Miltech Simulations U-2

Cruise

The cruise climb on the autopilot, keeping the wings balanced, and the long watch.

Note
Sim values. Performance values are measured in the sim. They may not accurately represent (nor do they intend to accurately represent) the performance of the real aircraft.

CRUISE CLIMB

From about 60,000-65,000 ft until level-off.

AUTOPILOT

1 CRUISE CLIMB - BEGIN AT 60,000-65,000 FT

2 THROTTLE - VERNIER TO EGT 650-725 C At full throttle the engine control holds the EGT at 840 C in PRI, nothing holds it in SEC; the AFCS never moves the throttle.

3 ENGINE AND FLIGHT INSTRUMENTS - MONITOR SYS/PERF; EGT HIGH from 842 C

4 OXYGEN - MONITOR

5 AFCS - ENGAGE AFCS POWER on, PITCH / ROLL / YAW on, AFCS ENGAGE; AP box on the PFD → AFCS System (Autopilot)

6 MACH HOLD - .715 AFCS MACH button at .715; PITCH MACH wheel 0.001 per click

7 MACH/ALT KNOB - 5, LOWER IF IT OSCILLATES Right side wall; 5 is the norm, above it the autopilot is sharper, below it softer; 7-10 invites a slow oscillation, towards 3 in turbulence

8 PITCH RATE KNOB - 5, HIGHER IF IT OSCILLATES Towards 7; 1-3 invites a slow oscillation

9 AOA TONES - MONITOR Any tone means AOA .70 or more, gear up or down; stall tone above .98. High up the gauge reads low, but the tones still come before the stall: any tone up there is a stall warning. → Angle of Attack (AOA)

10 FLIGHT PATH - MONITOR PFD Mach, altitude trend and AP box

PITCH AND AILERON TRIM

11 PITCH TRIM MODE - AUTO The AFCS trims; the yoke trim switch is out while the pitch axis is engaged (MANUAL gives AUTOPILOT MAN TRIM)

12 YOKE - HANDS OFF WITH THE AUTOPILOT ENGAGED Disconnect first (yoke AP disconnect) to fly by hand

13 STABILIZER TRIM - MONITOR PFD trim readout and PITCH sync bar beside the SFD. The autopilot may run the trim past the stops; after a disconnect it runs back at 1 deg per 3 s

Note
Note: Trim running on its own: MANUAL TRIM POWER (yoke) OFF stops the stabilizer, autopilot trim included.

14 AILERON TRIM - SMALL INPUTS ONLY ABOVE 150 KIAS Switch on the throttle quadrant; needs MANUAL TRIM POWER

15 AILERON TRIM - NOT IN CRUISE Correct a heavy wing with fuel (CRUISE TRIM AND BALANCE)

CRUISE TRIM AND BALANCE

In cruise with the autopilot engaged, whenever a wing is heavy or the aircraft slips.

LATERAL FUEL BALANCE

1 FUEL BALANCE - CHECK No per-tank gauge in the cockpit - the ROLL sync bar (beside the SFD) and the yoke show the aileron the autopilot is holding; per-tank fuel in the MSFS fuel menu

2 SIDESLIP - CENTRED FIRST PFD sideslip trapezoid under the bank pointer

3 CROSS-TRANSFER - AS REQUIRED INBD XFER / OUTBD XFER (fuel panel) towards the light wing, 7 gal/min; OFF when balanced → Fuel System

4 ROLL SYNC BAR - MONITOR Back to centre as the wings balance

Note
Note: FUEL XFER ON shows while a transfer runs and FUEL XFER 2 MINUTES reminds you every 2 minutes. XFER PRESS LOW = source tank empty: switch off. Cross-transfer does not run while the SUMP TANK switch of the same pair is ON.

Note
Note: A fuel load is evened out across each wing pair once it has settled, and the engine feed draws both sides equally in balanced flight. In a sideslip the wing on the ball's side feeds less and slowly gets heavy, so centre the sideslip before you transfer; otherwise an imbalance comes from dumping or cross-transfer.

DIRECTIONAL TRIM

5 SIDESLIP - CHECK PFD sideslip trapezoid (the sim's yaw string)

6 YAW BAL KNOB - CENTRE THE SIDESLIP Right side wall, 5 = neutral, up to 2 deg rudder trim; works only with the AFCS engaged and YAW on

Note
Note: There is no rudder tab and no other rudder trim: with the autopilot off the rudder trim is held at zero.

LATERAL MISTRIM

7 AFCS ROLL - OFF IF THE AIRCRAFT BANKS UNCOMMANDED Pitch hold stays; AUTOPILOT lamp on

8 LATERAL TRIM - CHECK Aileron needed to hold the wings level

9 FUEL - BALANCE, THEN AFCS ROLL ON Cross-transfer as above; OFF and ON again also resets a tripped axis (a trip leaves the switch ON)

CRUISE MONITORING

Throughout the cruise.

CONSUMPTION

1 FUEL - CHECK SYS/PERF TOTAL, FF, FOB (h:mm), RNG - read them in stable cruise → System Pages (SYS)

2 OXYGEN - CHECK SYS/PERF LOX 1 / LOX 2, roughly 0.5 L an hour in all; HIGH OXY CONSUM RATE above 2 L an hour

3 CONSUMPTION TREND - CHECK SYS/CNSUM Fuel, LOX and oil plotted against time beside the PLAN curve (load R3-R12, CLN / POD / PEG) - no hand plot needed

4 CABIN ALTITUDE - CHECK SYS/PERF; CABIN ALTITUDE HIGH if above schedule

CREW COMFORT

5 FACE HEAT - AS REQUIRED Knob OFF / HIGH only; it runs the sim windshield de-ice (no faceplate in the sim)

6 CABIN TEMPERATURE - 65-70 F CABIN HEAT AUTO CONTROL knob; SYS/PERF TEMPERATURE CABIN

EW (AS REQUIRED)

7 EW CONT - REC OR RPT Beside the SFD; startup BIT 30 s after OFF (5 min with EFB Avionics startup time Realistic)

8 THREAT LAMPS AND EW PAGE - MONITOR REC green = threat tracked, RPT red flashing = jamming; MFD FLT > EW

9 THREAT KNOB - SET New-threat tone volume, times MASTER VOL (audio volume panel); the tone needs MSN RCD ON

Note
Note: Threats are sim traffic within 5 NM and 1,000 ft of you, moving faster than 20 kt.

LEVEL-OFF CRUISE (AS REQUIRED)

10 ALTITUDE - LEVEL OFF, AFCS ALT ALT holds the altitude at the press and replaces MACH; PITCH MACH wheel 100 ft per click

11 THROTTLE - REDUCE FOR CRUISE SPEED The AFCS only pitches; if speed decays ALT gives up height

12 CRUISE ALTITUDE - AS PLANNED (ABOUT 45,000 FT)

Note
Note: Between 43,000 and 49,500 ft the IAS red line is 181 KIAS whatever the gust control; Mach red line .75.

Related pages: High Altitude and the Cruise Climb · AFCS System (Autopilot) · Fuel System · Descent and Approach

Miltech Simulations U-2. SIMULATION USE ONLY. This documentation describes the simulated aircraft as delivered in the add-on and must not be used for real-world aviation.