the scratchpad (bottom line).
3. Type `ABC`. Press `CLR` once (deletes C). Hold `CLR` (clears all).
4. Press `CLR` on the empty scratchpad: it shows **CLR**. Press `CLR` again to cancel.
5. Ask: which fields are mandatory on INIT A? (amber boxes: CO RTE or FROM/TO, FLT NBR).
6. Press each page key and name the page. SEC F-PLN and ATC COMM show **NOT SIMULATED** on their prompts.



INIT A before any entry: amber boxes are mandatory, TROPO is a blue default (small font).

Common mistakes

- Pressing the LSK before typing. The entry always goes into the scratchpad first.
- Expecting a touch on the screen to work: on the MCDU only the keys work.

CHAPTER 07 · LESSON 2

Cockpit Preparation

Duration: 45 minutes. A full MCDU set-up for Manila (RPLL) to Cebu (RPVM). Every value in the answer key comes from the trainer.

Briefing data to give the students

Item	Value	Item	Value
FROM/TO	RPLL/RPVM	ZFW/ZFWCG	62.5/27
Alternate	RPMD	Block fuel	8.5 t
Flight number	OI320	V1/VR/V2	140/145/150
Cost index	35	FLAPS/THS	1/UP1.0
Cruise	FL350	FLEX	45 °C

Steps

1. **INIT**: type `RPLL/RPVM`, **1R**. ROUTE SELECTION appears (company route RPLLRPVM1). **6R** INSERT*.
2. `RPMD` → **2L**; `OI320` → **3L**; `35` → **5L**; `350` → **6L**.
3. → to INIT B: `62.5/27` → **1R**; `8.5` → **2R**.
4. **F-PLN**: check the route, scroll with ↑ to the end.
5. **PERF**: V1/VR/V2 on **1L**–**3L**, `1/UP1.0` → **3R**, `45` → **4R**.

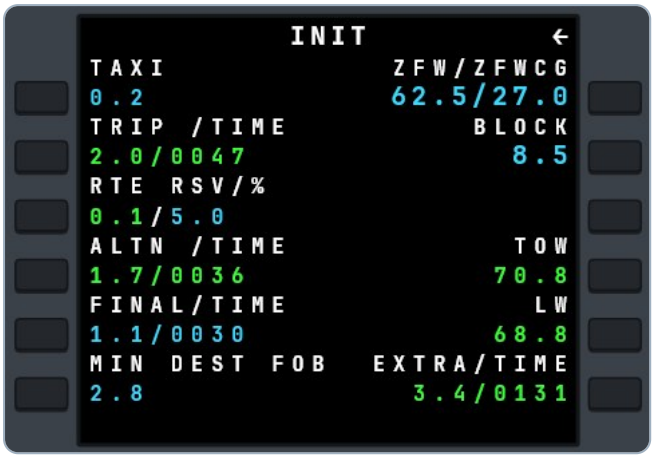


ROUTE SELECTION after FROM/TO.



INIT A completed. ISA temperature −54° in small font.

Answer key · INIT B



INIT B after ZFW/ZFWCG and BLOCK.

Field	Expected
TRIP / TIME	2.0 / 0047
RTE RSV / %	0.1 / 5.0
ALTN / TIME	1.7 / 0036
FINAL / TIME	1.1 / 0030
TOW	70.8 t
LW	68.8 t
MIN DEST FOB	2.8 t
EXTRA / TIME	3.4 / 0131

Discussion: TOW = ZFW + BLOCK − TAXI = 62.5 + 8.5 − 0.2 = 70.8 t. LW = TOW − TRIP. MIN DEST FOB = ALTN + FINAL.

Answer key · F-PLN



Top of the F-PLN.

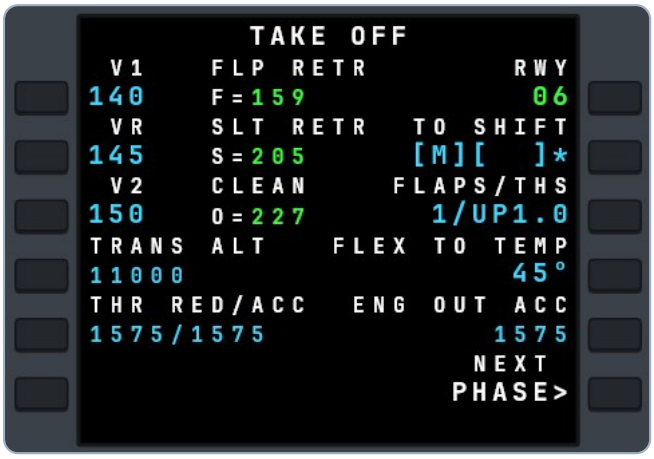


Scrolled to the end with ↑.

Leg	Track	Distance	Predicted (from take-off)
RPLL → ALPAS	145°	37 NM	0007 · 300 kt · FL143
ALPAS → BATIS	144°	59 NM	(T/C) at 0015, 91 NM; BATIS 0016 · FL350
BATIS → DAGAT	156°	53 NM	0023 · FL350
DAGAT → LAWIN	139°	66 NM	(T/D) at 0030; LAWIN 0031 · FL307
LAWIN → TALAB	146°	55 NM	0039 · 300 kt · 12319 ft
TALAB → RPVM	145°	37 NM	0047 · 31 ft

DEST line: RPVM, TIME 0047, DIST 307 NM, EFOB 6.3 t.

Answer key · PERF TAKE OFF



PERF TAKE OFF completed.

Field	Expected
F / S / O	159 / 205 / 227 (green, from TOW)
RWY	06
TRANS ALT	11000 (Philippines)
THR RED/ACC	1575/1575 (elevation + 1500 ft)

TRY THIS

Enter V2 = 135: the scratchpad shows V1/VR/V2 DISAGREE.

CHAPTER 08 · LESSON 3

Flight Plan Revisions

Duration: 40 minutes. Start from the Lesson 2 flight plan. Students learn the difference between direct F-PLN edits (no TMPY) and revisions through LAT REV (temporary plan).

A · Constraint

1. On F-PLN type `250/+5000` and press the **right** key beside ALPAS (2R).
2. Expected: ALPAS shows **250/+5000** in magenta. The prediction (FL143) meets it, so it stays magenta; a missed constraint turns amber.



Speed and altitude constraint at ALPAS.

B · Insert a waypoint, then clean up

1. Type `KULOG`, press the **left** key beside DAGAT (5L). KULOG is inserted **before** DAGAT and a **F-PLN DISCONTINUITY** follows it. No TMPY.
2. Scroll with ↑. Distance to destination becomes 385 NM, EFOB 5.8 t.
3. Press CLR (scratchpad shows CLR), then the key beside the discontinuity: the route joins KULOG–DAGAT.
4. CLR + key beside KULOG: KULOG is replaced by a discontinuity. CLR + key beside it again: BATIS–DAGAT is back.



KULOG inserted, discontinuity after it.



CLR waiting for a line select key.

> **TEACHING POINT**
> Typing a waypoint that is already further down the plan does not create a discontinuity: the waypoints in between are removed and the route joins up. Ask students to insert LAWIN before ALPAS and explain the result (RPLL LAWIN TALAB RPVM).

C · LAT REV and the temporary flight plan

1. Press `2L` (beside ALPAS) with an empty scratchpad: **LAT REV FROM ALPAS**.
2. Type `SIKAT` → `3R` (NEXT WPT). A **yellow TMPY** plan appears, also on the ND as a dashed yellow line.
3. Discuss, then `6L` *ERASE (or `6R` INSERT* to accept).
4. Diversion exercise: from LAT REV at RPLL enter `RPVI` → `4R` (NEW DEST). TMPY: RPLL, discontinuity, RPVI. ERASE it after the discussion.



LAT REV with NEXT WPT SIKAT: yellow TMPY on the MCDU and on the ND.

Common mistakes

- Using the right key to insert a waypoint (right keys are for speed/altitude).
- Leaving a TMPY open: FLY and DIR TO ask for it to be inserted or erased first (TMPY F-PLN EXISTS).
- Trying to clear the FROM line, the origin or the destination: NOT ALLOWED.

CHAPTER 09 · LESSON 4

Navigation Display & EFIS

Duration: 20 minutes. Students match what they see on the ND with the F-PLN page.



EFIS control panel (ND part).

Mode	Use
ROSE ILS	ILS course and localizer deviation (ILS tuned on RAD NAV)
ROSE VOR	VOR 1 course and deviation (VOR1 + CRS on RAD NAV)
ROSE NAV	360° view around the aircraft
ARC	View ahead, the normal flight mode
PLAN	North up, centred on the TO waypoint, for checking the plan (no weather)

ND symbols

Symbol	Meaning
Yellow aircraft, yellow lubber line	Own aircraft and heading
Green diamond on the scale	Track (differs from heading because of the wind)
Green line / white diamond	Active flight plan / TO waypoint
Yellow dashed line	Temporary flight plan
Blue dashed line	Route to the alternate
Magenta	Option data: CSTR, WPT, VOR.D, NDB, ARPT (one option at a time)
Top left / top right	GS, TAS, wind / TO waypoint, bearing, distance, ETA



PLAN, 160 NM, at the gate.



ROSE NAV with WPT: nearby waypoints in magenta.

Questions for the students

1. Which waypoint is the TO waypoint and how far is it? (top right of the ND, white on the F-PLN).
2. Why is the track diamond not on the lubber line? (wind correction: wind 060°/15 kt).
3. Which option shows the altitude constraint entered in Lesson 3? (CSTR).

CHAPTER 10 · LESSON 5

Flying the Plan

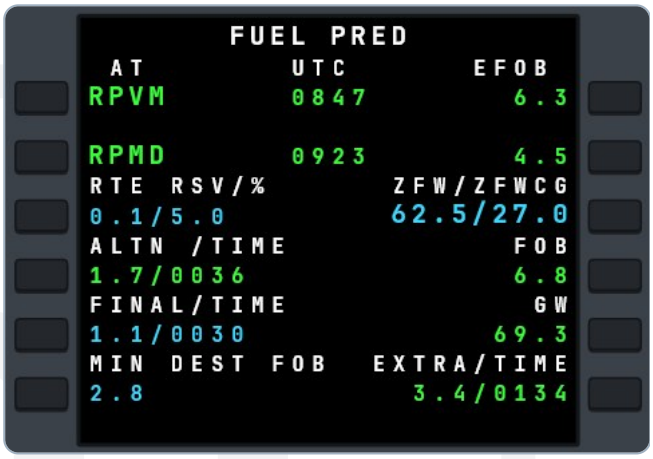
Duration: 30 minutes. The aircraft flies the plan; students watch sequencing, use PROG, FUEL PRED and DIR TO, and see what a discontinuity does in flight.

A · Sequencing

1. With the Lesson 2 plan, open **F-PLN** and press **FLY**, then **×16**.
2. Each time a waypoint is passed it becomes the FROM line (with the time, speed and altitude when it was passed) and the next one turns white. The TIME column now shows UTC.
3. Open **PROG**: enter TALAB on **4R** to read bearing and distance. Open **FUEL PRED**: fuel at RPVM and RPMD.



PROG in cruise.



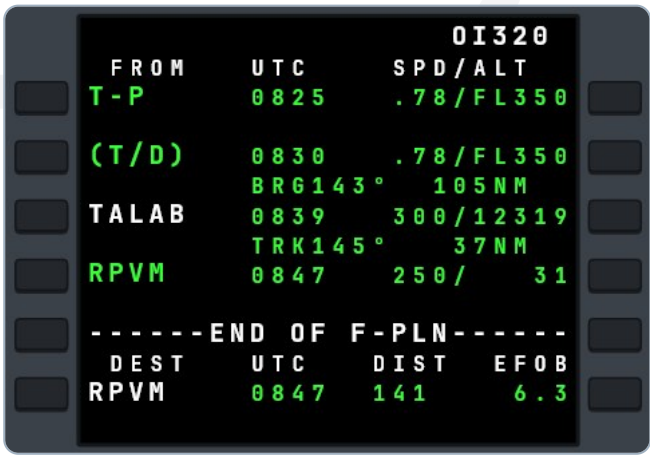
FUEL PRED in flight.

B · DIR TO

1. Press **DIR**, type TALAB → **1L** (or pick it from the list). The new route is a yellow TMPY.
2. **6R** INSERT*. The FROM line becomes **T-P** (turning point) at the present position; TALAB is the TO waypoint.



DIR TO TALAB before INSERT.



After INSERT: T-P is the FROM point.

C · Reaching a discontinuity

1. Close and reopen the app. Enter **RPLL/RPVM** but press **6L** <RETURN on ROUTE SELECTION: the plan is RPLL, discontinuity, RPVM. Enter CRZ FL 350.
2. Press FLY. The TO point is the discontinuity: managed navigation is lost and the aircraft keeps its runway track (060°). The TRAINER box explains it.
3. Ask the students to recover: CLR the discontinuity (direct to RPVM), enter a waypoint on it, or use DIR TO.



Discontinuity as the TO point: the aircraft flies straight ahead.

CHAPTER 11 · LESSON 6

Weather Radar

Duration: 45 minutes. Fly the Lesson 2 plan at ×4 or ×16 to about FL300 near BATIS, then pause and work through the radar settings.



MultiScan weather radar panel.

Control	Effect in the trainer
SYS switch 1 / OFF / 2	Radar on (system 1 or 2) or off
MODE selector WX	Rain: green, amber, red
MODE WX+T	WX plus turbulence in magenta, within 40 NM
MODE TURB	Turbulence only, within 40 NM
MODE MAP	Ground returns: land green/amber, water black
MULTISCAN switch AUTO	Automatic tilt; ground clutter removed when the GCS switch is ON
MULTISCAN switch MAN	The TILT knob moves the antenna (0 = horizon, UP 15° to DN 15°); GCS has no effect
GAIN knob	CAL (normal) = calibrated gain. Turning towards MIN or MAX (marks −12 to +12) gives manual gain and MAN GAIN (amber) on the ND
PWS switch	OFF / AUTO (predictive windshear is not simulated)

The radar scans 60° each side of the nose. It is not shown in PLAN mode. The ND shows the mode and the tilt (or AUTO) bottom left. The TILT knob can be turned in AUTO too, but it only moves the antenna in MAN.

A · Modes



WX, 160 NM: the severe cell near DAGAT and the line near LAWIN.



WX+T, 40 NM: magenta turbulence close to the cells.

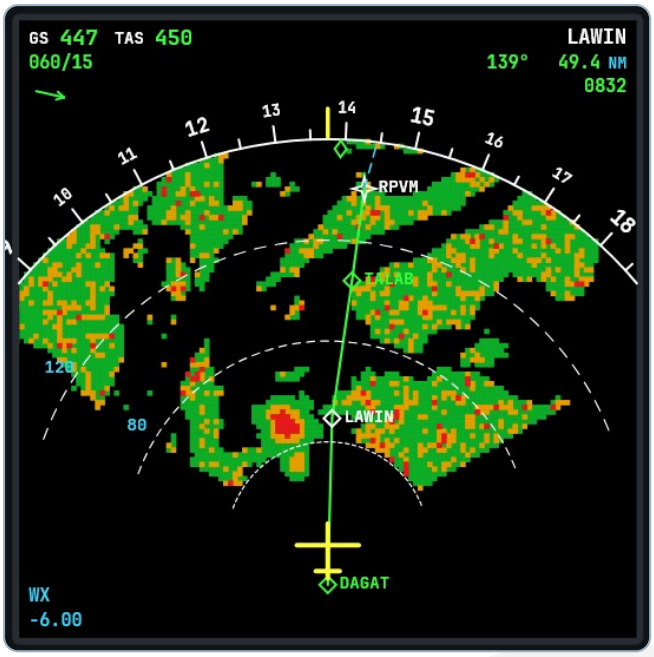


TURB, 80 NM: only turbulence within 40 NM.



MAP: the islands as ground returns.

B · Tilt management (MULTISCAN MAN)



Tilt −6° at FL350: ground clutter over the islands hides the weather.



Tilt +6°: the beam passes over the storms; the screen looks clear.

KEY MESSAGE

A clear radar picture does not mean clear weather. With the tilt too high the beam overshoots the cells. Always cross-check with a lower tilt or MULTISCAN AUTO.

C · Plan a deviation

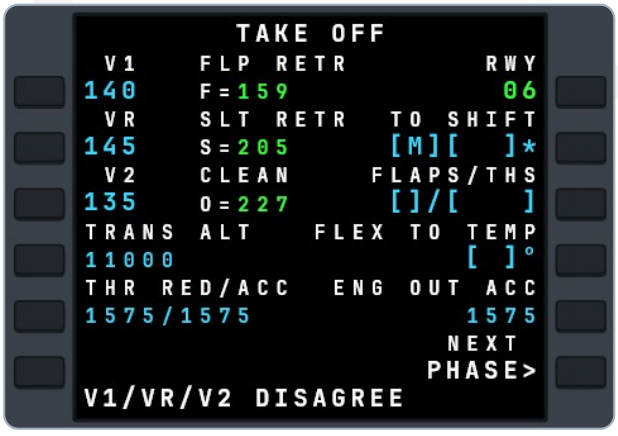
1. Before passing BATIS, at 160 NM in WX+T, identify the cells ahead. The planned route goes **through the red core** of the severe cell on the BATIS–DAGAT leg; the line of storms lies around LAWIN.
2. Ask each student to propose a deviation with the waypoints in the database and enter it with LAT REV.
3. One possible answer, checked against the trainer's weather: **BATIS → BAGYO → TUBIG → TALAB**, west of both areas (only light rain on the way).
   LAT REV at BATIS, NEXT WPT `BAGYO`, INSERT* · LAT REV at BAGYO, NEXT WPT `TUBIG`, INSERT* · LAT REV at TUBIG, NEXT WPT `TALAB`, INSERT* (DAGAT, LAWIN and the discontinuity are removed because TALAB is already in the plan).
   Result: RPLL ALPAS BATIS BAGYO TUBIG TALAB RPVM, 338 NM instead of 307 NM.
4. Accept any route that stays well clear of the red cells, and discuss the extra distance and fuel. Then fly it and check that the cells pass on the expected side.

CHAPTER 12 · LESSON 7

MCDU Messages Drill

Duration: 15 minutes. Students deliberately make each error, read the message, press CLR and correct the entry.

Entry	Where	Expected message
RPLLRPVM	INIT 1R	FORMAT ERROR
RPLL/XXXX	INIT 1R	NOT IN DATABASE
1000	INIT 5L (cost index)	ENTRY OUT OF RANGE
410	INIT 6L (CRZ FL)	ENTRY OUT OF RANGE
20.0	INIT B 2R (block)	ENTRY OUT OF RANGE
V2 135 after V1 140, VR 145	PERF 3L	V1/VR/V2 DISAGREE
CLR on the origin line	F-PLN 1L	NOT ALLOWED
/5000 on the origin	F-PLN 1R	NOT ALLOWED
ZZZZZ	F-PLN left key	NOT IN DATABASE
118.00	RAD NAV 1L (VOR)	ENTRY OUT OF RANGE
LN (an NDB)	RAD NAV 1L (VOR)	NOT IN DATABASE
DIR key with a LAT REV TMPY open	DIR	TMPY F-PLN EXISTS
BLOCK 3.0, then fly	INIT B 2R	DEST EFOB BELOW MIN (amber, on the approach)
DIR TO FF22 at FL350, 40 NM out	DIR	TOO STEEP PATH (amber)



V1/VR/V2 DISAGREE in the scratchpad.

CHAPTER 13 · LESSON 8

System Faults

Duration: 30 minutes. The instructor injects a failure with the **FAULTS** buttons in the TRAINER box (amber when active); the student names the failure, its effect and the action. Press a fault again to remove it; RESET removes all.

Fault	What the student sees	Expected response
FM1	FM1 annunciator amber; *OPP FMGC IN PROCESS* (white); ND *SET OFFSIDE RNG/MODE* (amber)	Onside FMGC failed: single mode, this MCDU runs on FMGC 2. Set the same ND range and mode on both sides. When the fault clears: *PLEASE WAIT* during resynchronisation (about 25 s); do not use the MCDU.
FM2	FM2 annunciator amber	Offside FMGC failed; this side keeps working. Same reset behaviour.
IND	IND annunciator amber; *INDEPENDENT OPERATION* (amber)	Both FMGCs healthy but independent: entries on one MCDU are not copied to the other.
MCDU	FAIL annunciator amber, display blank, keys dead	MCDU failure: use the other MCDU (not simulated here).
GPS	*GPS PRIMARY LOST* (amber) on the MCDU and the ND; PROG without GPS PRIMARY, estimated 0.60 NM	Navigation on IRS / radio. CLR clears the message on both. On the approach (required 0.30 NM): *NAV ACCUR DOWNGRAD* and ACCUR LOW (amber). When GPS returns: *GPS PRIMARY* or *NAV ACCUR UPGRAD*.
WXR 1 / WXR 2	No radar returns, amber *WXR 1 FAULT* on the ND	Select the other radar system (SYS 2 or 1).
VOR 1	ROSE VOR: VOR1 in red, no deviation	VOR 1 receiver lost: do not use VOR 1 guidance.
ILS	ROSE ILS: red LOC and G/S flags, no deviation	ILS receiver lost: no ILS approach on this side.
IRS DRIFT	DATA → POSITION MONITOR: IRS1-3 5.6 / 5.2 / 6.0 NM from the FMGC position	On the ground: fast alignment (each ADIRS OFF then NAV within 5 s). The fault clears when all three are realigned (Lesson 12A).

FM1 + GPS + WXR 1 faults.

MCDU FAIL and VOR 1 fault (ROSE VOR).

ILS fault: red LOC and G/S flags (ROSE ILS).

LIMITS

One FMGC fault at a time (no dual FMGC failure). The radar fault wording is a trainer indication. Teach the exact procedures from the operator's documentation.

CHAPTER 14 · LESSON 9

CFDS & CIDS BITE

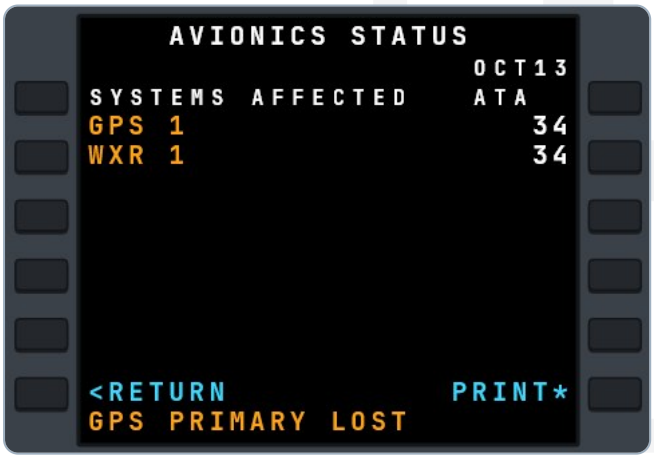
Duration: 35 minutes. Students open the maintenance menu (CFDS) from MCDU MENU, read the fault reports after a flight with trainer faults, then run the cabin system (CIDS) pages and tests on the ground, the same path a technician follows on the real aircraft.

Objectives

- Reach CFDS from MCDU MENU and explain the reports: LAST (CURRENT) LEG REPORT, PREVIOUS LEGS REPORT, AVIONICS STATUS.
- Find a system through SYSTEM REPORT / TEST, change page with the slew keys and go back with RETURN.
- Use the CIDS pages: reports, LRU IDENTIFICATION, GROUND SCANNING, SYSTEM CONFIG, OP TESTS and SYSTEM TESTS.

A · Fault reports

1. Fly the Lesson 2 plan (FLY, ×16). Switch on the **GPS** and **WXR 1** faults.
2. MCDU MENU → **<CFDS** (4L) → **<AVIONICS STATUS** (4L): GPS 1 and WXR 1 in amber with their ATA chapter (34).
3. RETURN → **<CURRENT LEG REPORT** (1L): each fault with its UTC time.
4. **RESET** (end of the leg). CFDS now shows **LAST LEG REPORT** with the same faults; after the next flight they move to **PREVIOUS LEGS REPORT**.



AVIONICS STATUS in flight: systems failed now.



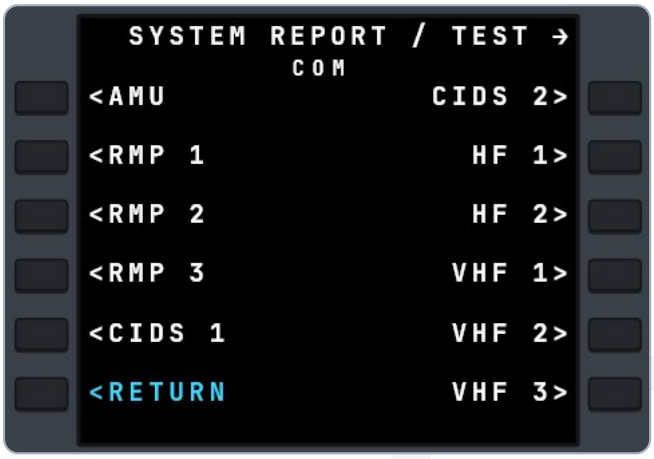
LAST LEG REPORT after RESET.

B · CIDS pages and tests (on the ground)

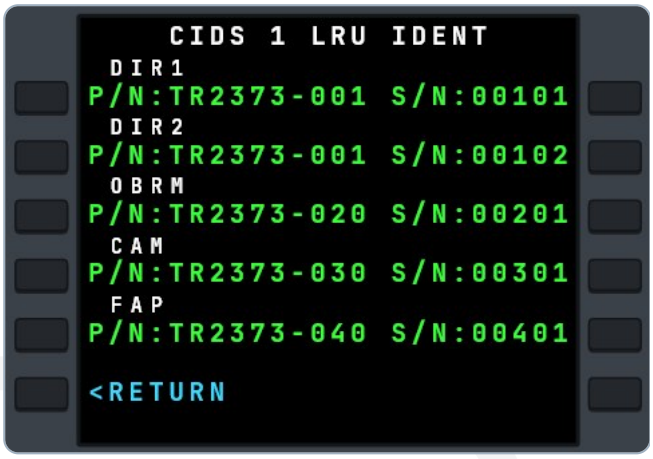
1. CFDS → **<SYSTEM REPORT / TEST** (5L). Page 1 lists AIRCOND to NAV; → shows PNEU, APU, ENG. Then **<COM** (3L) → **<CIDS 1** (5L).
2. **<LAST LEG REPORT** (1L): *NO FAULT DETECTED*. **<LRU IDENTIFICATION** (3L): part and serial numbers of DIR1, DIR2, OBRM, CAM, FAP. **<GROUND SCANNING** (4L): *IN PROGRESS 180s*, then

NO FAULT DETECTED.

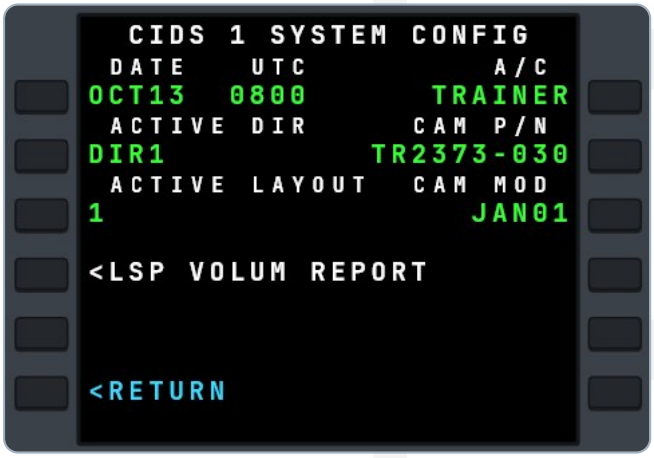
3. → CIDS page 2: **SYSTEM CONFIG>** (6R) and its **<LSP VOLUM REPORT**; **OP TESTS>** (4R): LOUDSPEAKER / LAMPS ACTIVATION, then *SYSTEM RESET AFTER TEST*.
4. **SYSTEM TESTS>** (2R) → **<ILLUMINATION TEST** (3L): *TEST IN PROGRESS*, *TEST OK* after about 30 s. While a test runs you can open other pages; select the test again to see its result.
5. **<POWER-UP TEST** (2L): *TEST IN PROGRESS (6MIN)* on CIDS 1; on CIDS 2 *DIR TEST ONLY*, about 30 s. EPSU SYS, EPSU BAT CAP and DRAIN MAST tests end with *TEST OK*.



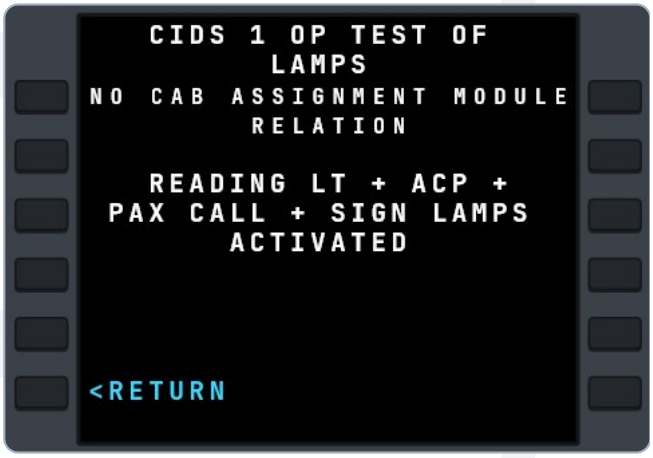
SYSTEM REPORT / TEST → COM.



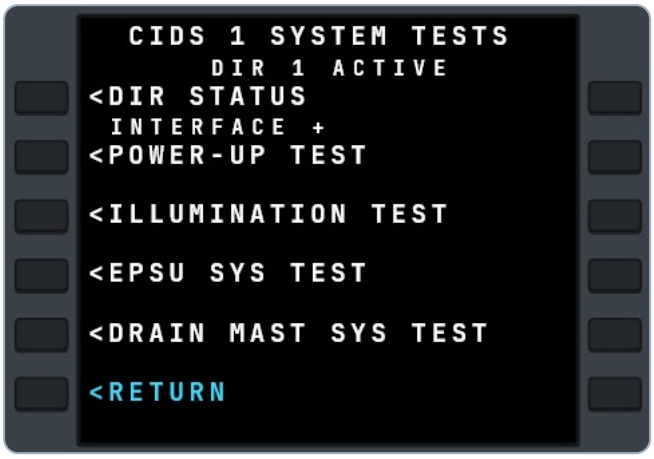
CIDS 1 LRU IDENTIFICATION.



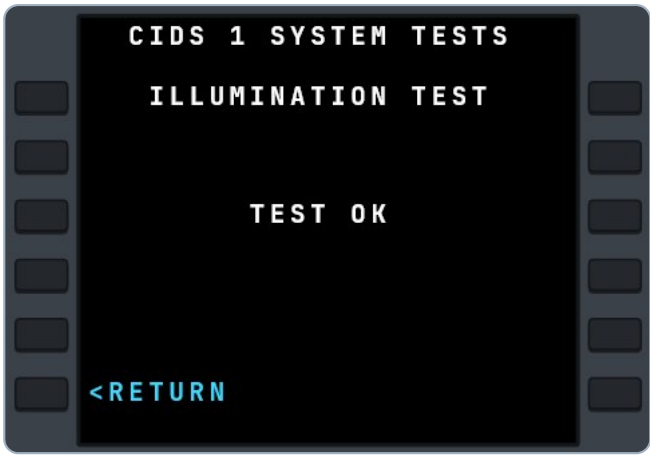
CIDS 1 SYSTEM CONFIG.



OP TEST OF LAMPS.



CIDS 1 SYSTEM TESTS.



ILLUMINATION TEST finished: TEST OK.

Questions for the students

- Which CFDS page shows the systems failed *now*? (AVIONICS STATUS.) Which one the faults of the flight? (CURRENT / LAST LEG REPORT.)
- Why is SYSTEM REPORT / TEST refused in flight? (Interactive mode is ground only: *NOT ALLOWED*.)
- Where is SYSTEM TESTS? (CIDS page 2, slew key.)

> **LIMITS**
> The trainer has no cabin: tests do not light anything and every CIDS report says NO FAULT DETECTED. Part numbers are fictional. The ILLUMINATION, EPSU and DRAIN MAST result pages and durations are trainer values; the CFDS reports show the ATA chapter only. Follow the operator's AMM / TSM for the real procedures.

CHAPTER 15 · LESSON 10

Cold & Dark to Shutdown

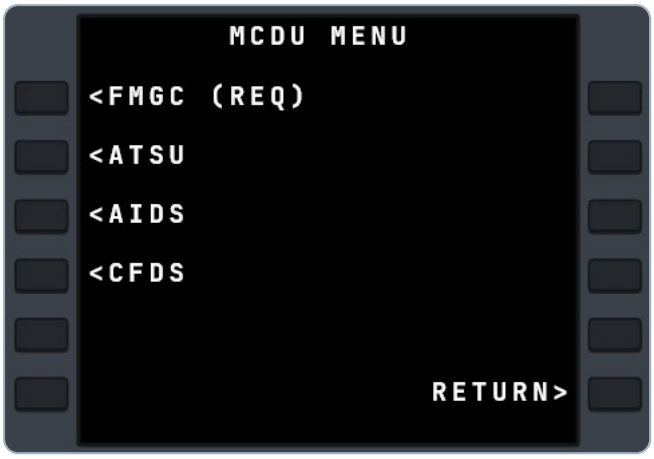
Duration: 40 minutes. The aircraft starts cold and dark (TRAINER box: **COLD & DARK**). Students bring it to life with the overhead panel, align the IRS, start the APU and the engines, fly the Lesson 2 plan, and shut everything down at the gate. Use **×16** to make the alignment, the APU and the engine start quicker.



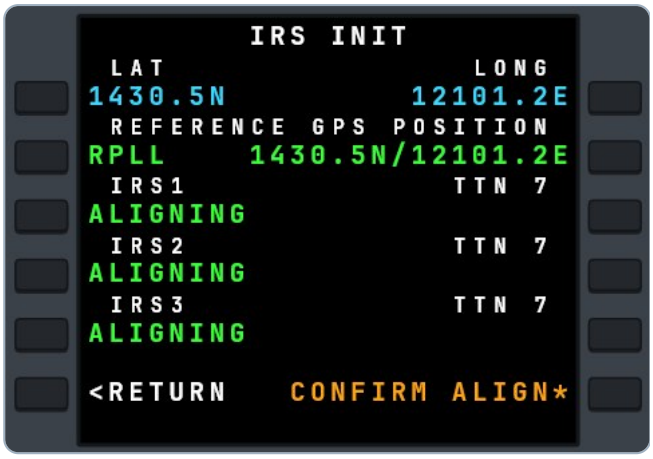
Overhead panel (ELEC, APU, ADIRS) and ENGINE panel, on the right of the DUAL view. ALIGN lights on, ND: HDG and MAP NOT AVAIL.

A · Power-up

1. **BAT 1** and **BAT 2**: the OFF lights go out. Batteries alone do not power the MCDU.
2. **EXT PWR** shows AVAIL (ground power connected): press it, ON. The MCDU runs its self-test, then MCDU MENU shows **<FMGC (REQ)**; select it: A/C STATUS.
3. ADIRS **1, 2, 3** to **NAV**: ON BATT for a few seconds, the ALIGN lights come on.
4. APU **MASTER SW**, then **START**: AVAIL after about 45 s (×1). **APU BLEED** on.



After power-up: FMGC (REQ).



IRS INIT: ALIGNING, CONFIRM ALIGN∗.

B · IRS INIT

1. Enter FROM/TO on INIT A first (the reference airport). **ALIGN IRS>** (amber) at 3R opens IRS INIT.
2. Press **ALIGN ON REF∗**, then **CONFIRM ALIGN∗** (6R). Without it the countdown stops at 1 minute and the ALIGN lights flash.
3. About 7 minutes (×1) later: *ALIGNED ON REF*, the ALIGN lights go out and the ND shows the map.

C · Engine start and shutdown

1. APU AVAIL and APU BLEED on. ENG **MODE** to **IGN START**, then **MASTER 2** and **MASTER 1** ON: N2 rises to idle (about 45 s each at ×1). MODE back to NORM, APU BLEED off.
2. The TRAINER box message disappears: FLY is available. Ground power is removed at take-off.
3. After landing (LANDED): EXT PWR shows AVAIL again. Shutdown: EXT PWR ON, ENG MASTER 1 and 2 OFF, APU MASTER SW off, ADIRS OFF, EXT PWR off, BAT 1 and 2 off: cold and dark.

> **LIMITS**
> Simplified systems: no hydraulics, bleed, fuel or pressurization pages; the engines start automatically with the APU bleed. Times are trainer values close to the FCOM ranges. Use the operator's checklists and FCOM procedures.

CHAPTER 16 · LESSON 11

Procedures & Advanced F-PLN

Duration: 45 minutes. Start from the Lesson 2 plan (RPLL/RPVM, company route). All SIDs, STARs, approaches and airways in the trainer are **fictional**; only the runway designators and lengths are real.

A · Departure and arrival

1. F-PLN, origin line (1L) → **<DEPARTURE**. AVAILABLE RUNWAYS: choose **06**. SIDs of runway 06: choose **ALPA1A**. The temporary plan is yellow: **INSERT***.
2. F-PLN, destination line (6L) → **ARRIVAL>**. Choose **ILS22**, then the STAR **TALA2B**, INSERT. Slew ← / → switches between the two lists.
3. Check the F-PLN: *RPLL06*, the SID points with magenta constraints, the arrival and approach, *RPVM22*, and the missed approach in blue after the destination.



DEPARTURES FROM RPLL: available runways.



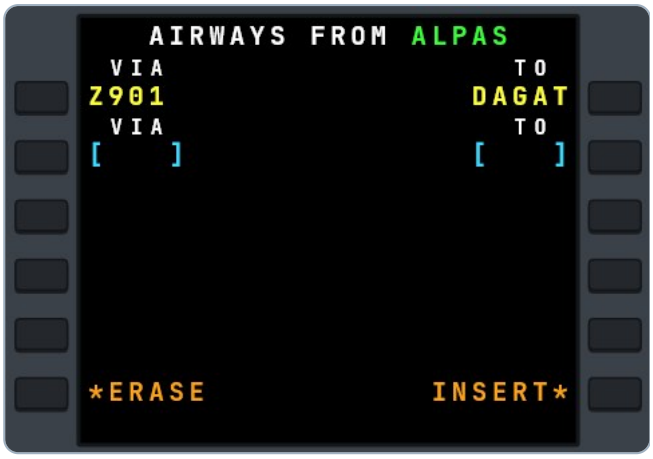
ARRIVAL TO RPVM: ILS22 and the STARs.

B · Lateral revisions on a waypoint

LAT REV prompt	Entry	Result
<OFFSET (1L)	L5 / R10 (1-50 NM)	The aircraft flies parallel to the route (OFST on the F-PLN title).
FIX INFO> (1R)	REF FIX, RADIUS, RADIAL	Dashed green circle and radial on the ND.
LL XING (2R)	13/1/2	Points N13, N12 where the route crosses those latitudes.
<HOLD (3L)	INB CRS, TURN L/R, TIME	The aircraft flies the racetrack until IMM EXIT* on the HOLD page.
AIRWAYS> (5R)	VIA Z901, TO DAGAT	The airway points are inserted (TMPY, INSERT).



HOLD AT ALPAS.



AIRWAYS: VIA Z901 TO DAGAT.

C · More pages

- **Pilot waypoints:** type `LLV/090/10` (place/bearing/distance) or `1400.0N/12130.0E` on an F-PLN line: PBD01 / LL01, listed in DATA → STORED WAYPOINTS.
- **WIND:** INIT A 5R → CLIMB WIND (`270/30/FL100`, WIND REQUEST∗), NEXT PHASE → CRUISE, DESCENT. The simulated flight uses these winds.
- **STEP ALTS:** VERT REV → STEP ALTS>, `FL370`: step climb at the waypoint.
- **SEC F-PLN:** COPY ACTIVE, SEC F-PLN (view), ACTIVATE SEC∗, DELETE SEC.
- **INIT REQUEST∗** loads the company route, cost index, CRZ FL and winds (trainer uplink).
- PERF TAKE OFF **TO SHIFT**, PERF **PRESEL**; PROG **REPORT**, **POSITION UPDATE AT**, **PREDICTIVE GPS**; DATA **IRS MONITOR**, **GPS MONITOR**.

> **LIMITS**
> SEC F-PLN is view only; the missed approach is flown after TOGA (Lesson 12); predictions ignore winds and step climbs. Real procedures must come from the operator's charts.

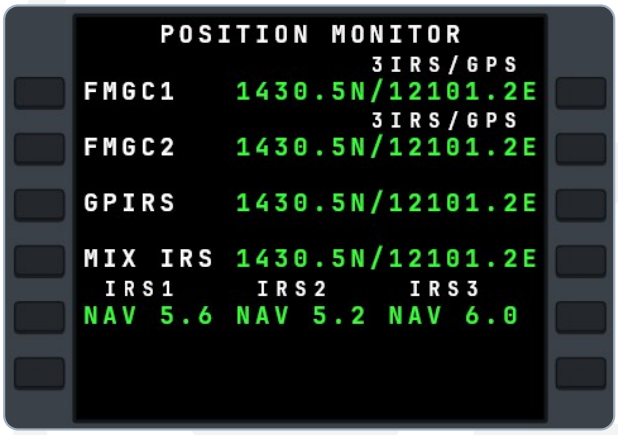
CHAPTER 17 · LESSON 12

Approach, Go-around & Diversion

Duration: 45 minutes. Start from the Lesson 11 plan with the arrival (RPLL/RPVM, ALTN RPMD, STAR TALA2B, ILS22). The lesson follows the MCDU items of the airline normal procedures: cockpit preparation checks, descent preparation, the approach phase, the go-around and the diversion.

A · Cockpit preparation: IRS position check

1. DATA → **<POSITION MONITOR**. Under IRS1, IRS2, IRS3 the MCDU shows each IR mode and its distance from the FMGC position (NM).
2. Instructor: TRAINER FAULTS **IRS DRIFT**. The distances become 5.6 / 5.2 / 6.0 NM.
3. Rule: at **5 NM or more** (and a complete alignment not required), do a **fast alignment**: each ADIRS selector OFF, then back to NAV **within 5 seconds**. ALIGN for about 30 s (trainer value), then NAV 0.0. When all three are realigned the fault clears by itself.
4. More than 5 s in OFF starts a complete alignment (IRS INIT, Lesson 10).



POSITION MONITOR with the IRS DRIFT fault: every IRS more than 5 NM from the FMGC position.

B · Descent preparation

- **PERF CRZ**: *DES CABIN RATE* (4R), default `-350FT/MN`; enter `500` or `-500` (100–1000).
- **PERF APPR**: QNH, TEMP, MAG WIND, TRANS FL, BARO or RADIO minimum, LDG CONF; FINAL shows the approach (ILS22) and O / S / F the characteristic speeds. **NEXT PHASE>** opens PERF GO AROUND.
- **PERF GO AROUND**: THR RED/ACC for the go-around (default destination elevation + 1500 ft), ENG OUT ACC. It can be changed before the go-around, not during it.
- F-PLN: the **(DECEL)** pseudo waypoint shows where the approach phase will start.



PERF APPR: FINAL ILS22, O / S / F, BARO, RADIO, LDG CONF.



F-PLN: (DECEL) before the final approach fix.

C · The approach phase

1. In managed NAV the approach phase starts automatically at **(DECEL)** (trainer: 15 NM before the destination). The PERF title APPR turns green.
2. Not in NAV (for example after a discontinuity, Lesson 5C), it does not start by itself. Activate it by hand: on the PERF page of the active phase (CLB, CRZ or DES), 6L **ACTIVATE <APPR PHASE** (blue), then **CONFIRM *APPR PHASE** (amber). The normal procedures say: about 15 NM from touchdown.
3. Another page key cancels the CONFIRM prompt.
4. Activated early (in cruise), the aircraft stays level and descends when it reaches the descent path.



PERF CRZ after the first press: CONFIRM *APPR PHASE.

D · Go-around

1. Fly to short final at ×16, then ×1. Instructor or student: TRAINER **TOGA** (thrust levers to TOGA; only in the approach phase with an approach in the F-PLN).
2. The phase is **GO AROUND** (PERF and PROG titles). F-PLN: FROM T-P, TO the missed approach point **VM22M**, then the approach strung again (VM22I, FF22, RW22, RPVM22).
3. The aircraft climbs to the missed approach altitude (destination + 3000 ft) and stays level.

4. **Second approach:** PERF GO AROUND, 6L **ACTIVATE APPR PHASE** → CONFIRM. The aircraft flies the approach again and lands.



F-PLN after TOGA: missed approach, then the approach again.



PERF GO AROUND (green: active phase), ACTIVATE APPR PHASE.

E · Diversion: ENABLE ALTN

1. After the go-around, F-PLN, LAT REV on a point → 4L **<ENABLE ALTN** (in flight, with an alternate on INIT A).
2. The alternate (RPMD) becomes the destination, direct from the present position; the phase is CLIMB and the CRZ FL is the alternate level (trainer FL200).
3. The aircraft climbs, cruises, descends and lands at RPMD (approach phase at its DECEL).



Go-around: TRAINER box GO AROUND with the TOGA key and the reminder; ND to VM22M.

F · TOO STEEP PATH

When the remaining distance is too short for the descent (more than twice the normal 3 NM per 1000 ft, trainer value), the scratchpad shows *TOO STEEP PATH* (amber) once. Example: in cruise at FL350, DIR TO FF22 about 40 NM out. The normal procedures say: if TOO STEEP PATH appears after the final descent point, do not use FINAL APP guidance.

> **LIMITS**
>
> DECEL position, the 30 s fast alignment, the TOO STEEP PATH limit, the alternate FL200 and the drift rates are trainer values. There are no AP/FD modes, no flaps, gear or speeds flown: the TRAINER TOGA key only starts the FMS go-around phase. Use the operator's SOP and FCOM.

CHAPTER 18

Assessment Checklist

Student		**Date**	
Device / code		**Instructor**	

#	Task (student does it without help)	Pass	Retry
1	Explains the colour code and the purpose of the scratchpad and CLR.	☐	☐
2	Enters FROM/TO and inserts the company route.	☐	☐
3	Completes INIT A: ALTN, FLT NBR, COST INDEX, CRZ FL.	☐	☐
4	Completes INIT B and reads TOW, LW and EXTRA correctly.	☐	☐
5	Checks the F-PLN: legs, (T/C), (T/D), destination time, distance and EFOB.	☐	☐
6	Enters V1/VR/V2, FLAPS/THS and FLEX on PERF TAKE OFF.	☐	☐
7	Adds a speed/altitude constraint and explains the colour.	☐	☐
8	Inserts a waypoint and clears the resulting discontinuity.	☐	☐
9	Uses LAT REV NEXT WPT and decides INSERT or ERASE.	☐	☐
10	Tunes a VOR and the ILS on RAD NAV.	☐	☐
11	Selects ND modes and ranges for a given task.	☐	☐
12	Explains sequencing (FROM / TO) during the flight.	☐	☐
13	Performs a DIR TO and inserts it.	☐	☐
14	Recovers from a discontinuity reached in flight.	☐	☐
15	Sets the weather radar (SYS, WX+T) and explains the colours and the 40 NM turbulence limit.	☐	☐
16	Explains overshoot (tilt too high) and ground clutter (tilt too low).	☐	☐
17	Plans and enters a deviation around a red cell.	☐	☐
18	Reads and corrects at least five MCDU messages.	☐	☐
19	Recognises an FMGC, GPS, radar or receiver fault and states the effect.	☐	☐
20	Reads AVIONICS STATUS and the LAST LEG REPORT, opens CIDS 1 under COM and runs a CIDS system test.	☐	☐
21	Powers the aircraft from cold and dark, aligns the IRS (IRS INIT) and starts the APU and the engines.	☐	☐
22	Selects a departure (runway, SID) and an arrival (approach, STAR) and checks the F-PLN.	☐	☐
23	Uses one advanced revision (HOLD, OFFSET, AIRWAYS or FIX INFO) and shuts the aircraft down.	☐	☐
24	Checks the IRS on POSITION MONITOR and performs a fast alignment when an IRS is 5 NM or more away.	☐	☐
25	Prepares the descent (PERF APPR, PERF GO AROUND, DES CABIN RATE) and activates the approach phase by hand.	☐	☐
26	Flies a go-around, then a second approach or a diversion with ENABLE ALTN.	☐	☐

Result: ☐ Competent ☐ Needs more practice **Instructor signature:** _____

CHAPTER 19

Troubleshooting & FAQ

Problem	Solution
"Invalid license code"	Check capital and small letters. MCDU codes start with MCDU-; FAP codes do not work here.
"Already used on another device"	The code is active elsewhere. Deactivate & Transfer on the old device, or Release it on the admin page if that device is lost.
"No internet connection"	Activation and transfer need internet once. Daily use does not.
"Too many attempts"	Wait 15 minutes after five wrong codes.
Windows: "Windows protected your PC"	More info → Run anyway. The app is not code-signed.
FLY is not available	The TRAINER box says why: enter FROM/TO and CRZ FL, and insert or erase any temporary flight plan.
The aircraft flies straight and ignores the plan	The TO point is a discontinuity (Lesson 5C). Clear it or use DIR TO.
The aircraft does not land after a go-around	It stays in the GO AROUND phase at the missed approach altitude. Activate the approach phase on PERF GO AROUND (6L, twice) or divert with LAT REV ENABLE ALTN.
TOGA is grey	Only in the approach phase, with an approach in the F-PLN (ARRIVAL) and the flight running.
NOT SIMULATED	The function exists in the A320 but is not part of this trainer.
Demo asks for a license code	The demo includes INIT, F-PLN and the ND only.
No weather on the ND	SYS must be 1 or 2; PLAN mode never shows weather; check the tilt in MAN.
Keys too small on a phone	Use the MCDU view: the keyboard moves beside the display.



Demo version: the top bar shows DEMO · ENTER CODE.

CHAPTER 20

Limitations & Important Notice

Not included in version 2.1

- Real SIDs, STARs, approaches and airways (the trainer uses fictional ones).
- ATC COMM / datalink, ATSU, AIDS, second MCDU, dual FMGC failure.
- SEC F-PLN editing, winds and step climbs in the predictions; AP/FD modes, flaps, gear and speeds.
- Aircraft systems other than power, APU, engine start and ADIRS; hazard (HZD) radar mode and predictive windshear alerts.
- CFDS: ECAM report content, CFDS page 2, printing, and the BITE pages of systems other than CIDS 1 / CIDS 2; no cabin effects of the CIDS tests.

A full list of what matches the aircraft, what is simplified and what is trainer-only is in the **Sources & Conformance** document supplied with the trainer.

Important notice & disclaimer

This software (A320 MCDU Trainer) is developed by Overdrive Interactive for academic, familiarization, and educational training purposes only.

1. **NOT AN OFFICIALLY CERTIFIED FTD:** This application is a classroom supplement and is NOT certified by Airbus, FAA, EASA, CAAP, or any civil aviation authority for official type-rating or flight training credits.
2. **NO AFFILIATION:** "A320" and related aircraft trademarks belong to Airbus. Overdrive Interactive is an independent entity with no official endorsement or affiliation with Airbus.
3. **TRAINING DATA ONLY:** All waypoints, navaids, frequencies, weather and performance figures are simplified or fictional training data. Airport positions are approximate. Never use them for flight planning or navigation.
4. **ACCURACY & LIABILITY:** While modeled for realistic interaction, operational variances may exist. This software must NOT be used for real-world aircraft operation or flight preparation. Overdrive Interactive assumes no liability for misuse.

Always follow the aircraft manufacturer's and the operator's documentation and your approved training programme.

> **LINKS**
> Download & tutorial video: `opulencecircle82.github.io/OI/mcdu` · Admin: `opulencecircle82.github.io/OI/admin` · Tutorial: `youtube.com/watch?v=n6q5uzvrrME`