

B747-400F - LIMITATIONS

DIMENSIONS

wing-wing	213'	gnd-top cockpit 32'	gnd-rudder 63'
nose-tail	231'	wing tip radius	149'
captain seat-aft to BodyGear	100'	minimum pavement for 180 turn	153'
wing grows 12' and passes 37' in front of nose during turn			

WEIGHTS

max taxi	397,800	min fuel at touchdown	1100 kg
max t/o	369,893	min fuel go-around	2600kg
max land	302,092	min fuel indicator error	1800kg
max zfw	288,031	minimum landing fuel	5500kg
min main gear tire rate	56,600 lbs	min block in domestic	10,500kg
min nose gear tire rate	50,400 lbs	min block in international	10,500kg

ENGINES (GE CF6-80C2B5F)

Thrust	62,100	Max EGT start	750 (870/40sec)
Max RPM N1	117.5	Max EGT max continous	925
Max RPM N2	112.5	Max EGT Take-off	960
Minimum Engine Oil Pressure	10psi	minimum APU oil quantity	.55RF
Minimum Engine Oil quantity	16 qts	hyd fluid min	0.8
Max Eng Oil Temp	160 C	Fuel density range	6.0-7.1 (6.43chart)
Max Trans Oil Temp (15min)	160-175 C	Min fuel: 3degrees above frz point of fuel	
Max temp JetA, A1,JP5	54.5C(130F)	Max Temp JetB, JP4	43C(110F)
Fuel Temp min/max Jet A	-36-+54	Fuel Temp min/max JetB	-44-+43
Fuel Temp min/max JP5	-43-+54	Fuel Temp min/max JP4	-45-+43
Fuel Temp min/max JetA1	-44-+54	Fuels allowed Jet A,A1,B, JP4, 5	

FLIGHT MANUEVER LOAD LIMITS

flaps up	+2.5G--1.0G
flaps down	+2.0G-0.0G

ALTITUDES

max certified operating	45,100	max APU operating	20,000
max FLAP ext. altitude	20,000	max APU pneumatics	15,000
max pa T/O & Ldg	10,000	minimum Autoland TCH	44 feet
A/P after take-off (Atlas)	500 AGL	A/P non-prec app	50 blo MDA
A/P Single Channel ILS	100 AGL		

AIRSPEED LIMITS

max flaps 1	280kts	max RVSM	.90M
max flaps 5	260kts	stby altimeter not authorized for RVSM	
max flaps 10	240kts	Autoland Headwind	25kts
max flaps 20	230kts	Autoland Tailwind	10kts
max flaps 25	205kts	Autoland Crosswind	25kts
max flaps 30	180kts	CAT II/ CATIII crosswind	10kts
RDR Ratio - Single xwind	20kts	max ldg gear ext.	320kts/.82M
RDR Ratio - Single xwind	10kts	max ldg gear oper.	270kts/.82M
RDR Ratio - DUAL (eng inop)	5kts	Turb Air Penet	290-310/.82-.85M

AIRSPEEDS (Vref30+ _____)

trail edge flaps assym/spilt	25kts	jammed stab on landing	20kts
dual hydraulic failure	20kts	one engine reverse on ldg	20kts

MAXIMUM DEMONSTRATED CROSSWIND COMPONENTS(ATLAS LIMITS)

TAKEOFF - Stand wtr, slush, snow, ice	15	TAKEOFF/LANDING - NORM	30
LANDING - Stand wtr, slush, snow, ice	10	LANDING - WET	25

SAFETY

upper deck = 6 persons, 2 crew (8) taxi/take-off/ldg
 each passenger must be briefed by crewmember on the following: location/operation
 each exit, location/use escape harness/slide, location/use fire extinguishers/protable
 oxy/smoke hoods

MISC

max pressure relief	9.4 psid	Pax Oxy	1200psi
max allowable cabin different	0.11 psid	Crew Oxy over Land	950psi
Brake Accum Air charge	750psi	Crew Oxy over Water	1200psi
HF freq proh 11.113 22.434	22.683 22.766	slush/water TAKEOFF	1/2"
GlideSlope min/max	2.5-3.25	slush/water LANDING	1"
aileron trim prohibited with autopilot engaged	max runway slope		+/-2%
use of reverse thrust in flight or to back up - PROHIBITED			
A/P diseng blo 50' unless GS/LOC or G/A...without LAND 2/3 then 100'			
Must have smoke detector operable in each main deck cargo zone if cargo in it.			
smoke barrier door must be closed for taxi, take-off, flight, & landing			
Must have enough Oxy for each occup at 25k cabin alt to nearest land, if Class E loaded			
Up-deck escape slide must be FWD&Locked taxi, T/O, LDG w/upper deck occupied			
IGN *ON*: T/O, land, hvy rain, severe TBLC, volc dust, icing, stand water, slush			