

G650 LIMITATIONS

OPERATING ALTITUDES

Maximum Airport (6003-6019).....	14,500'
Maximum Airport (6001 & 6020 sub).....	15,000'
Maximum Operating Altitude.....	51,000'
Single Pack Operating Altitude.....	48,000'
Min Temp for Ground Ops (Cold Soak).....	-40°C

INTERNAL BAGGAGE DOOR

Max Altitude.....	40,000'
Baggage Door Open (single pack).....	Prohibited above 45k

PRESSURISATION CONTROL

Maximum Cabin Diff'	10.69 PSID
Maximum Cabin Diff' Taxi / Take-Off / Landing.....	0.3 PSID

AIRSPED LIMITATIONS

Minimum Control Speed Air F20 (VMCA).....	101.5 KCAS
Minimum Control Speed Air F10 (VMCA).....	105.0 KCAS
Minimum Control Speed Landing (VMCL).....	100.5 KCAS
Minimum Control Speed Ground (VMCG).....	105 KCAS/SL
Minimum Control Speed Ground (VMCG).85 KCAS/15,000'	
Maneuvering (Va).....	206 KCAS
Turb. Penetration Speed (Vb).....	270 KCAS/.85 >10k ft
Turb. Penetration Speed (Vb).....	240 KCAS < 10k ft
Holding in Icing Condition (Flap 0).....	180 KCAS Minimum
Tyre Speed.....	195 Kts
Yaw Damper Inop Speed (Max Speed).....	285/0.9
With Degraded Flight Control law (Max Speed).....	285/0.9
If Flight Control Surface Fail (Component or Hydraulic)..	
.....	285/0.9

Mmo

FL293 – FL350.....	0.875
FL350 – FL510.....	0.925
V _{MO} Above 10,000'	340 KCAS
V _{MO} Below 10,000'	300 KCAS

STALL PROTECTION

Stall protection is only available in Normal Flt Ctrl Mode

DEGRADED FLIGHT CONTROL LAW

Flight into Icing conditions is not permitted unless using NORMAL flight control law.

SPEED BRAKES

Speedbrakes not approved with Gear Down and / or F39.

GROUND SPOILERS

Maybe inoperative, take-off permitted on dry or wet runways (less than 3mms) provided F20 used.

If a touch and go landing is to be performed, the GRD SPLR switch must be OFF and manual spoiler landing distances must be taken into account

FLAPS

10°	250 KCAS
20°	220 KCAS
39°	190 KCAS

Use of flaps in icing conditions limited to take-off, approach and landing

Holding in icing conditions is limited to 0° Flap only

Max' operating altitude for extending flaps to 39° down is 20,000' MSL

Max' operating altitude for extending flaps to 10° or 20° down is 25,000' MSL

APU LIMITATIONS

Maximum Operating Altitude.....	45,000'
Guaranteed /Possible Starting Altitude.....	30,000'/39'000'
Electrical Load.....	40 KVA

Maximum Start TGT.....	1050°C
Maximum Running.....	732°C
Maximum RPM.....	106%
Used for Main Eng Start	Below 30,000'

APU STARTER LIMITATIONS

Continuous operation of the APU starter when powered by the aircraft batteries: 3 Consecutive Start attempts followed by a 1 hour cool down.

Successful consecutive starts limited to 6 with a 10 minute interval between starts.

EXT DC power for starting is prohibited.

ENGINE LIMITATIONS

FUEL TEMPERATURE

Maximum Engine Fuel temperature.....	140°C
Fuel Temp up to 165°C for a Max of 15 Mins is permissible	
Minimum Engine Fuel temperature.....	-40°C

ENGINE OIL TEMPERATURE LIMITATIONS

Maximum Oil Temperature.....	160°C
Minimum Oil Temperature for Starting.....	-40°C
Minimum Oil Temperature T/O PWR.....	20°C

ENGINE OIL PRESSURE LIMITATIONS

Minimum Oil Pressure for take-off...35PSI < 72.3 HP RPM	
Minimum Oil Pressure for take-off...45PSI > 90.0 HP RPM	
Continue Flight.....25PSI < 72.3 HP RPM	
Continue Flight.....35PSI > 90.0 HP RPM	
Pressure drops below 25 psi.....	shutdown engine

ENGINE STARTER DUTY TIMES

Continuous operation of the starter is limited to 3 x 3 minute attempts, 15 seconds between each attempt, followed by 15 minutes cool down.

Starter maybe re-engaged at up to 42.0% HP RPM.

ENGINE INSTRUMENTS

1/6th Secondary or Compacted Eng Inst must be displayed.

FUEL SYSTEM – 44,200 (Gravity 43,650)

All operable boost pumps must be selected "ON" for all phases of flight unless fuel balancing in progress.

The engines will only run on suction fuel feed at or below 20,000'. Above 20,000' the engines will run erratically and flame out if the X-Flow is not open with at least one boost pump turned on.

Fuel Tank Temperature Limits Minimum (RED).....-37°C

Fuel Tank Temperature Limits Maximum (RED).....+54°C

Caution CAS.....-34.5 to -37°C

If Fuel Tank temp below -30°C with less than 5000lbs total

– descend to where SAT is -60°C plus and maintain .80 M_T

Fuel Imbalance Weight Take-Off.....1,000 lbs

Fuel Imbalance In-Flight.....2,000 lbs

CAS MESSAGES

Amber CAS messages are DO NOT DISPATCH items

HYDRAULIC

Left system (3.0).....4.55 G

Right System (1.5).....2.77 G

Accumulator Precharge.....1200 PSI

RADAR

Limitations on Ground. Refueling – 50'. Personnel 11'

COMMS

Com/Nav 3 is inoperative

G650 LIMITATIONS

DIMENSIONS

Length.....99' 9"
 Span.....99'7"
 Ht.....25' 7"
 180° Turn {Wing Growth (wing larger arc)}.....62'

GEAR

Altitude.....20,000 MSL Maximum
 Normal Operation.....225 KCAS / .70 MT
 Max' Speed Gear Lowered.....250 KCAS / .70 MT
 Alternate Lowering.....175 KCAS

ELECTRICS

RAT provides power to L/R Ess DC & Emergency AC Bus
 RAT prohibited when normal AC power is available.
On Ground: L/R Ess & L/R Main DC TRU limited to 80%.
 Aux TRU - 40%
 Fuel penalty for RAT is 6%

TYRE PRESSURES

216 pressure recommended (check at least 2 hours after stationary). If below 186psi may have to be replaced.

FLIGHT LOADS

Flaps 0°.....-1 to 2.5
 Flaps 10° or 20.....0 to 2.0
 Flaps 39° (Up to Max LW).....0 to 2.0
 Flaps 39° (Above Max LW).....0 to 1.5

ANTI-ICE SYSTEMS

If CAI & WAI to be used on ground - must be on 2 mins before take-off thrust set.

Cowl Anti-Ice.....SAT 10°C or below & visible moisture present (visibility less than 1 mile)

If temp less than 1°C in icing conditions run engines for 10 secs at 40% LP RPM and just prior to take-off and at intervals not exceeding 60 minutes.

CAI Operations in freezing fog below -10°C is prohibited.

A visual check of the aircraft required for ice when temp is below 6°C, or if it cannot be ascertained that fuel temp is above 0°C and visible moisture present, diff between dew point and outside temp is 3°C, atmospheric conditions conducive to frost formation

MAXIMUM WINDS

Maximum Tailwind for Start.....20 Kts
 Maximum Crosswind for Start.....30 Kts
 Maximum Tailwind for take-off / landing.....10 Kts
 Maximum Demonstrated X-Wind.....28 Kts
 Maximum X-Wind above 10,000' Field Elevation..... 25 Kts

If Flight Control Law not Normal X-Wind.....10 Kts

SINGLE ENGINE

With a single engine inoperative, select TCAS TA only.

STATIC GROUND RUN

Limited to a crosswind component less than 25 knots and a tailwind component less than 20 knots.

THRUST REVERSER

Use of thrust reverser(s) for power back is not approved. Shall be deployed & stowed every 100 hours

AUTOPILOT

Take-off.....Do not engage below 200' AGL on take-off
 Landing.....Minimum disengage height is 80' AGL from ILS or LPV Approach. 200' all other times.

Coupled Go-Around, maximum demonstrated loss of altitude 50'

Single engine coupled Go-Around not approved.

AUTO THROTTLE

During a Single Engine Approach is prohibited.

AUTO SPEEDS

Without ASC901 auto speeds only authorised above 10,000'. Below must be MAN speeds.

VGP

To use VGP (VNAV Glide Path) the crew must use "Vectors" approach transition or initiate the app via IAF. VGP cannot be used for circling approaches.

TCAS

If ADS-B required it must be turned on for all phases of flight, including airport ops (Transponder must be ON).

FMS

Check FMS database each flight if out of date each waypoint must be verified. (approaches cannot be flown with FMS).

WEIGHTS

Zero Fuel Wt.....60,500 lbs
 Ramp Weight.....100,000 lbs
 Take-Off Weight.....99,600 lbs
 Landing Weight.....83,500 lbs
 BOW.....54,000 lbs

MISCELLANEOUS LIMITATIONS

Minimum Flight Crew..... 2
 Maximum Passenger.....19
 Maximum Occupants22

Condition	LP % RPM	HP % RPM	TGT Deg °C	Time Limit	
Maximum Ground Starting			700°C	Momentary	
Maximum Relighting (Air Start)			850°C	Momentary	
Maximum Over Speed	104.3	101.3	-	20 seconds	
Maximum Take-Off	102.8	100.0	900°C	5 min on Two Engines	
				10 mins on One Engine	
Maximum Overtemperature			920°C	20 seconds	
Maximum Continuous	102.8	98.7	885°C	Unrestricted	
Maximum Reverse	78.1	-	-	30 seconds	