



Checklist + Flow-Procedure
Boeing 737 Classic
-300 / -400 / - 500



DO NOT USE FOR FLIGHT

Boeing 737-300/-400/-500

Checklist / Flow-Procedure

including basic Flight-Planning-Charts

*for Wilco 737 PIC
with Microsoft Flight Simulator / Prepar3D*

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Print Notice: Page size DIN A5. Print 2 pages per A4 or Letter page. This page is the front cover.

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 |
| • Simulator (Flight Sim / Prepar3d) | start & load 737 flight |
| • 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-Voltmeter-Selector APU
- Recirculation Fan Auto
- Pack Left (AC) (OHP) On
- Pack Right (AC) (OHP) On
- Autopilots Off / Disengaged
- Com1-Frequenz Set (active ATC or 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)
- **EFIS-Mode (Pedestal)** MAP
- **EFIS-Range (Pedestal)** 40nm (or as required)
- **IFR-Clrc .** Request
- **FP correction** Correct (if needed)
- **Clrc. data** Note & Readback
- Note: Squawk, First-Altitude, QNH → Readback ---
- **Squawk** Set
- **Altimeter** Set to atmospheric pressure (B)
- **Door 1** Close (shift + e)
- **Gangway** Disable (CTRL + 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-Clr | Request |
| • Taxiways | Note |
| • (Ground guidance | Request if needed) |
| • Logo, Wing, Wheel Well-Lights | On |
| • Taxi to holding point (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 |
| ○ 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 | Advance forward |
| • Parkingbreak | Release |
| • Yoke (till 80 knots) | Press forward |
| • V1 | No abort of take-off |
| • VR | Lift nose up |
| • V2 | Lift-off |

Takeoff:

- | | |
|----------------------------|------------------------------------|
| • Trim settings | Adjust (when needed) |
| • Gear | Up (at positive climb rate >500ft) |
| ---above 1000ft AGL--- | |
| • Autopilot | On |
| • A/T | On |
| • LNAV | On |
| • LVL CHG | Push (or VNAV on) |
| • Flaps | Retract step by step |
| • Airborne | Publish when on Unicom |
| • Start time | Note (if needed) |
| • Hand-off TWR to APP(DEP) | Change frequency |

Climb:

- | | |
|--|---|
| • Landing- Lights | Off |
| --- to final FL / when cleared to next or final flight level --- | |
| • AP altitude (& speed) | Change (FL CH when VNAV is 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 |
| • Autopilot / FMC | Check permanently |
| ○ FMC | Check PROG ress page for fuel consumption |
| ---when center fuel tank empty--- | |
| • Center fuel pump | Off |

Descent & Approach:

--- Before reaching Top of Descent (T/D) ---

- Descent preparations Begin
- 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 Up if required
- 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)
- Note: if "1" passes by on PFD, set flaps to next step, e.g. "5", etc. ---
- Gear Down (under 270kt / at flap 20)

- | | |
|---|-----------------------------------|
| • Speedbrake | Retract & Armed |
| • ILS captured | Announce |
| • 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 |
| ---Touchdown--- | |
| • Throttles | Idle |
| • Spoilers | Engage (if not auto-engaged) |
| • Thrust reversers | Engage (if needed) |
| • Thrust reversers | Disengage at 80kt, Throttles idle |
| • Autopilot (AP) | Disengage |
| • A/T (AP) | Off |
| • F/D (AP) | Off |
| • Runway | Vacate („rwy vacated“) |

Final approach & Landing (w/o Autoland):

- | | |
|---|-----------------------------------|
| • Flaps | Lower (as indicated on PFD) |
| --- Note: if “1” passes by on PFD, set flaps to next step, e.g. “5”, etc. --- | |
| • Gear | Down (under 270kt / at flap 20) |
| • Speedbrake | Retract & Armed |
| • ILS captured | Announce |
| ---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 |
| ---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 | Stdbby |
| • Hand-off TWR to GND | Change frequency |
| • Taxiways | Note and follow |
| • (Ground-Guidance | Request if required) |
| • Flaps | Set 0 |
| • Spoilers | Retract (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") |
| • 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



Checklist + Flow-Procedure

Boeing 737 Classic

-300 / -400 / - 500



Intentionally Blank

Fuel-Planning-Chart for flights 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.

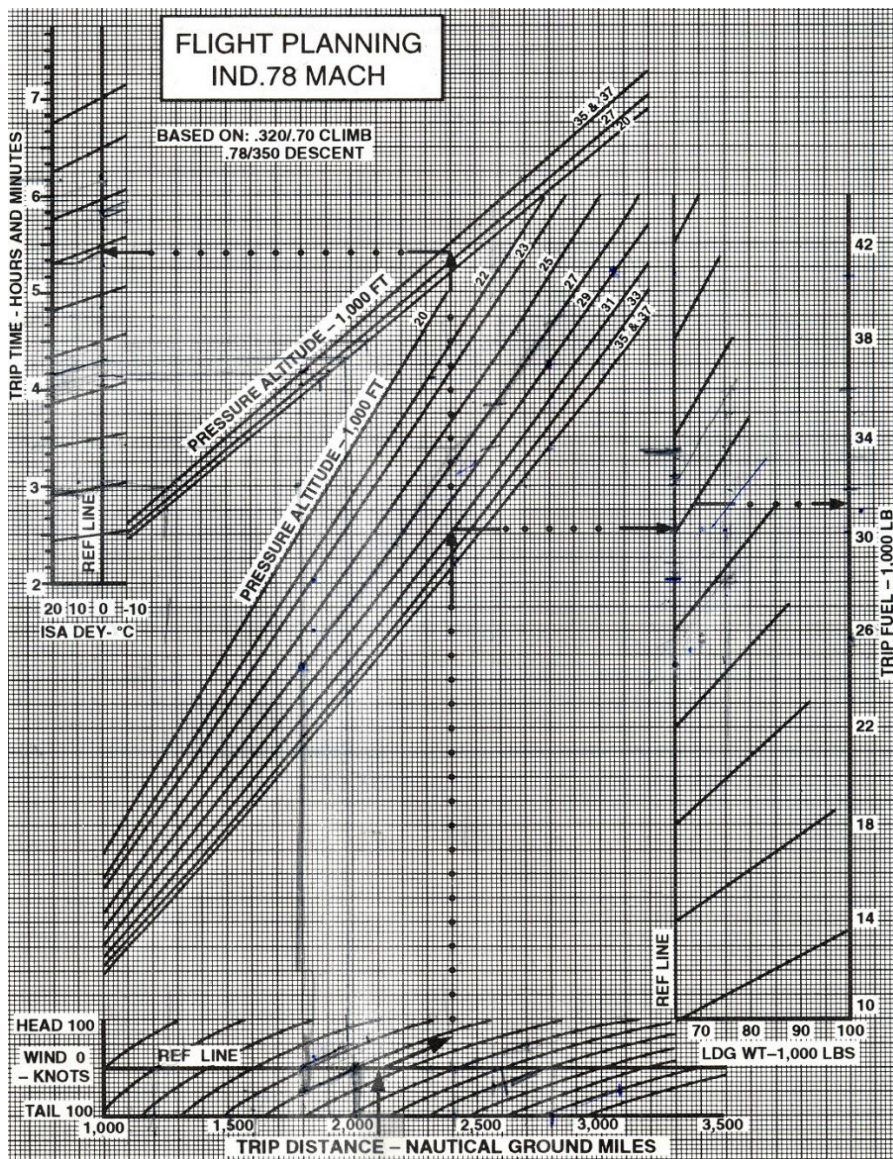
WIND COMPONENT = 20 KTS.

△ TIME = 43 X 20 ÷ 449 = MIN.

△ FUEL = 4500 X 20 ÷ 449 = 200 LBS.

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

Fuel-Planning-Chart for flights from 1000 - 3200nm:



Note for table on page 14:

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

GENERAL NOTICE TO ALL AIRMEN: Fuel planning charts & notes are all for the 737-300, fuel consumption for the -400 and -500 models differ "slightly".

Fuel planning notes (737-300):

	Basic Operating Weight (OEW)	72.000	LBS
+	Payload (passengers & cargo)	XX.XXX	LBS
=	Zero Fuel Weight (ZFW) (max 105.000 LBS)	XXX.XXX	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) (max 114.000 LBS)	XXX.XXX	LBS
+	Flight Plan Fuel (fuel for route)	XX.XXX	LBS
=	Planned Takeoff Weight (PTOW) (max 138.000 LBS)	XXX.XXX	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 1000 llb	737-300			737-400			737-500		
	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 1000 llb	737-300			737-400			737-500		
	Flaps			Flaps			Flaps		
	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>.