

### Boeing 747 400 Limitations

Autoland Crosswind Max	25	KTS
Autoland Headwind Max	25	KTS
Autoland Tailwind	15	KTS
<b>Autopilot Must be Disengaged Below MDA Before</b>	<b>50</b>	<b>FT</b>
<b>Autopilot Must Not Be Engaged During TO Below</b>	<b>250</b>	<b>FT</b>
<b>Autopilot Single Channel Must be Disengaged Before</b>	<b>100</b>	<b>FT</b>
<b>Autopilot with Use of Aileron Trim</b>	<b>Prohibited</b>	
<b>Brake Accumulator Precharge Minimum</b>	<b>750</b>	<b>PSI</b>
<b>Crosswind TO &amp; LDG not limiting</b>	<b>30</b>	<b>KTS</b>
Diff Cabin	9.4	PSI
Diff CPT / FO ALT RVSM	200	FT
Diff CPT / FO ALT RVSM 0-5000'	35	FT
Diff CPT / FO ALT RVSM 10,000'	40	FT
Diff TO & LDG	.11	PSI
Do Not Use Frequencies	11.133	MHZ
Do Not Use Frequencies	22.434	MHZ
Do Not Use Frequencies	22.683	MHZ
Do Not Use Frequencies	22.766	MHZ
Do Not Use Frequencies	29.489	MHZ
Do Not Use Frequencies	29.490	MHZ
Door Opened Wind	65	KTS
Door Operating Wind	40	KTS
EGT MAX Flight	925	C
EGT MAX Takeoff	960	C
EGT Starting Flight	750	C
EGT Starting Ground	750	C
EGT Transient 40 Seconds	870	C
Extend or retract Flaps Between 1 & 5 During Jettison	Prohibited	
Flight Maneuvering Load Flaps Down	2.0 – 0	G
Flight Maneuvering Load Flaps Up	2.5 - 1.0	G
Fuel CWT Max	114,999	LBS
Fuel Imbalance 1 & 4	3,000	LBS
Fuel Imbalance 2 & 3	6,000	LBS
Fuel Main 1 and 4 Main Max per side 30,029.5	60,059	LBS
Fuel Main 2 and 3 Main Max per side 84,058	168,116	LBS
Fuel Reserve Max per side 8,589	17,178	LBS
Fuel Total Capacity	360,889	LBS
Fuel Transfer Wt Max (Res 2&3 must be full w/TOW Abv:	785,000	LBS
Glideslope Angle	3.25	DEG
<b>HF Operation During Refueling</b>	<b>Prohibited</b>	
<b>Icing TAT</b>	<b>10</b>	<b>C</b>
Jet-A Freeze	-40	C
Jet-A Jet A-1 JP-5 JP-8 Tank Temp	54	F
Jet-A1 Freeze	-47	C
Jet-B JP-4 (Prohibited) Tank Temp	43	F
JP-5 Freeze	-46	C
<b>Max Altitude Operating</b>	<b>45,100</b>	<b>FT</b>

<b>Max Flaps Extension</b>	<b>20,000</b>	<b>FT</b>
Max Landing Wt	666,000	LBS
Max TO & LDG ALT	10,000	FT
<b>Min Icing Temperature or Below OAT/TAT</b>	<b>10</b>	<b>C</b>
Min Oil Quantity Before Start	18	QTS
Minimum Glideslope Angle	2.5	DEG
Minimum In-flight Wt.	361,200	LBS
Minimum In-Flight Wt. Landing Flaps 30	670,000	LBS
N1	111.4	RPM
N2	105.5	RPM
Oil Press Minimum	70	PSI
OIL Temp	163	C
OIL Temp 20 Minute Limit	177	C
<b>Oxygen Crew Over Land Minimum</b>	<b>950</b>	<b>PSI</b>
<b>Oxygen Crew Over Ocean</b>	<b>1500</b>	<b>PSI</b>
<b>Oxygen Supernumerary Minimum</b>	<b>1200</b>	<b>PSI</b>
Runway Slope	2	Percent
<b>Tailwind TO &amp; LDG</b>	<b>15</b>	<b>KTS</b>
Takeoff Max	875,000	LBS
Taxi Max (@ZFW 610 & Above=MTOW +3000)	878,000	LBS
Tire Speed	204	KTS
<b>Turb Air Penetration .82 -</b>	<b>.85</b>	<b>M</b>
<b>Turb Air Penetration 290 -</b>	<b>310</b>	<b>KTS</b>
Vfe 1	280	KTS
Vfe 10	240	KTS
Vfe 20	230	KTS
Vfe 25	205	KTS
Vfe 30	180	KTS
Vfe 5	260	KTS
Vle Extended	320	KTS
Vlo Extension & Retraction	270	KTS
VNAV level-off (2000') QNH Min (after Altimeter Chg)	29.70	"Hg
WX Radar No Use Within (Fuel Spill	50	FT
ZFW (811,000 or less) or reduce Linearly to 610,000	635,000	LBS