Checklist MS FSX incl. Wilco B737 PIC

IVAO:
Member-#: _____
Website-PW: _____
Network-PW: _____

Attention:
You need a saved Flight with the aircraft parked at parking position and parking break set!
If you don't have such a flight you won't be able to load the aircraft in Dark & Cold mode. So create such a flight, set the parking break and save it.
For every new flight, set D&C in the configurator, load the flight and then change the location the desired airport.

Parking Position:

- Dark & Cold (at Configurator) — Set
- Load & Fuel (at Configurator) — Set
- FSX — start & load 737 flight (with Parking Break set!)
- Load & Fuel (at FSX) — Check (or reset)
- Parkingbreak — Set
- IVAP-Connection — Activate
- FSX-Flightplan — Create
- Dep-Metar — Check & note
- Arr-Metar — Check & note
- Door 1 — Open (Shift + E)
- Gangway — Enable (if available) (Strg + J)
- Battery (OHP) — On
- DC-Voltemeter-Selector — Bat
- DC-Voltemeter — 24V
- AC-Voltemeter-Selector — Standby Power
- Hyd. Pumps — Off
- Cockpit-Light (Pedestal) — On (if needed)
- Galley-Power (OHP) — On
- Emergency-Lights (OHP) — Armed
- Position-Light (OHP) — Standby & Strobe

  --- wait till Groud Power available---

  ---when no Ground Power available bring forward APU-start---
- Ground Power (OHP) — On
- Seat-Belt (OHP) — Auto / On
- No Smoking (OHP) — Auto / On
- Fuel Pump Aft No.1 — On → Low Pressure Light off
- APU — Start

  ---wait till APU Gens available---
- APU Gen Switches — On
- APU Bleed Switch — On
- Engine Bleed Switches — On
- AC-Voltemeter-Selector — APU
- Recirculation Fan — Auto
- Pack Left (AC) (OHP) — On

- Pack Right (AC) (OHP) — On
- Autopilots — Off / Disengaged
- Com1-Frequenz — Set (active ATC or 122.800 UniCom)
- Speed Brake — Down / Detent (Off)
- FMC
  - Initiate ➔ INIT REF button
  - Index page ➔ 6L
  - Ident page ➔ 1L
  - Pos Init page ➔ 6R
  - Enter Airport Dep Code (example EDDT) ➔ 2L
  - IRS-Display Window (open)
    - IRS DSPL Selector ➔ Test
    - IRS L & R ➔ Off
    - IRS L & R ➔ NAV
  - Copy Coordinates ➔ 2R
  - Paste Coordinates for IRS Alignment ➔ 4R
    - IRS DSPL Selector ➔ HDG/STS
  - Route page ➔ 6R
  - Enter Airport Departure Code ➔ 1L
  - Enter Airport Arrival Code ➔ 1R
  - Request Route (import of FSX-flightplan) ➔ 5R
  - Enter Rwy (example 07R, 26L, etc.) ➔ 3L
  - Activate ➔ 6R
    ---Exec-light on---
  - Execute ➔ EXEC button
  - Perf Init page ➔ 6R
  - Enter ZFW (Zero Fuel Weight / 72.000 LBS + Payload) ➔ 3L
  - Enter Fuel Reserve (in 1000LBS ➔ 5 = 5000LBS) ➔ 4L
  - Enter Cost Index (50 eco cruise, 100 for normal speed) ➔ 5L
  - Enter FL ➔ 1R
  - Enter Trans Alt in ft. ➔ 5R
  - Execute ➔ EXEC button
  - N1-Limit page ➔ 6R
  - Derate T/O if needed (increased t/o-distance, decreased fuel-burn)
  - Takeoff Reference page ➔ 6R
  - Enter Flap Setting (1, 5, 15) ➔ 1L
  - Enter V1 by GW [Gross Weight (ZFW +Fuel)] from 737 V speeds table ➔ 1R
  - Enter VR by GW [Gross Weight (ZFW +Fuel)] from 737 V speeds table ➔ 2R
  - Enter V2 by GW [Gross Weight (ZFW +Fuel)] from 737 V speeds table ➔ 3R
- IVAP-flightplan (1 / 2) — Read route from FMC (Legs page) & note
- IVAP-flightplan (2 / 2) — Enter route into IVAP-FP
- Mach (or TAS) in flightplan — Read from flight-planning chart and enter
- Departure Time — Enter (in UTC/Zulu ➔ CET (MEZ) -2 / (winter -1)
- EFIS-Mode (Pedestal) — MAP
- EFIS-Range (Pedestal) — 40nm (or as required)
- IFR-Clrc. — Request
- FP correction — Correct (if needed)
- Clrc. data — Note (Squawk, First-Altitude, QNH ➔ Readback)
- Squawk — Set
- Altimeter — Set to actual atmospheric pressure (B)
- Door 1 — Close (shift + e)
- Gangway — Disable (strg + j)

- Doors — Check all closed
- Gen Bus Transfer Switch — Auto
- Fuel Pumps — On (no cross-feed)
- Hydraulic Pumps — On
- Anticollision Lights — On
- Pack Left — Off
- Pack Right — Off
- Thrust — Idle (check)
- Fuel Control Switches — Cutoff (check)

Engine s/u & Pushback:

- Engine s/u & p/b clrc — Request
- Parkingbreak — Release
- Pushback — Start

- Duct Pressure Gauge — 30 PSI (verify)
- Ignition Selector — Engine L (or R or Both)
- Left Engine Start Switch — GRD
  --- wait till Engine 1 at N1 20% ---
- Left Engine Fuel Control Switch — On
  --- wait till Left Engine Start Switch returned to off ---
- Left Engine Start Switch — CONT
- Right Engine Start Switch — GRD
  --- wait till Engine 2 at N1 20% ---
- Right Engine Fuel Control Switch — On
  --- wait till Right Engine Start Switch returned to off ---
- Right Engine Start Switch — CONT
- Engine Generator Switches — On

- AC-Voltemeter-Selector — Gen 1 (or 2)
- APU — Off
- APU Bleed — Off
- Pitot Heat Switches — On
- Window Heat Switches — On
- Engine Anti-Ice — As Required
- Wing Anti-Ice — As Required
- Yaw Damper — On
- Pack Left — On
- Pack Right — On
- Air Condition (OHP) — GRD ➔ FLT
- Flaps — Select (as filled in FMC / 5°)
- Autobreak — RTO
- Pushback — End
- Taxi-Lights — On

Taxi:

- Taxi-Clrc — Request
- Taxiways — Note
- (Ground guidance — Request if needed)
- Logo, Wing, Wheel Well-Lights — On

- Taxi to h/p
  - Autopilot — Set
    - AP Disengage bar — Up (AP available)
    - FD (Flight Director) — On
    - AT (Auto-Throttle) — On
    - IAS — 250 knots
    - HDG — Rwy heading
    - ALT — To assigned altitude (or final FL on Unicom)
  - Spoiler — Armed

h/p:

- Hand-off GND to TWR — Change frequency
- l/u & t/o clrc — Request (rdy for dep h/p xx)
- Landing-Lights — On
- Taxi-Lights — Off
- IVAP-Transponder — ein
- Postion & hold — Taxi & stop on rwy

Ready to Takeoff:

- Parkingbreak — Set
- N1 (AP) — On
- Thrust Levers — Move forward to maximum thrust
- Parkingbreak — Release
- Yoke (till 80 knots) — Press forward
- V1 — Abort of start not possible anymore
- VR — Lift nose up
- V2 — Lift-off

Takeoff:

- Trim settings — Adjust (when needed)
- Gear — Up (at positive climb rate >500ft)

  ---at 1000ft AGL---
- Autopilot — On
- A/T — On
- LNAV — On
- LVL CHG — Push (or VNAV on
- Flaps — Raise
- Airborne — Publish airborne when on Unicom (no ATC)
- Start time — Note (if needed)
- Hand-off TWR to APP(DEP) — Change frequency

Climb:

- Landing- Lights — Off

  --- to final FL / next FL clrc ---
- AP altitude (& speed) — Change (FL CH when VNAV not enabled)

  ---do the following things if required---
- Hand-off APP to CTR — Change frequency
- Engine & Wing anti-ice — On (under 10°C TAT)
- Altimeter — Readjust (above 18000ft)

Cruise:

- Radio /ATC contact — Maintain (on UniCom watch TCAS)
- Autopilot / FMC — Check permanently
    - FMC — Check PROGress page for fuel consumption

---when center fuel tank empty---

- Center fuel pump — Off

Descent & Approach:

- Descent preparations — Begin 30nm before T/D (Top of Descent)
- Airport-/Meta-Information — Retrieve
- Autobreaks — Set
- Start of Descent (4 possibilities):
    - VNAV:
        - Alt (AP) — Set (before reaching T/D !)
        - VNAV — Will descent automatically at T/D
    - DES NOW:
        - Alt (AP) — Set (before reaching T/D !)
        - FMC — ACT ECON CRZ page ➔ VNAV
        - Page 2 — Next Page
        - Des Now — 6R
        - Execute — EXEC
    - FL CH:
        - Alt (AP) — Set
        - FL CH (AP) — On
        - Speed (AP) — Set to IAS, set Speed
    - Change Cruise Alt:
        - FMC — ACT ECON CRZ page ➔ VNAV
        - Alt (FMC) — Enter in Scratchpad
        - Cruise Alt (FMC) — Set ➔ 1L
        - Execute — EXEC
- ILS frequency — Set into NAV1 (if ILS for rwy/approach available)
- Speedbrakes — Flaps to 1 (when needed/too fast)
- Altimeter — Readjust (under 18000ft)
- Hand-off CTR to APP — Change frequency
- Landing lights — On
- TCAS — BLW (Pedestal / IVAP)
- Spoilers — Arm

Final approach & Landing (Autoland):

- Flaps — Lower (as indicated on PFD) (e.g. 1 passes by set to 5)
- Gear — Down (under 270kt / at flap 20)
- Speedbrake — Arm
- ILS captured — Announce (on Unicom state final app)
- LOC (AP) — On (to follow ILS localizer)
- APP (AP) — On (to follow glideslope)

---check, when APP pressed, LOC, VNAV off, AP on---

- Hand-off APP to TWR — Change frequency
- Landing clrc — Request (or state intention on Unicom)

---Touchdown---

- Throttles — Idle
- Spoilers — Engage (if not auto-engaged)
- Thrust reversers — Engage (if needed)

- Thrust reversers — Disengage (at 80kt) (Throttles idle)
- Autopilot (AP) — Dienagage
- A/T (AP) — Off
- F/D (AP) — Off
- Runway — Vacate („rwy vacated“)

Final approach & Landing (w/o Autoland):

- Flaps — Lower (as indicated on PFD) (e.g. 1 passes by set to 5)
- Gear — Down (under 270kt / at flap 20)
- Speedbrake — Arm
- ILS captured — Announce (on Unicom state final app)

---check flaps to ref-degree and gear down---

- Hand-off APP to TWR — Change frequency
- Autopilot (AP) — Disengage (Disengage bar down)
- A/T (AP) — Off
- F/D (AP) — Off
- Trim settings — Adjust (when needed)
- Landing clrc — Request (or state intention on Unicom)

---Touchdown---

- Throttles — Idle
- Spoilers — Engage (if not auto-engaged)
- Thrust reversers — Engage (if needed)
- Thrust reversers — Disengage (at 80kt) (Throttles idle)
- Runway — Vacate („rwy vacated“)

Taxi:

- Transponder — Stdby
- Hand-off TWR to GND — Change frequency
- Taxiways — Note and follow (with active ATC)
- (Ground-Guidance — Request if required)
- Flaps — Set 0
- Spoilers — Detent (if engaged)
- Autobrakes — Off
- Taxi Lights — On
- Landing lights — Off
- Strobe — Off
- Landing time — Note (if needed)
- APU — On

Parking Position:

- Parkingbreak — Set

---wait till APU Gen available---

- APU Gen Switches — On
- APU-Bleed — On
- AC-Voltemeter-Selector — APU
- DC-Voltemeter-Selector — BAT
- ENG 1 — Cut off
- ENG 2 — Cut off
- Door 1 — Open (shift + e)
- Gangway — Enable (strg + j)
- Seat-Belts & No-Smoking — Off

- Lights — Off (POS on)
- ATC contact — End (state “on blocks, thx for service, bye”)
- Window Heat — Off
- Pitot Heat — Off
- Anti-Ice — Off
- Hyd Pumps — Off
- Air Condition (OHP) — FLT ➔ GRD
- Packs & Bleeds (AC) — On
- Auto-Break — Off
- IRS Selectors — Off
- Emergency Exit Lights — Off
- Galley Power — Off
- Ground Power — On

---continue if dark & cold needed---

- Packs — Off
- Ground Power — Off
- AC-Voltemeter-Selector — Standby
- APU Gen Switches — Off
- APU-Bleed — Off
- APU — Off
- DC-Voltemeter-Selector — Standby
- Battery — Off

<u>Checklist for Wilco 737 PIC with Microsoft Flight Simulator.</u>

Created by:	Carsten Rau (June 2008 / v5)
I used to create:	Wilco 737 PIC manual, my (PMDG) 747 checklist
Only use with:	Microsoft Flight Simulator / IVAO (Intl. Virtual Aviation Organization)
Visit:	http://www.ivao.aero
	http://www.carstenrau.de
	http://www.leveldsim.com - Level-D 767
	http://www.precisionmanuals.com - PMDG 747
	http://www.wilcopub.com - Wilco 737 PIC / Airbus Series 1 & 2

Attachments

for

Checklist MS FSX incl. Wilco 737 PIC

by Carsten Rau

Fuel planning notes, all for -300 variant, -400 and -500 differ slightly:

Flightplan fuel planning (up to 1000nm):

ABBREVIATED FLIGHT PLANNING
.280/.70 CLIMB
.74/320/340 DESCENT
250 KTS CRUISE BELOW 10000 FT.
320 KTS CRUISE 10000 THRU 23000 FT.
.74 MACH CRUISE 24000 FT. AND ABOVE

DIST. N. MI.	REC. ALT.	TAS KTS	AIR TIME MINS.	FUEL LBS.
50	6000-7000	279	16	1800
60	6000-7000	279	18	1950
260	26000-27000	447	44	4600
270	26000-27000	447	45	4750
280	27000-28000	445	47	4850
290	28000-29000	443	48	4950
300	28000-29000	443	49	5100
310	28000-29000	443	51	5200
320	29000-31000	441	52	5300
330	29000-31000	441	53	5400
340	31000-33000	438	55	5550
350	31000-33000	438	56	5650
400	33000-35000	433	62	6250
450	33000-35000	433	69	6850
500	33000-35000	433	76	7500
550	33000-35000	433	82	8100
600	33000-35000	433	89	8700
650	33000-35000	433	96	9300
700	33000-35000	433	102	9900
750	33000-35000	433	109	10500
800	33000-35000	433	115	11100
850	33000-35000	433	122	11700
900	33000-35000	433	129	12300
950	33000-35000	433	135	12900
1000	33000-35000	433	142	13500

TIME AND FUEL CORRECTION FOR WIND

△ TIME = TIME X WIND COMPONENT ÷ TAS

△ FUEL = FUEL X WIND COMPONENT ÷ TAS

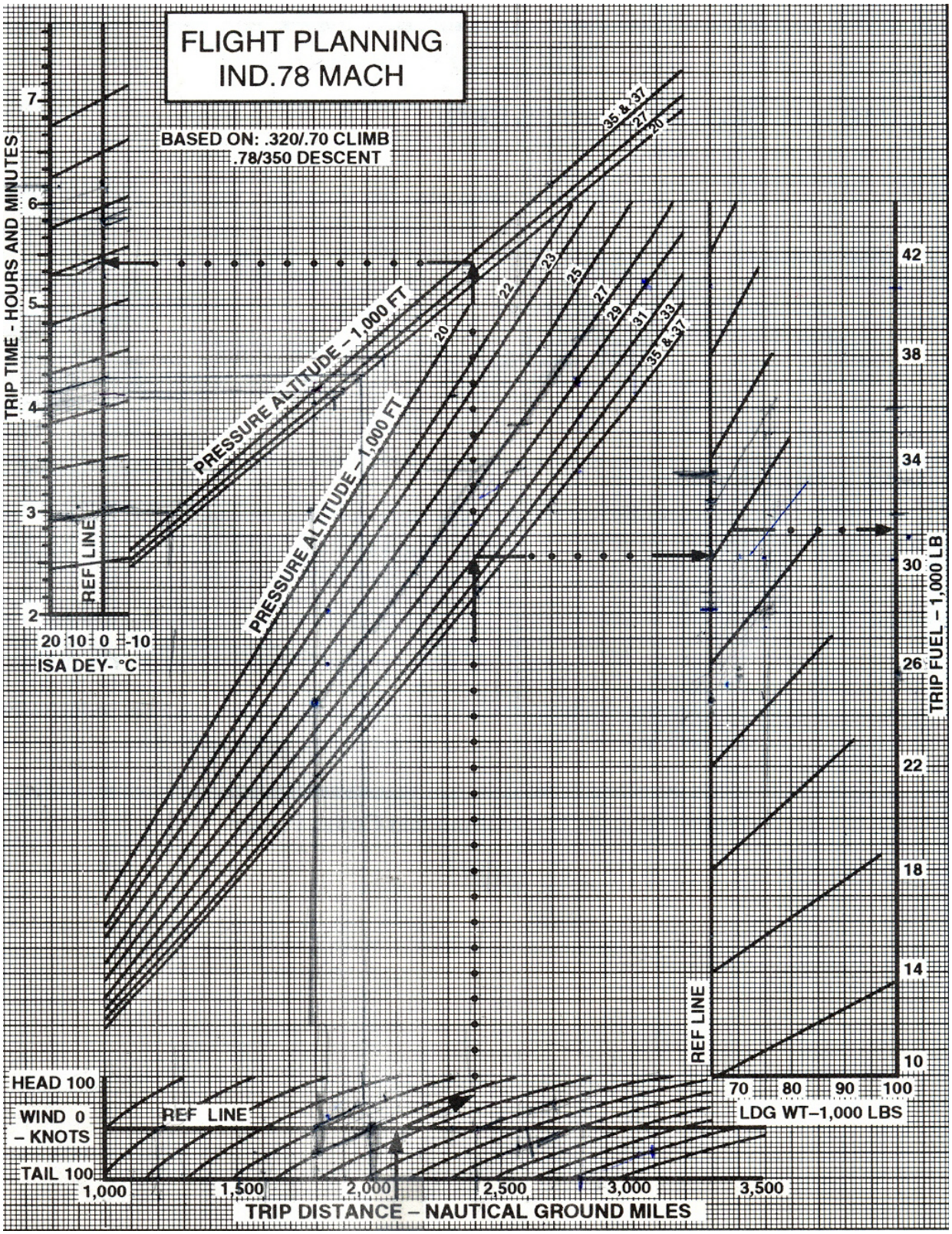
EXAMPLE: DIST. = 250
STILL AIR TIME = 43 MIN.
STILL AIR FUEL = 4500 LBS.
WIND COMPONENT = 20 KTS.

△ TIME = 43 X 20 ÷ 449 = MIN.

△ FUEL = 4500 X 20 = 449 = 200 LBS.

ADD △ TIME AND △ FUEL FOR THE HEADWIND; SUBTRACT FOR TAILWIND

Flightplan fuel planning (1000 to 3200nm):



Note:

Start at the bottom, look up your desired distance. If you want to fly 3500nm you will realize you probably won't reach your destination. So something more realistic…

2100 nm ➔ FL350 or 370 (same line) ➔ 25.000 LBS fuel at lowest TOW (<70.000 LBS) (29.000 LBS at 90.000 LBS TOW) ➔ 4:45h flight time

Fuel planning notes (737-300):

	Basic Operating Weight (OEW)	72.000	LBS	
+	Payload (passengers & cargo)	XX.XXX	LBS	
=	Zero Fuel Weigh (ZFW)	XXX.XXX	LBS	(max 105.000 LBS)
+	Minimum Landing Fuel (FAA 45min reserve)	004.000	LBS	
+	Alternate Fuel (200nm distance)	003.000	LBS	
+	Contingency Fuel (holding, taxi, etc.)	004.000	LBS	
=	Planned Landing Weight (PLW)	XXX.XXX	LBS	(max 114.000 LBS)
+	Flight Plan Fuel (fuel for route)	XX.XXX	LBS	
=	Planned Takeoff Weight (PTOW)	XXX.XXX	LBS	(max 138.000 LBS)

➔**Flight Plan Fuel + 11.000 LBS = Total Fuel**

➔ *Total fuel = Enough fuel for route, 45min contingency (holding & taxi), problematic winds, alternate fuel for 200nm and a minimum landing fuel (45min). Modify alternate value as needed.*
➔ Load wing tanks first, with same amount of fuel; wing tanks full ➔ center tank.

ZFW (max for 733, 734, 735):	105.000	117.000	103.000
PLW (max for 733, 734, 735):	114.000	124.000	110.000
TOW (max for 733, 734, 735):	138.500	149.710	133.210

737 V-Speeds:

Takeoff Speeds 737-300/400/500 - Flaps 5

TOW	737-300			737-400			737-500		
1000 llb	V1	VR	V2	V1	VR	V2	V1	VR	V2
154				158	162	168			
143	154	155	160	152	154	162			
132	147	148	154	144	147	155	147	147	152
121	140	141	148	137	139	149	140	140	146
110	133	133	141	129	131	143	132	132	139
99	123	123	133	112	115	130	113	114	124
88	114	114	126	112	115	130	113	114	124
77	104	104	117	-	-	-	104	104	117

Landing Speeds 737-300/400/500

Landing Weight	737-300			737-400			737-500		
	Flaps			Flaps			Flaps		
1000 llb	40	30	15	40	30	15	40	30	15
154				155	159	177			
143	152	153	165	149	154	171			
132	145	147	158	143	147	164	140	144	154
121	138	141	151	137	141	156	134	139	148
110	131	134	144	130	134	149	128	133	141
99	123	127	136	124	127	141	128	133	141
88	115	119	128	116	119	132	114	117	125
77	107	111	119	109	111	123	107	109	116

The above charts are available for free in the 737 PIC manual at http://www.wilcopub.com.

Reduced & Conventional Vertical Separation Minima - CVSM & RVSM

CVSM		RVSM		RVSM (North-South)		RVSM (meter)		CVSM (meter)	
180° - 359°	000° - 179°	180° - 359°	000° - 179°	270° - 89°	90° - 269°	180° - 359°	000° - 179°	180° - 359°	000° - 179°
FL 040	FL 050	FL 040	FL 050	FL 040	FL 050	1,200 m (3,900 ft)	1,500 m (4,900 ft)	1,200 m (3,900 ft)	1,500 m (4,900 ft)
FL 060	FL 070	FL 060	FL 070	FL 060	FL 070	1,800 m (5,900 ft)	2,100 m (6,900 ft)	1,800 m (5,900 ft)	2,100 m (6,900 ft)
FL 080	FL 090	FL 080	FL 090	FL 080	FL 090	2,400 m (7,900 ft)	2,700 m (8,900 ft)	2,400 m (7,900 ft)	2,700 m (8,900 ft)
FL 100	FL 110	FL 100	FL 110	FL 100	FL 110	3,000 m (9,800 ft)	3,300 m (10,800 ft)	3,000 m (9,800 ft)	3,300 m (10,800 ft)
FL 120	FL 130	FL 120	FL 130	FL 120	FL 130	3,600 m (11,800 ft)	3,900 m (12,800 ft)	3,600 m (11,800 ft)	3,900 m (12,800 ft)
FL 140	FL 150	FL 140	FL 150	FL 140	FL 150	4,200 m (13,800 ft)	4,500 m (14,800 ft)	4,200 m (13,800 ft)	4,500 m (14,800 ft)
FL 160	FL 170	FL 160	FL 170	FL 160	FL 170	4,800 m (15,700 ft)	5,100 m (16,700 ft)	4,800 m (15,700 ft)	5,100 m (16,700 ft)
FL 180	FL 190	FL 180	FL 190	FL 180	FL 190	5,400 m (17,700 ft)	5,700 m (18,700 ft)	5,400 m (17,700 ft)	5,700 m (18,700 ft)
FL 200	FL 210	FL 200	FL 210	FL 200	FL 210	6,000 m (19,700 ft)	6,300 m (20,700 ft)	6,000 m (19,700 ft)	6,300 m (20,700 ft)
FL 220	FL 230	FL 220	FL 230	FL 220	FL 230	6,600 m (21,700 ft)	6,900 m (22,600 ft)	6,600 m (21,700 ft)	6,900 m (22,600 ft)
FL 240	FL 250	FL 240	FL 250	FL 240	FL 250	7,200 m (23,600 ft)	7,500 m (24,600 ft)	7,200 m (23,600 ft)	7,500 m (24,600 ft)
FL 260	FL 270	FL 260	FL 270	FL 260	FL 270	7,800 m (25,600 ft)	8,100 m (26,600 ft)	7,800 m (25,600 ft)	8,100 m (26,600 ft)
FL 280	FL 290	FL 280	FL 290	FL 280	FL 290	8,400 m (27,600 ft)	8,900 m (29,100 ft)	8,600 m (28,200 ft)	9,100 m (29,900 ft)
CVSM	CVSM	RVSM	RVSM	RVSM	RVSM	RVSM	RVSM	CVSM	CVSM
FL 310		FL 300	FL 310	FL 300	FL 310	9,200 m (30,100 ft)	9,500 m (31,100 ft)	9,600 m (31,500 ft)	
	FL 330	FL 320	FL 330	FL 320	FL 330	9,800 m (32,100 ft)	10,100 m (33,100 ft)		10,100 m (33,100 ft)
FL 350		FL 340	FL 350	FL 340	FL 350	10,400 m (34,100 ft)	10,700 m (35,100 ft)	10,600 m (34,800 ft)	
	FL 370	FL 360	FL 370	FL 360	FL 370	11,000 m (36,100 ft)	11,300 m (37,100 ft)		11,100 m (36,400 ft)
FL 390		FL 380	FL 390	FL 380	FL 390	11,600 m (38,100 ft)	11,900 m (39,100 ft)	11,600 m (38,100 ft)	
	FL 410	FL 400	FL 410	FL 400	FL 410	12,200 m (40,100 ft)	12,500 m (41,100 ft)		12,100 m (39,700 ft)
CVSM	CVSM	CVSM	CVSM	CVSM	CVSM	CVSM	CVSM	CVSM	CVSM
FL 430	FL 450	FL 430	FL 450	FL 430	FL 450	13,100 m (43,000 ft)	13,700 m (44,900 ft)	13,100 m (43,000 ft)	14,100 m (46,300 ft)
FL 470	FL 490	FL 470	FL 490	FL 470	FL 490	14,300 m (46,900 ft)	14,900 m (48,900 ft)	15,100 m (49,500 ft)	16,100 m (52,800 ft)
1 Step = 4000 ft						1 Step = 1200 m		1 Step = 2000 m	

RVSM: All countries (inlcuding the Atlantic Ocean) with the following exeptions:

RVSM (North-South): France, Italy, Portugal, Spain & New Zealand.

RVSM (meter): China, excluding Hong Kong, Macau and Taiwan.

CVSM (meter): Russia, Mongolia, North Korea, Kyrgyzstan, Kazakhstan, and 6,000 m or below in Turkmenistan (where feet is used for FL210 and above).