GA8-TC 320

FLIGHT MANUAL SUPPLEMENT

INCREASED GROSS WEIGHT

This Supplement is applicable to aircraft that have been modified in accordance with GippsAero Service Bulletin SB-GA8-2011-65, which incorporates features that permit operations at a certified maximum take-off weight of 1905 kg (4200 lb).

This Supplement must be inserted in the Supplement Section (Section 9) of the GA8-TC 320 Pilot's Operating Handbook. Information in this Supplement adds to, supersedes, or deletes information in the basic GA8-TC 320 Pilot's Operating Handbook. For information not contained within this Supplement, see the basic Pilot's Operating Handbook. This supplement comprises part of the approved flight manual for all regions type certified for operations to 1905 kg (4200 lbs) maximum take-off weight.

Additionally, this handbook constitutes the FAA Approved flight Manual and is to be carried in the aircraft at all times. It includes the material required to be furnished to the pilot for aircraft certificated in the U.S.A. and has additional information provided by the manufacturer. This handbook is approved by CASA on behalf of the FAA per 21.29

Approved: _____ Date: 16 March 2012

CIVIL AVIATION SAFETY AUTHORITY AUSTRALIA

AMENDMENT RECORD SHEET

Amendment Date	Description	Pages Affected	Incorporated by (Signature)
1 Mar 2011	Initial Issue	All	GippsAero
6 Jul 2011	FAA Approval	Various (See page dates)	

INCREASED GROSS WEIGHT

SECTION 1 - GENERAL

This supplement provides the pilot with the limitations as well as normal and emergency operating procedures for GA8-TC 320 aircraft that have been modified in accordance with GippsAero Service Bulletin SB-GA8-2011-65. The Service Bulletin details the modifications required to operate the aircraft at a maximum take-off weight of 1905 kg (4200 lb). The maximum landing weight remains at 1814 kg (4000 lb).

SECTION 2 – LIMITATIONS

2.2 AIRSPEED LIMITATIONS

The indicated airspeeds in the table below are based on airspeed calibration data from Section 5.

SPEED	KCAS	KIAS	REMARKS
Max Manoeuvring Speed (V_A)	124	121	Do not make full or abrupt control movements above this speed.
Never Exceed Speed (V_{NE})	187	190	Do not exceed this speed in any operation.
Max Structural Cruising Speed (V_{NO})	149	147	Do not exceed this speed except in smooth air and then with caution.

2.3 AIRSPEED INDICATOR MARKINGS

The airspeed indicator markings in the table below are based on airspeed calibration data from Section 5.

MARKING	IAS VALUE or RANGE	SIGNIFICANCE
White Arc	61 - 100	Full Flap Operating Range. Lower limit is the maximum weight stalling speed in the landing configuration. Upper limit is the maximum speed with flaps fully extended.
Green Arc	66 - 147	Normal Operating Range. Lower limit is the maximum weight stalling speed with flaps retracted. Upper limit is the maximum structural cruising speed.
Yellow Arc	147 - 190	Operations must be conducted with caution and only in smooth air.
Red Line	190	Maximum speed for all operations (V_{NE}).

2.6 WEIGHT LIMITS

Maximum Take-Off Weight: ..... 1905 kg (4200 lb)
Maximum Landing Weight: ..... 1814 kg (4000 lb)
Maximum Weight in Main Cargo Area: ..... 680 kg (1500 lb)
Maximum Weight on Cabin Baggage Shelf: ..... 113 kg (250 lb)
Maximum Weight in Aft Luggage Bin: ..... 22 kg (50 lb)

2.7 CENTRE OF GRAVITY LIMITS

Forward Limit: 1219 mm (48 in) aft of datum at 1089 kg (2400 lb) and below; 1448 mm (57 in) aft of datum at 1905 kg (4200 lb), linear variation between these points.

Aft Limit: 1626 mm (64 in) aft of datum at all weights

Datum: Firewall (Fuselage Station 0)
[located 1057 mm (41.63 in) forward of wing leading edge]

2.9 FLIGHT LOAD FACTOR LIMITS

Flap Position	Positive	Negative
UP	+ 3.79g	-1.52g
DOWN	+ 2.0g	0g

SECTION 3 – EMERGENCY PROCEDURES

3.2 AIRSPEEDS FOR EMERGENCY OPERATIONS

Manoeuvring Speed 1905 kg (4200 lb) .....121 KIAS

Maximum Glide

1905 kg (4200 lb).....80 KIAS

1814 kg (4000 lb).....78 KIAS

1600 kg (3527 lb).....73 KIAS

1400 kg (3086 lb).....69 KIAS

Landing Without Engine Power (Flaps 38°)

1905 kg (4200 lb).....73 KIAS

1814 kg (4000 lb).....71 KIAS

1600 kg (3527 lb).....68 KIAS

1400 kg (3086 lb).....64 KIAS

3.3 EMERGENCY PROCEDURES CHECK LISTS

3.3.1 Engine Failures

Engine Failure During Take-off Run

1. Throttle.....CLOSED
2. Brakes.....APPLY
3. Wing Flaps.....UP
4. Master Switches Bus 1 and Bus 2.....OFF
5. Ignition.....OFF
6. Fuel Shutoff Valve.....OFF

Engine Failure Immediately After Take-off

1. Airspeed.....64-73 KIAS *Refer paragraph 3.2 of this supplement for weight specific speed*
2. Ignition.....OFF (As time permits)
3. Fuel Shutoff Valve.....OFF (As time permits)
4. Master Switches Bus 1 and Bus 2.....OFF
5. Wing Flaps.....FULL RECOMMENDED
6. Braking.....HEAVY AFTER TOUCHDOWN

Engine Failure During Flight

1. Airspeed.....69-80 KIAS *Refer paragraph 3.2 of this supplement for weight specific speed*
2. Fuel Pump.....ON-CHECK FUEL PRESSURE
3. Fuel Shutoff Valve.....CONFIRM ON
4. Fuel Quantity.....CHECK
5. Mixture.....RICH
6. Alternate Air.....SELECT ON
7. Oil.....CHECK TEMP AND PRESSURE
8. Ignition.....CYCLE BOTH-L-R-BOTH
9. Throttle.....CHECK LINKAGE OPERATION
10. Starter.....ACTIVATE IF PROP STOPPED

NOTES:

(a) If engine does not restart commence forced landing procedure.

(b) If clear symptoms of a mechanical failure exist, or if the engine has seized due to the loss of oil pressure, do not attempt a restart.

(c) If engine operates with only L or R magneto selected, leave the ignition switch in this position whilst a suitable landing area is selected.

(d) At high elevations or altitudes roughness or loss of power may result from over-richness. In these cases the mixture should only be adjusted sufficiently to obtain smooth running. Observe instruments for temperature rise. Rough engine operation due to over-richness is most usually encountered at altitudes above 5000 ft.

3.3.2 Forced Landings

Emergency Landing Without Engine Power

1. Glide Airspeed ..... 69-80 KIAS *Refer paragraph 3.2 of this supplement for weight specific speed*
2. Ignition ..... OFF
3. Fuel Shutoff Valve ..... OFF
4. Master Switches Bus 1 and Bus 2 ..... OFF
5. Throttle ..... CLOSED
6. Mixture ..... IDLE CUT OFF
7. Propeller ..... COARSE (LOW RPM) *but may be FINE if steeper descent angle is required*
8. Cowl Flap ..... CLOSED *to reduce drag as required*

FINAL APPROACH

9. Airspeed ..... 64–73 KIAS minimum. *Refer paragraph 3.2 of this supplement for weight specific speed*
10. Wing Flaps ..... FULL PRIOR TO TOUCH DOWN
11. Braking ..... HEAVY AFTER TOUCH DOWN

Ditching

1. Airspeed ..... 75 KIAS
2. Wing Flaps ..... TAKE-OFF
3. Power (if available) ..... ESTABLISH 300 ft/min descent @ 69 KIAS
4. Approach ..... High Winds, Heavy Seas INTO WIND
   Light Winds, Heavy Swells PARALLEL TO SWELLS
5. Wing Flaps ..... FULL PRIOR TO TOUCH DOWN
6. Cowl Flap ..... CLOSED
7. Touch Down ..... SLOWEST PRACTICAL SPEED
8. Evacuate ..... OPEN MAIN CABIN DOOR FIRST *if necessary to flood cabin*

SECTION 4 – NORMAL PROCEDURES

4.2 SPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following speeds are based on a maximum weight of 1905 kg (4200 lb) and may be used for any lesser weight. However, to achieve the take-off and landing performance specified in section 5, the weight specific take-off safety speeds (T.O.S.S.) and landing approach speeds (V_{REF}) stated on the take-off and landing charts must be used.

Take-Off:

T.O.S.S. (Speed @ 50 ft)..... 71 KIAS

Normal Climb Out..... 76-80 KIAS

Climb, Flaps Up:

Initial (scheduled climb)..... 81 KIAS

Enroute..... 81-90 KIAS

Landing Approach:

V_{REF} (Speed @ 50 ft)..... 71 KIAS

Baulked Landing..... 71 KIAS Initially

Maximum Recommended in Turbulence:

All Weights..... 121 KIAS

Maximum Demonstrated Crosswind Velocity:..... 15 knots

4.3 NORMAL PROCEDURES CHECKLISTS

4.3.5 Take-Off

Mixture	FULL RICH *see amplified procedures*
Throttle	OPEN – *monitor and limit power to 40 in Hg MAP / 2500 RPM below 5000 ft pressure altitude and 38 in Hg MAP / 2500 RPM above 5000 ft pressure altitude*
Brakes	RELEASE
Elevator Control	NEUTRAL
Directional Control	NOSE WHEEL STEERING & RUDDER
Rotate	REFER TO TAKE-OFF CHART *in Section 5 of this supplement*
Take-Off Safety Speed	REFER TO TAKE-OFF CHART *in Section 5 of this supplement.* MAINTAIN TAKE-OFF SAFETY SPEED *to obstacle clearance height.*
Accelerate to Climb Speed	ABOVE OBSTACLE CLEARANCE HEIGHT
Flaps	UP
Fuel Pump	OFF – *confirm fuel pressure remains in green*
Power	SET *as required*

4.5 NOISE CHARACTERISTICS

The certificated noise level for the GA8-TC 320 at 1905 kg (4200 lb) maximum weight and 2500 RPM has been established for ICAO Annex 16 Volume1 Chapter 10 as 85.4 dB(A) and Federal Aviation Regulations Part 36 Appendix G as 84.8 dB(A). No determination has been made by the Federal Aviation Administration that the noise levels of this aircraft are or should be acceptable or unacceptable for operations at, into, or out of, any airport.

SECTION 5 – PERFORMANCE

5.2 TAKE-OFF

The take-off distance charts presented on the following pages contains data enabling the take-off distance to be determined for a variety of operating conditions and take-off power. The charts allow for the take-off distance to be determined in feet or metres depending on the pilot's preference.

The charts are based on take-off distances from rest to a height of 50 ft with the engine operating at take-off power. For pressure altitudes below 5000 ft, take-off power is set at 40 in Hg manifold pressure and 2500 RPM. For pressure altitudes above 5000 ft, take-off power is limited at 38 in Hg manifold pressure at 2500 RPM. The surface corrections on the chart are based on standard factors related to strips with a firm surface. Soft ground and unusually long and/or wet grass will increase the take-off distance over that scheduled and the pilot should therefore ensure that adequate strip length is available to cover these conditions.

Prior to commencing the take-off roll, the pilot must establish an accurate weight condition and ascertain the scheduled rotation and take-off safety speed from the performance graphs presented in this Section. The flaps must be set to the take-off position.

The technique used in establishing the chart take-off distance involves holding the aircraft against brakes and applying the necessary take-off power. Brakes are only released once take-off power is achieved and all engine parameters have stabilised. During the take-off roll the aircraft is accelerated on the ground with the elevators held in neutral. At the scheduled rotation speed, the aircraft is *positively* rotated for lift-off. Once airborne, the correct pitch attitude must be smoothly achieved and maintained to climb at the scheduled take-off safety speed, which must be attained by 50 ft AGL.

Extrapolations outside the boundaries of the Take-Off Distance Charts are not permitted. When the outside air temperature and/or pressure height is below the lowest range scheduled on the charts, the aircraft performance shall be assumed to be no better than that appropriate to this lowest range. The performance information is not valid when the outside air temperature and/or pressure height exceeds the maximum values for which this information is scheduled.

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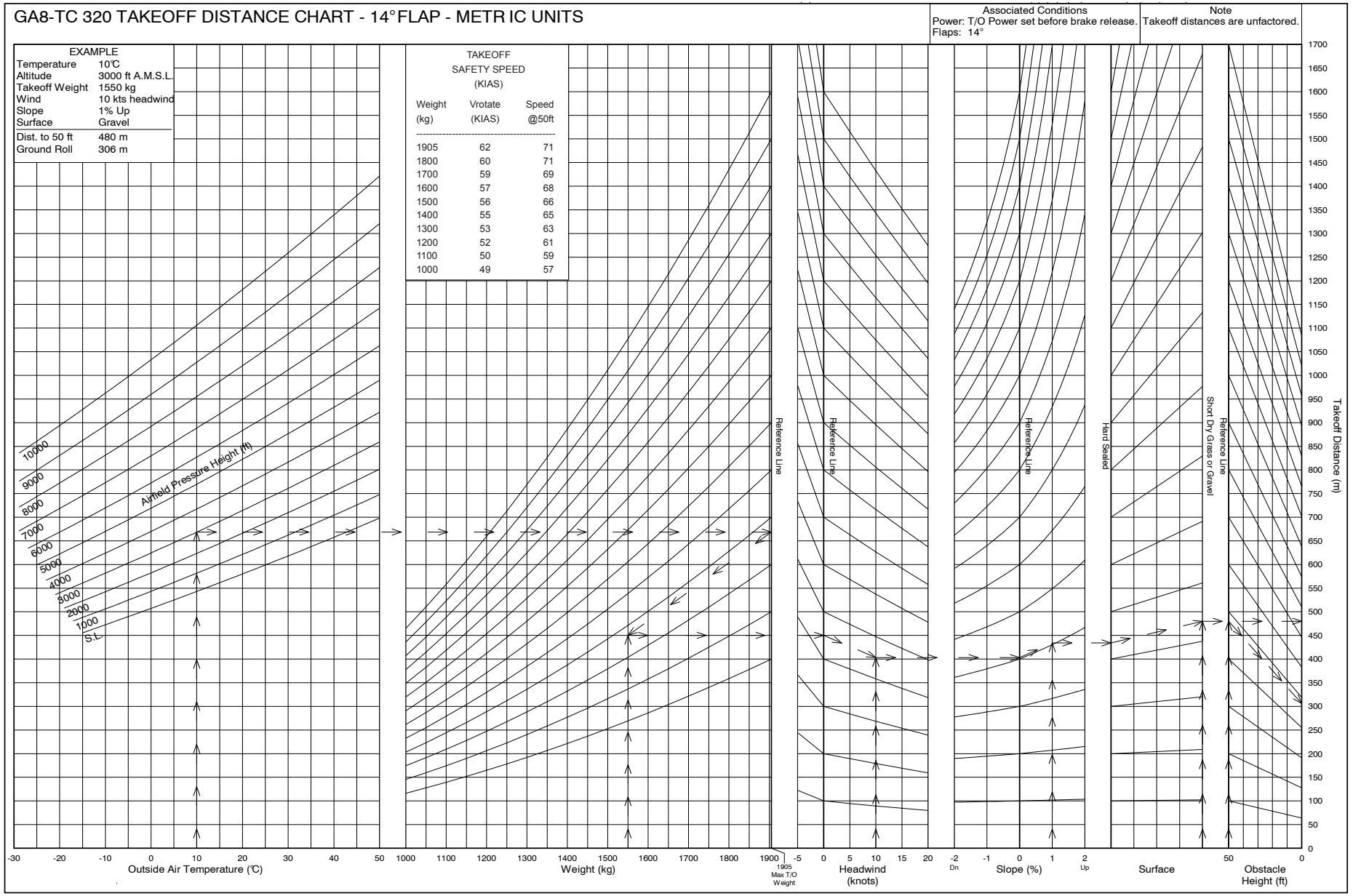

GA8-TC 320 TAKEOFF DISTANCE CHART - 14° FLAP - METR IC UNITS
Associated Conditions
Power: T/O Power set before brake release.
Flaps: 14°
Note
Takeoff distances are unfactored.
EXAMPLE
Temperature 10°C
Altitude 3000 ft A.M.S.L.
Takeoff Weight 1550 kg
Wind 10 kts headwind
Slope 1% Up
Surface Gravel
Dist. to 50 ft 480 m
Ground Roll 306 m
TAKEOFF SAFETY SPEED (KIAS)
Weight (kg) | Vrotate (KIAS) | Speed @50ft
1905 62 71
1800 60 71
1700 59 69
1600 57 68
1500 56 66
1400 55 65
1300 53 63
1200 52 61
1100 50 59
1000 49 57
Airfield Pressure Height (ft)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
S.L.
Reference Line
Reference Line
Reference Line
Hard Sealed
Short Dry Grass or Gravel
Reference Line
Takeoff Distance (m)
Outside Air Temperature (°C)
Weight (kg)
1905 Max T/O Weight
Headwind (knots)
Dn
Slope (%)
Up
Surface
Obstacle Height (ft)

GA8-TC 320 TAKEOFF DISTANCE CHART - 14° FLAP - IMPERIAL UNITS

Associated Conditions
Power: T/O Power set before brake release.
Flaps: 14°

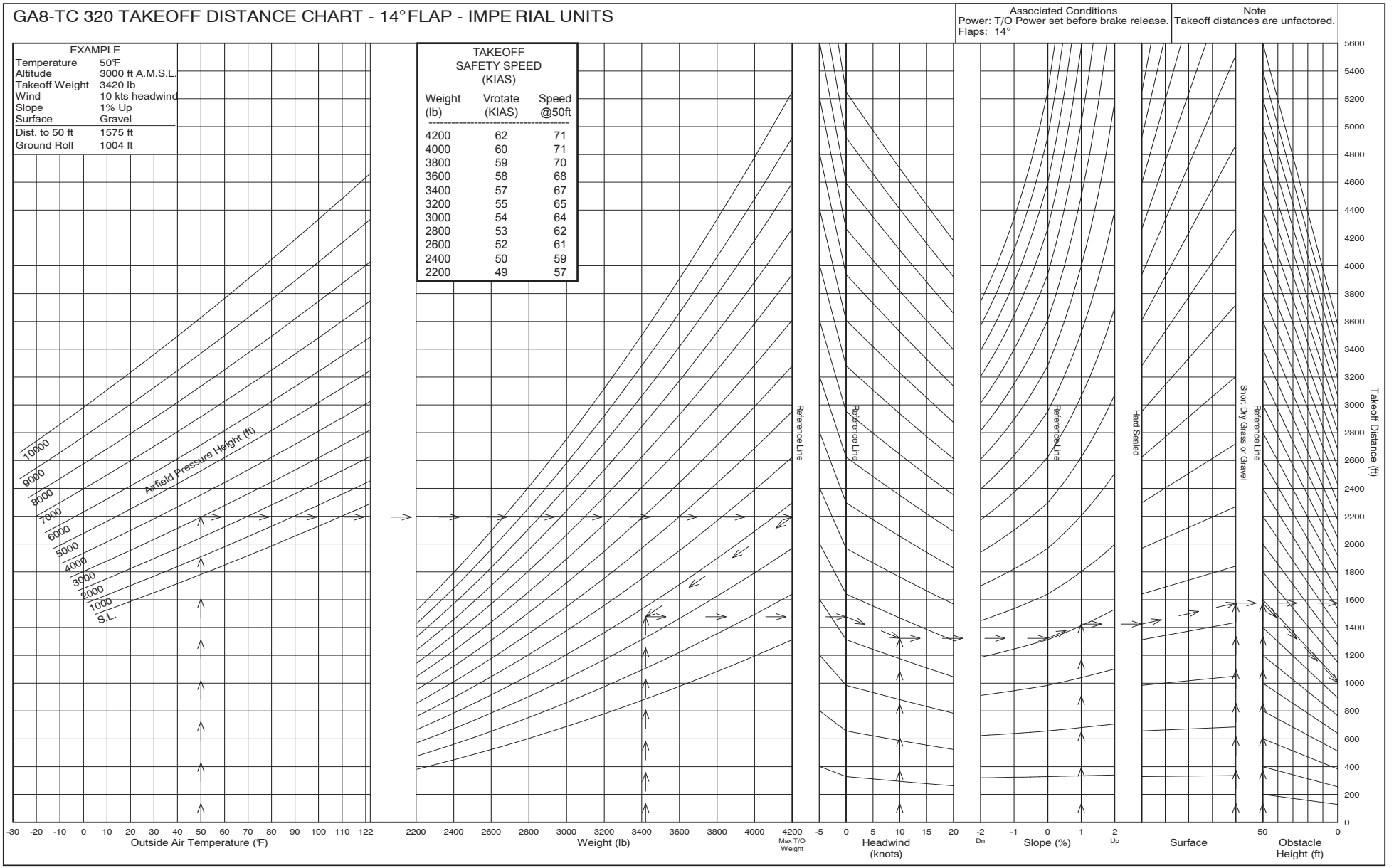
Note
Takeoff distances are unfactored.

EXAMPLE

Temperature	50°F
Altitude	3000 ft A.M.S.L.
Takeoff Weight	3420 lb
Wind	10 kts headwind
Slope	1% Up
Surface	Gravel
Dist. to 50 ft	1575 ft
Ground Roll	1004 ft

TAKEOFF SAFETY SPEED (KIAS)

Weight (lb)	Vrotate (KIAS)	Speed @50ft
4200	62	71
4000	60	71
3800	59	70
3600	58	68
3400	57	67
3200	55	65
3000	54	64
2800	53	62
2600	52	61
2400	50	59
2200	49	57



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5.3 CLIMB

5.3.1 Scheduled Climb

Associated conditions:

Power: Maximum Continuous
Engine Speed: 2500 RPM
Airspeed: 81 KIAS
Flaps: UP
Cowl Flap: OPEN

Weight	Press Alt (ft)	Rate of Climb (ft/min)					
		Outside Air Temperature					
		-20°C	0°C	15°C	30°C	45°C	ISA
		-29°F	32°F	59°F	86°F	113°F	
4200 lb (1905 kg)	0	887	850	825	801	778	825
	2000	851	815	790	767	745	797
	4000	816	781	757	734	712	769
	6000	782	747	723	700	679	742
	8000	747	713	689	667	646	714
	10 000	712	679	655	634	613	686
	12 000	678	645	622	600	580	659
	14 000	587	446	348	256	169	534
	16 000	437	299	202	112	27	413
	18 000	288	152	58	-31	-114	293
4000 lb (1814 kg)	0	920	883	859	835	813	859
	2000	885	850	825	802	780	831
	4000	851	816	792	769	748	804
	6000	816	782	758	736	715	777
	8000	782	749	725	704	683	750
	10 000	748	715	692	671	651	723
	12 000	714	682	659	638	619	696
	14 000	624	482	383	291	204	571
	16 000	473	334	237	147	62	449
	18 000	323	187	92	3	-80	328

Weight	Press Alt (ft)	Rate of Climb (ft/min)					
		Outside Air Temperature (°C)					
		-20°C	0°C	15°C	30°C	45°C	ISA
		-29°F	32°F	59°F	86°F	113°F	
3600 lb (1633 kg)	0	990	955	931	909	888	931
	2000	957	923	899	877	856	905
	4000	924	890	867	845	825	879
	6000	891	858	835	814	794	853
	8000	858	826	803	782	762	827
	10 000	825	793	771	751	731	801
	12 000	792	761	740	719	700	775
	14 000	702	559	459	366	279	648
	16 000	550	409	312	221	135	526
	18 000	399	261	165	76	-9	404
3200 lb (1452 kg)	0	1069	1035	1012	991	970	1012
	2000	1037	1004	981	960	940	987
	4000	1005	973	950	930	910	962
	6000	973	942	920	899	880	937
	8000	942	911	889	869	850	912
	10 000	910	880	859	839	820	887
	12 000	879	849	828	809	790	862
	14 000	788	643	543	448	360	734
	16 000	635	492	394	301	214	610
	18 000	481	342	245	154	69	486
2800 lb (1270 kg)	0	1157	1125	1103	1082	1063	1103
	2000	1127	1095	1074	1053	1034	1079
	4000	1096	1065	1044	1024	1005	1055
	6000	1066	1036	1015	995	977	1031
	8000	1036	1006	985	966	948	1007
	10 000	1006	976	956	937	919	983
	12 000	976	947	927	908	891	959
	14 000	885	737	635	540	450	830
	16 000	729	584	484	390	302	704
	18 000	573	431	333	241	155	578

Weight	Press Alt (ft)	Rate of Climb (ft/min)					
		Outside Air Temperature					
		-20°C	0°C	15°C	30°C	45°C	ISA
		-29°F	32°F	59°F	86°F	113°F	
2400 lb (1089 kg)	0	1259	1228	1207	1188	1169	1207
	2000	1230	1200	1179	1160	1142	1185
	4000	1201	1171	1151	1132	1114	1162
	6000	1172	1143	1123	1104	1087	1139
	8000	1143	1115	1095	1077	1060	1116
	10 000	1114	1087	1067	1049	1032	1093
	12 000	1086	1059	1040	1022	1005	1070
	14 000	994	844	740	643	551	938
	16 000	835	688	586	490	401	810
	18 000	677	532	432	339	250	682

5.3.2 Take-Off Configuration Climb

Associated conditions:

Power: Maximum Continuous
Engine Speed: 2500 RPM
Airspeed: 71 KIAS
Flaps: 14°
Cowl Flap: OPEN

Sea Level Gradient of Climb: 10.4% (1:9.57)

5.3.3 Landing Configuration Climb

Associated conditions:

Power: Full Throttle
Engine Speed: 2500 RPM
Airspeed: 71 KIAS
Flap: 38°

Sea Level Gradient of Climb: 7.4% (1:13.4)

5.4 LANDING

5.4.1 Overweight Landing

Should an overweight landing (i.e. above 1814 kg (4000 lb)) be required, the landing distance may be up to 10% greater than the distance published in paragraph 5.4 of the Flight Manual at 1814 kg (4000 lb).

The landing technique presented in paragraph 5.4 of the Flight Manual remains valid. The potential for structural damage may be reduced by attempting to minimise the sink rate at touchdown, noting that a prolonged flare shall increase the landing distance required.

In the event of a missed approach, the gradient of climb stated in paragraph 5.3.3 of this supplement is applicable, having been determined for the aircraft at the maximum take-off weight.

After an overweight landing, a heavy landing inspection (in accordance with Section 5-40-20 of the Service Manual) should be carried out by a suitably qualified person.

5.6 STALL SPEEDS

Associated conditions:

Power: Idle
Centre Of Gravity: Forward Limit
Weight: 1905 kg (4200 lb)

	Angle of Bank							
	0°		30°		45°		60°	
Flaps	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
Up	66	64	68	69	74	76	87	90
14°	64	61	65	65	70	72	84	86
38°	61	57	62	61	66	67	76	80

NOTE:

KIAS values are approximate and are based on level flight airspeed calibration data.

NOTE:

Stalling speeds will reduce as weight is reduced and as the centre of gravity is moved aft.

NOTE:

Height loss during a straight and level stall may be up to 300 ft in some aircraft configurations.

SECTION 6 – WEIGHT & BALANCE / EQUIPMENT LIST

6.3 LOADING SYSTEM

The loading charts on the following pages will assist the pilot in ensuring that the aircraft is operated within the prescribed weight and centre of gravity limitations. Two formats of charts are provided. The first is the Loading Trim Sheet, which uses graphical evaluation for the centre of gravity and the second is a Loading Envelope Chart that allows direct computation of the centre of gravity. Both formats of charts are supplied in combined passenger/freight and freighter configurations. These are given in metric and imperial units. It is at the pilot's discretion as to which is the more appropriate loading chart to use for any particular flight

The cabin is divided into 6 sections for weight and balance purposes (the cargo pod, if fitted, has an additional 2 sections – refer to Supplement C01-04-87 or C01-04-34 for further information). The aft luggage bin net (P/N GA8-255011-9) must be in place whenever any articles are carried in the aft luggage bin or on the cabin baggage shelf. Ensure the local limitations of each area and restraint requirements stipulated in Section 6.4 of this manual are followed during loading

6.3.1 Procedure for the Loading Trim Sheet

Rows of the Loading Trim Sheet for the carriage of crew and passengers are divided into two scales. The first scale is 77 kg per division (170 lb per division for imperial trim sheet) corresponding to the standard person weight. The second scale is 50 kg per division (100 lb per division for imperial trim sheet), which can also be used when a passenger and freight occupy the same row. See example loading on the PAX/Freighter Loading Trim Sheet. A scale of 50 litres or 72 kg per division (20 US gallons or 100 lb per division for imperial trim sheet) is provided for fuel calculations.

1. Write weights of aircraft, pilot, passengers, cargo and fuel in each of the appropriate boxes down the right hand side of the sheet.
2. Add the aircraft basic weight, pilot, passengers and cargo to obtain a Zero Fuel Weight subtotal. (The current aircraft basic weight and basic index can be found on the Aircraft Load Data Sheet contained in this manual)
3. Add the fuel weight to this subtotal to obtain the Aircraft Take-off Weight. Ensure the Take-off Weight does not exceed the Aircraft Maximum Take-off Weight.
4. Subtract the fuel weight to destination to obtain the Landing Weight. Ensure the Landing Weight does not exceed the Aircraft Maximum Landing Weight
5. On the Centre of Gravity Moment Chart draw two horizontal lines equating to the Take-off Weight and Zero Fuel Weight.
6. Mark the Aircraft Basic Index Unit at the top of the sheet and drop a line down to the Row 1 scales.
7. Count across, to the right, the number of divisions equivalent to the weight listed for Row 1. From this point, drop a line down to the next row scale and count across, to the right, the number of divisions equivalent to the weight listed for that row.
8. Repeat Step 7 for all appropriate rows remembering that either or both divisions can be used for any one row.

9. From the final item drop a line down on to the Centre of Gravity Moment Chart to meet the Zero Fuel Weight.
10. In the fuel section, count across to the right the number of divisions equivalent to the quantity or weight of fuel and drop a line down on to the Centre of Gravity Moment Chart to meet the Take-off Weight.
11. If both of these two intersections are within the unhatched area of the graph, the aircraft will remain inside the Weight and Centre of Gravity envelope for all fuel states.

6.3.2 Procedure for the Loading Envelope Chart

1. Write the Aircraft's Basic Weight, Arm, and Moment (Index) that corresponds to the desired configuration contained on the Aircraft Load Data Sheet supplied with this manual.
2. Write the total Weight in each section under the Weight heading in the appropriate boxes
3. Next to the Zero Fuel write the sum of all the Weights in each section and the Basic Weight under the Weight heading.
4. Write the Take-off fuel Weight and add this to the Zero Fuel Weight to obtain the Take-off Weight. Ensure this does not exceed the Aircraft Maximum Take-off Weight.
5. Write in the Trip fuel Weight and deduct this from the Take-off weight to obtain the Landing Weight. Ensure this does not exceed the Aircraft Maximum Landing Weight.
6. For each section multiply the Weight by the Arm given on the sheet and write the result under the Moment heading in the appropriate boxes.
7. Next to the Zero Fuel write the sum of all the moments in each section and the Basic Moment under the Moment heading.
8. Divide the Zero Fuel Moment by the Zero Fuel Weight and write the result next to Zero Fuel Centre of Gravity.
9. Multiply the Take-off Fuel Weight by the Arm given on the sheet and write the result under the moment heading in the appropriate box.
10. Next to the Take-off write the sum of the Zero Fuel Moment and the Take-off Fuel Moment under the Moment heading.
11. Divide the Take-off Moment by the Take-off Weight and write the result next to Take-off Centre of Gravity.
12. On the Centre of Gravity Envelope draw two horizontal lines corresponding to the Zero Fuel Weight and the Take-off Weight. Then draw two vertical lines corresponding to the Zero Fuel Centre of Gravity and the Take-off Centre of Gravity. If the intersection of the Zero Fuel Weight with the Zero Fuel Centre of Gravity lines and the Take-off Weight with the Take-off Centre of Gravity lines occur inside the envelope, the aircraft will remain within the required Centre of Gravity limitations for all fuel states.

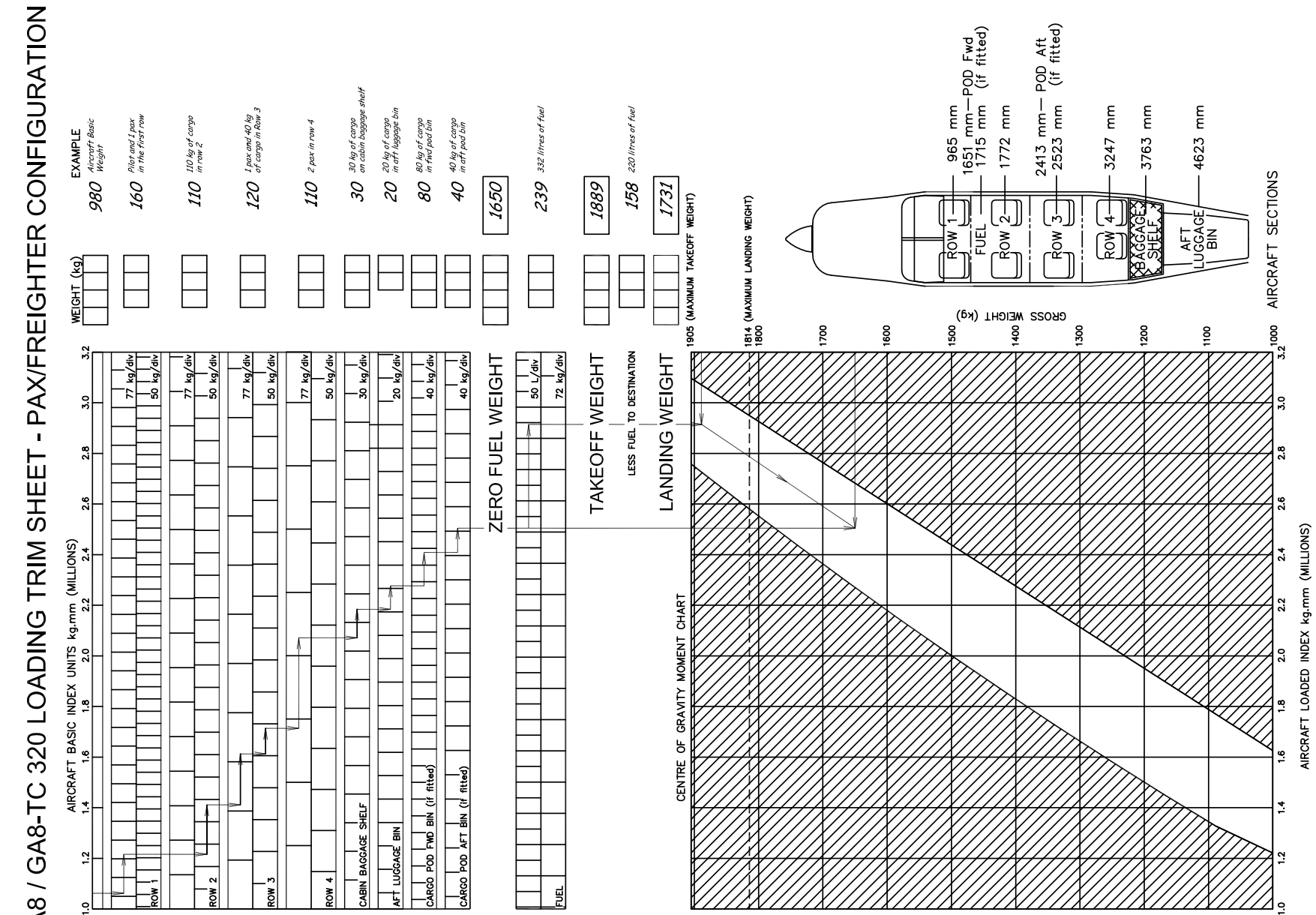
GA8 / GA8-TC 320 LOADING TRIM SHEET - PAX/FREIGHTER CONFIGURATION
EXAMPLE
WEIGHT (kg)
980 Aircraft Basic Weight
160 Pilot and 1 pax in the first row
110 110 kg of cargo in row 2
120 1 pax and 40 kg of cargo in Row 3
110 2 pax in row 4
30 30 kg of cargo on cabin baggage shelf
20 20 kg of cargo in aft luggage bin
80 80 kg of cargo in fwd pod bin
40 40 kg of cargo in aft pod bin
1650 ZERO FUEL WEIGHT
239 332 litres of fuel
1889 TAKEOFF WEIGHT
LESS FUEL TO DESTINATION
158 220 litres of fuel
1731 LANDING WEIGHT
AIRCRAFT BASIC INDEX UNITS kg.mm (MILLIONS)
ROW 1
ROW 2
ROW 3
ROW 4
CABIN BAGGAGE SHELF
AFT LUGGAGE BIN
CARGO POD FWD BIN (if fitted)
CARGO POD AFT BIN (if fitted)
FUEL
77 kg/div
50 kg/div
30 kg/div
20 kg/div
40 kg/div
50 L/div
72 kg/div
CENTRE OF GRAVITY MOMENT CHART
1905 (MAXIMUM TAKEOFF WEIGHT)
1814 (MAXIMUM LANDING WEIGHT)
GROSS WEIGHT (kg)
AIRCRAFT LOADED INDEX kg.mm (MILLIONS)
AIRCRAFT SECTIONS
965 mm
1651 mm — POD Fwd (if fitted)
1715 mm
1772 mm
2413 mm — POD Aft (if fitted)
2523 mm
3247 mm
3763 mm
4623 mm
ROW 1
FUEL
ROW 2
ROW 3
ROW 4
BAGGAGE SHELF
AFT LUGGAGE BIN

Figure 6-1

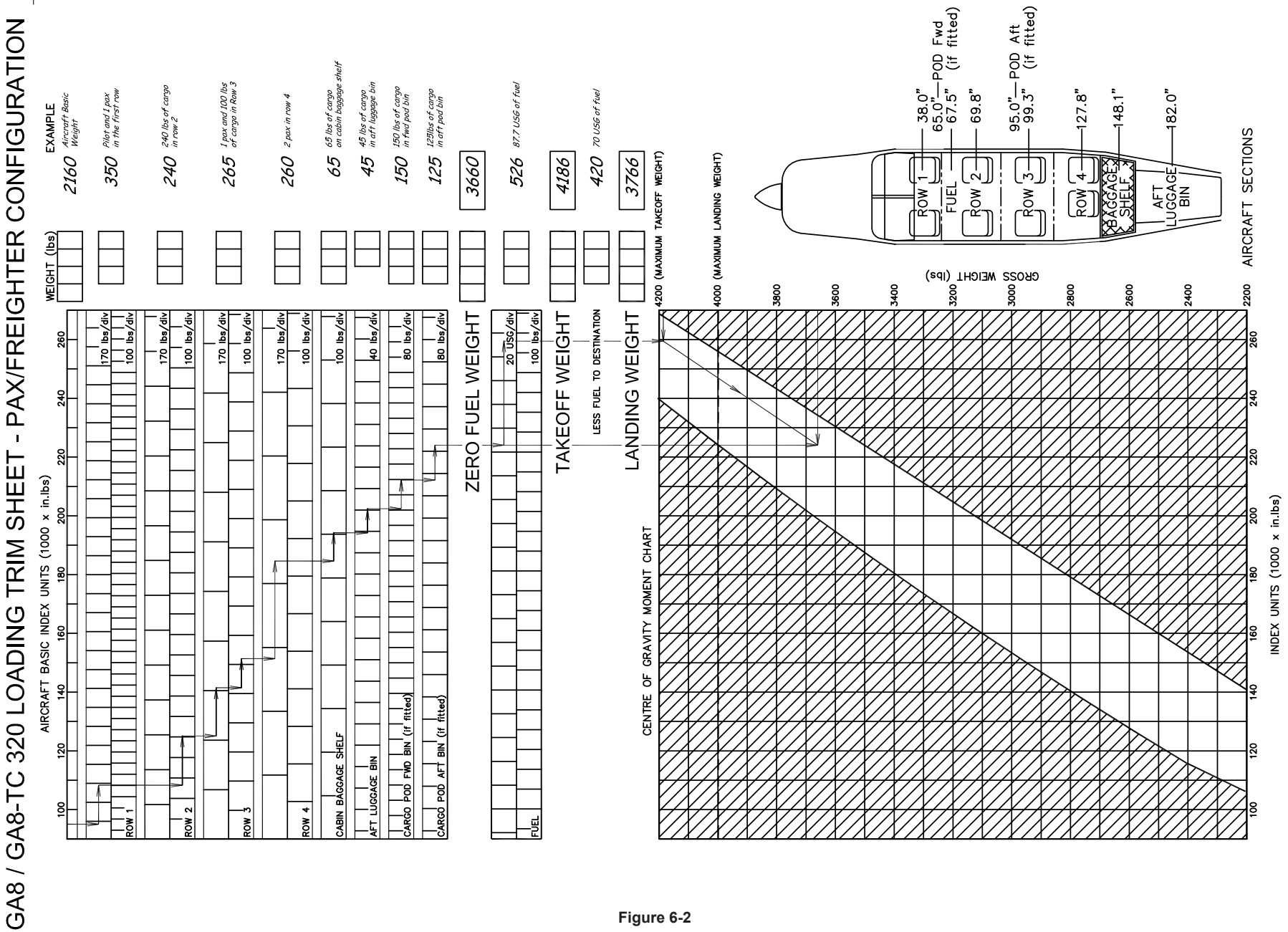
GA8 / GA8-TC 320 LOADING TRIM SHEET - PAX/FREIGHTER CONFIGURATION
AIRCRAFT BASIC INDEX UNITS (1000 x in.lbs)
WEIGHT (lbs)
EXAMPLE
2160 Aircraft Basic Weight
350 Pilot and 1 pax in the first row
240 240 lbs of cargo in row 2
265 1 pax and 100 lbs of cargo in Row 3
260 2 pax in row 4
65 65 lbs of cargo on cabin baggage shelf
45 45 lbs of cargo in aft luggage bin
150 150 lbs of cargo in fwd pod bin
125 125lbs of cargo in aft pod bin
3660
526 87.7 USG of fuel
4186
420 70 USG of fuel
3766
ROW 1
ROW 2
ROW 3
ROW 4
CABIN BAGGAGE SHELF
AFT LUGGAGE BIN
CARGO POD FWD BIN (if fitted)
CARGO POD AFT BIN (if fitted)
FUEL
ZERO FUEL WEIGHT
TAKEOFF WEIGHT
LESS FUEL TO DESTINATION
LANDING WEIGHT
CENTRE OF GRAVITY MOMENT CHART
4200 (MAXIMUM TAKEOFF WEIGHT)
4000 (MAXIMUM LANDING WEIGHT)
GROSS WEIGHT (lbs)
INDEX UNITS (1000 x in.lbs)
AIRCRAFT SECTIONS
38.0"
65.0" POD Fwd (if fitted)
67.5"
69.8"
95.0" POD Aft (if fitted)
99.3"
127.8"
148.1"
182.0"
BAGGAGE SHELF
AFT LUGGAGE BIN

Figure 6-2

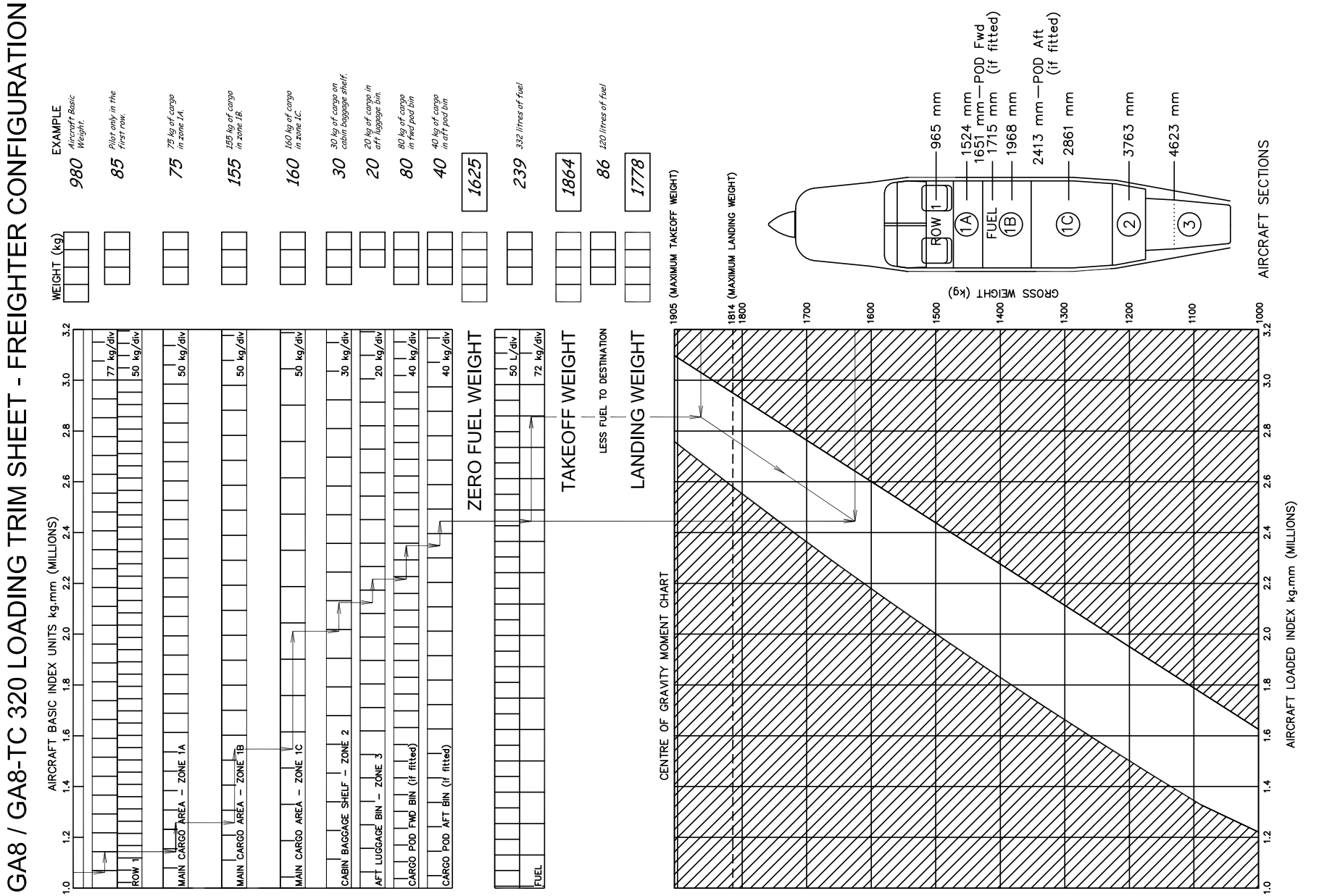
GA8 / GA8-TC 320 LOADING TRIM SHEET - FREIGHTER CONFIGURATION
EXAMPLE
980 Aircraft Basic Weight.
85 Pilot only in the first row.
75 75 kg of cargo in zone 1A.
155 155 kg of cargo in zone 1B.
160 160 kg of cargo in zone 1C.
30 30 kg of cargo on cabin baggage shelf.
20 20 kg of cargo in aft luggage bin.
80 80 kg of cargo in fwd pod bin
40 40 kg of cargo in aft pod bin
1625
239 332 litres of fuel
1864
86 120 litres of fuel
1778
WEIGHT (kg)
AIRCRAFT BASIC INDEX UNITS kg.mm (MILLIONS)
ROW 1
MAIN CARGO AREA – ZONE 1A
MAIN CARGO AREA – ZONE 1B
MAIN CARGO AREA – ZONE 1C
CABIN BAGGAGE SHELF – ZONE 2
AFT LUGGAGE BIN – ZONE 3
CARGO POD FWD BIN (if fitted)
CARGO POD AFT BIN (if fitted)
FUEL
ZERO FUEL WEIGHT
TAKEOFF WEIGHT
LESS FUEL TO DESTINATION
LANDING WEIGHT
CENTRE OF GRAVITY MOMENT CHART
1905 (MAXIMUM TAKEOFF WEIGHT)
1814 (MAXIMUM LANDING WEIGHT)
GROSS WEIGHT (kg)
AIRCRAFT LOADED INDEX kg.mm (MILLIONS)
965 mm
1524 mm
1651 mm—POD Fwd (if fitted)
1715 mm
1968 mm
2413 mm—POD Aft (if fitted)
2861 mm
3763 mm
4623 mm
AIRCRAFT SECTIONS

Figure 6-3

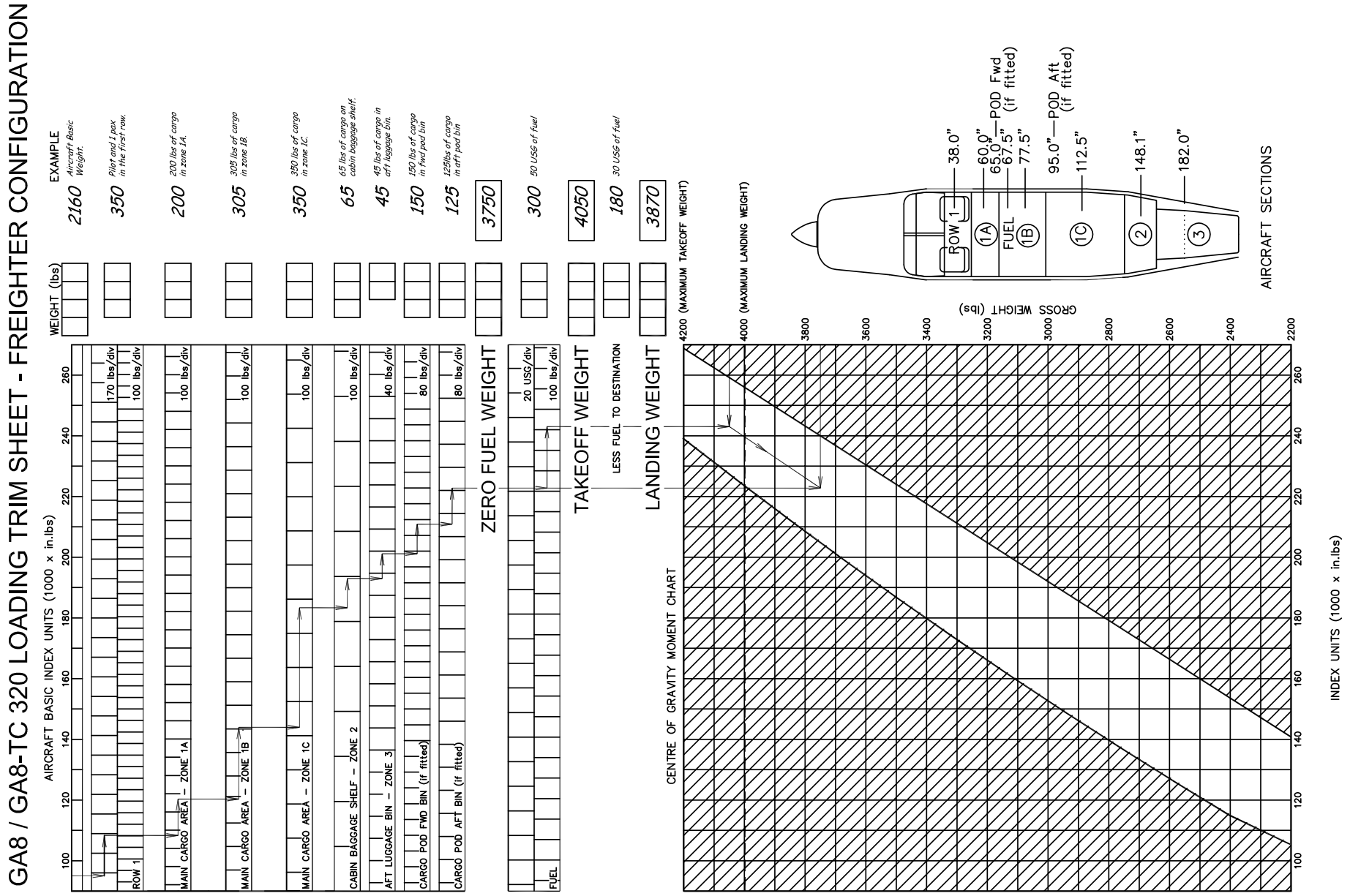
GA8 / GA8-TC 320 LOADING TRIM SHEET - FREIGHTER CONFIGURATION
AIRCRAFT BASIC INDEX UNITS (1000 x in.lbs)
WEIGHT (lbs)
EXAMPLE
2160 Aircraft Basic Weight.
350 Pilot and 1 pax in the first row.
200 200 lbs of cargo in zone 1A.
305 305 lbs of cargo in zone 1B.
350 350 lbs of cargo in zone 1C.
65 65 lbs of cargo on cabin baggage shelf.
45 45 lbs of cargo in aft luggage bin.
150 150 lbs of cargo in fwd pod bin
125 125lbs of cargo in aft pod bin
3750
300 50 USG of fuel
4050
180 30 USG of fuel
3870
ROW 1
MAIN CARGO AREA – ZONE 1A
MAIN CARGO AREA – ZONE 1B
MAIN CARGO AREA – ZONE 1C
CABIN BAGGAGE SHELF – ZONE 2
AFT LUGGAGE BIN – ZONE 3
CARGO POD FWD BIN (if fitted)
CARGO POD AFT BIN (if fitted)
FUEL
ZERO FUEL WEIGHT
TAKEOFF WEIGHT
LESS FUEL TO DESTINATION
LANDING WEIGHT
CENTRE OF GRAVITY MOMENT CHART
4200 (MAXIMUM TAKEOFF WEIGHT)
4000 (MAXIMUM LANDING WEIGHT)
GROSS WEIGHT (lbs)
INDEX UNITS (1000 x in.lbs)
AIRCRAFT SECTIONS
38.0"
60.0"
65.0" POD Fwd (if fitted)
67.5"
77.5"
95.0" POD Aft (if fitted)
112.5"
148.1"
182.0"
ROW 1
1A
FUEL
1B
1C
2
3

Figure 6-4

GA8 / GA8-TC 320 LOADING TRIM SHEET - PAX/FREIGHT CONFIGURATION (METRIC)

	WEIGHT (kg)		ARM (mm)		MOMENT (kg.mm)
Aircraft Basic Weight, Arm & Moment.					
Row 1		X	965 mm	=	
Row 2		X	1772 mm	=	
Row 3		X	2523 mm	=	
Row 4		X	3247 mm	=	
Baggage Shelf **Max: 113 kg**		X	3763 mm	=	
Aft Luggage Bin **Max: 22 kg**		X	4623 mm	=	
Cargo Pod FWD **Max: 120 kg**		X	1651 mm	=	
Cargo Pod AFT **Max: 100 kg**		X	2413 mm	=	
Total Cargo Pod Max: 200 kg					
ZERO FUEL	(Sum of Weight Column)				(Sum of Moment Column)
ZERO FUEL CENTRE OF GRAVITY		- Division of Zero Fuel Moment by Zero Fuel Weight			
Take-Off Fuel		X	1715 mm	=	
TAKE-OFF Max: 1905 kg	(Sum of Zero Fuel Weight & Take-Off Fuel)				(Sum of Zero Fuel Moment & Take-Off Fuel Moment)
TAKE-OFF CENTRE OF GRAVITY		- Division of Take-Off Moment by Take-Off Weight			
Trip Fuel					
LANDING Max: 1814 kg		- Deduct Trip Fuel from Take-Off Weight			

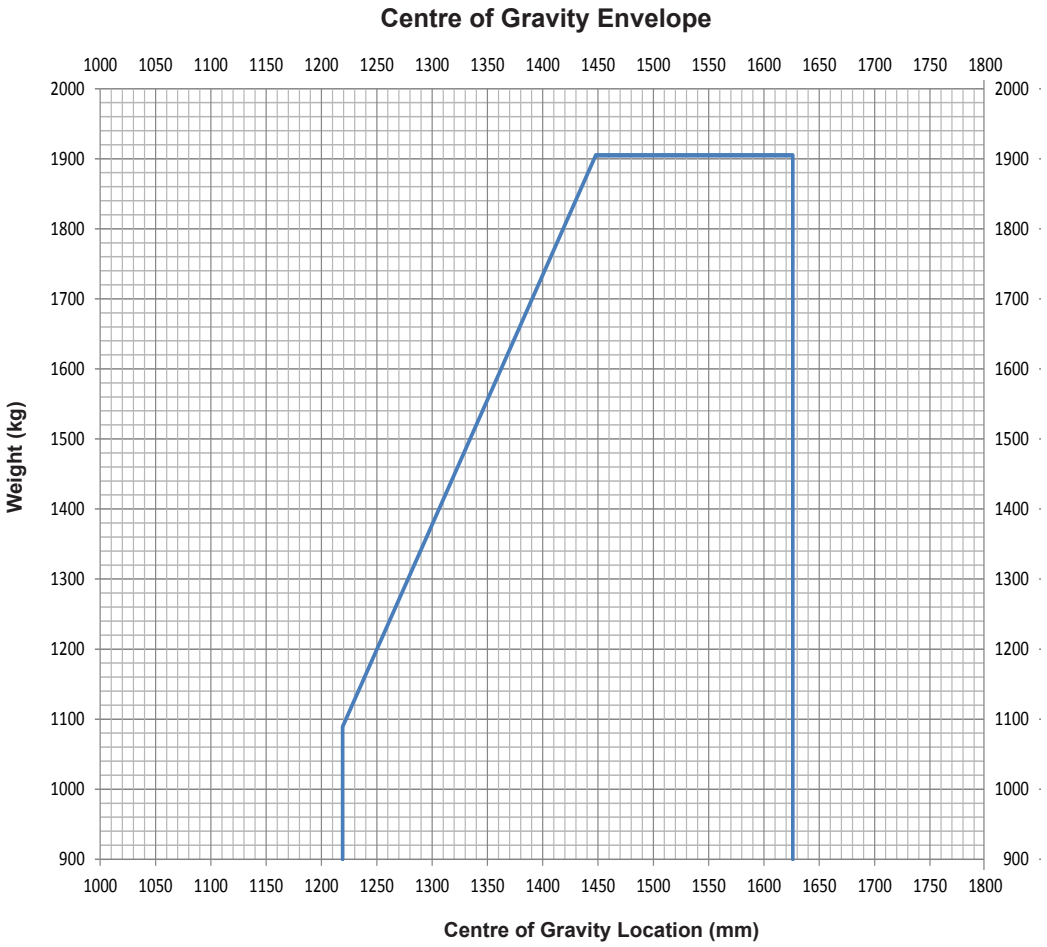

Figure 6-5

GA8 / GA8-TC 320 LOADING TRIM SHEET - PAX/FREIGHT CONFIGURATION (IMPERIAL)

	WEIGHT (lb)		ARM (in)		MOMENT (lb.in)
Aircraft Basic Weight, Arm & Moment.					
Row 1		X	38 in	=	
Row 2		X	69.8 in	=	
Row 3		X	99.3 in	=	
Row 4		X	127.8 in	=	
Baggage Shelf **Max: 250 lb**		X	148.1 in	=	
Aft Luggage Bin **Max: 50 lb**		X	182 in	=	
Cargo Pod FWD **Max: 264 lb**		X	65 in	=	
Cargo Pod AFT **Max: 220 lb**		X	95 in	=	
Total Cargo Pod Max: 440 lb					
ZERO FUEL	(Sum of Weight Column)				(Sum of Moment Column)
ZERO FUEL CENTRE OF GRAVITY		- Division of Zero Fuel Moment by Zero Fuel Weight			
Take-Off Fuel		X	67.5 in	=	
TAKE-OFF Max: 4200 lb	(Sum of Zero Fuel Weight & Take-Off Fuel)				(Sum of Zero Fuel Moment & Take-Off Fuel Moment)
TAKE-OFF CENTRE OF GRAVITY		- Division of Take-Off Moment by Take-Off Weight			
Trip Fuel					
LANDING Max: 4000 lb		- Deduct Trip Fuel from Take-Off Weight			

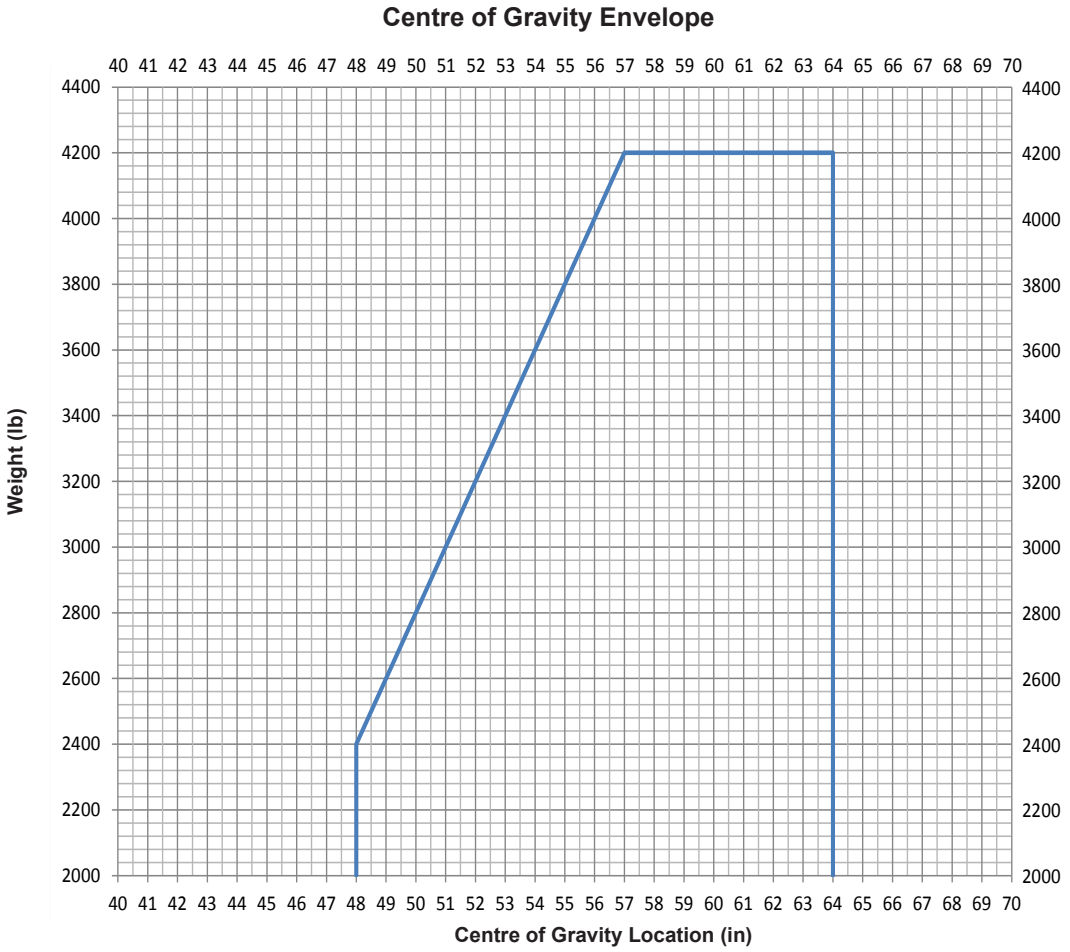

Figure 6-6

GA8 / GA8-TC 320 LOADING TRIM SHEET - FREIGHTER CONFIGURATION (METRIC)

	WEIGHT (kg)		ARM (mm)		MOMENT (kg.mm)
Aircraft Basic Weight, Arm & Moment.					
Row 1		X	965 mm	=	
Zone 1A		X	1524 mm	=	
Zone 1B		X	1968 mm	=	
Zone 1C Combined Zone 1 **Max: 680 kg**		X	2861 mm	=	
Zone 2 **Max: 113 kg**		X	3763 mm	=	
Aft Luggage Bin **Max: 22 kg**		X	4623 mm	=	
Cargo Pod FWD **Max: 120 kg**		X	1651 mm	=	
Cargo Pod AFT **Max: 100 kg**		X	2413 mm	=	
Total Cargo Pod **Max: 200 kg**					
ZERO FUEL	(Sum of Weight Column)				(Sum of Moment Column)
ZERO FUEL CENTRE OF GRAVITY		- Division of Zero Fuel Moment by Zero Fuel Weight			
Take-Off Fuel		X	1715 mm	=	
TAKE-OFF **Max: 1905 kg**	(Sum of Zero Fuel Weight & Take-Off Fuel)				(Sum of Zero Fuel Moment & Take-Off Fuel Moment)
TAKE-OFF CENTRE OF GRAVITY		- Division of Take-Off Moment by Take-Off Weight			
Trip Fuel					
LANDING **Max: 1814 kg**	- Deduct Trip Fuel from Take-Off Weight				

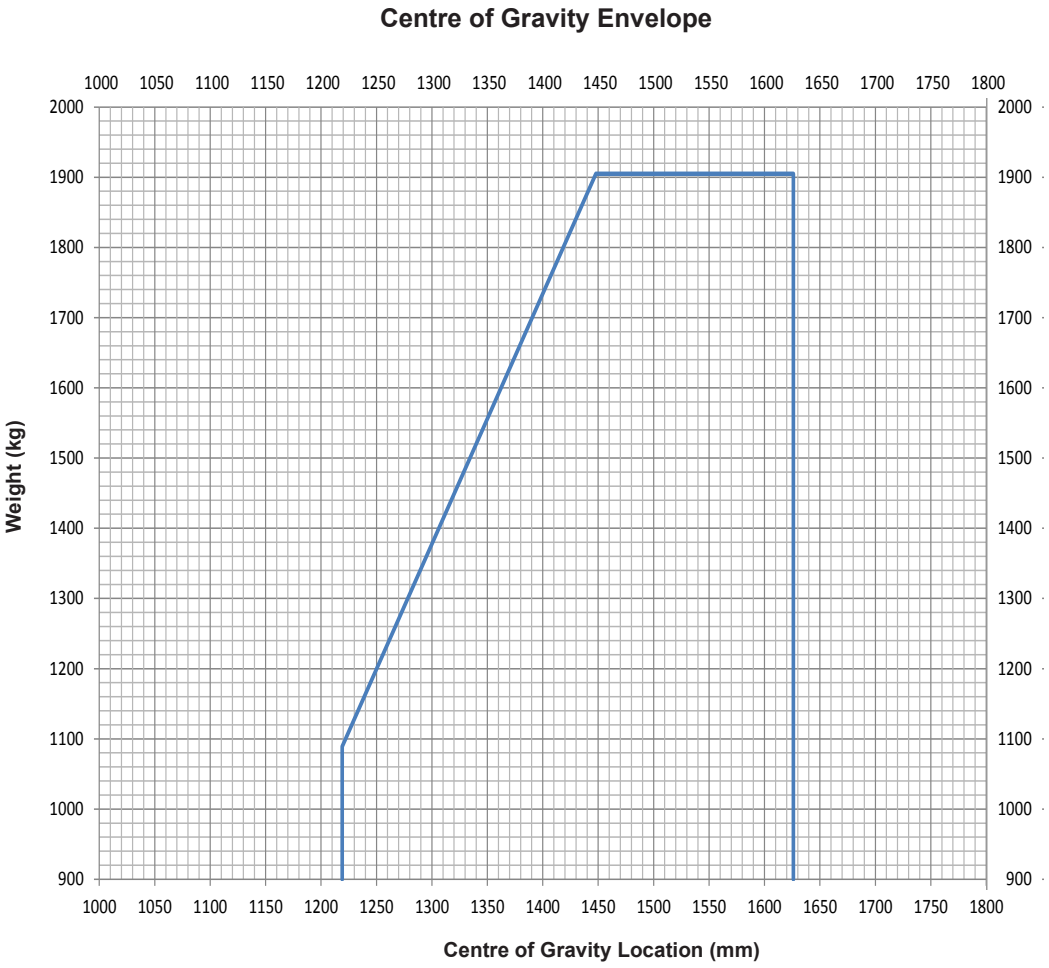

Figure 6-7

GA8 / GA8-TC 320 LOADING TRIM SHEET - FREIGHTER CONFIGURATION (IMPERIAL)

	WEIGHT (lb)		ARM (in)		MOMENT (lb.in)
Aircraft Basic Weight, Arm & Moment.					
Row 1		X	38 in	=	
Zone 1A		X	60 in	=	
Zone 1B		X	77.5 in	=	
Zone 1C Combined Zone 1 **Max: 1500 lb**		X	112.5 in	=	
Zone 2 **Max: 250 lb**		X	148.1 in	=	
Aft Luggage Bin **Max: 50 lb**		X	182 in	=	
Cargo Pod FWD **Max: 264 lb**		X	65 in	=	
Cargo Pod AFT **Max: 220 lb**		X	95 in	=	
Total Cargo Pod **Max: 440 lb**					
ZERO FUEL	(Sum of Weight Column)				(Sum of Moment Column)
ZERO FUEL CENTRE OF GRAVITY		- Division of Zero Fuel Moment by Zero Fuel Weight			
Take-Off Fuel		X	67.5 in	=	
TAKE-OFF **Max: 4200 lb**	(Sum of Zero Fuel Weight & Take-Off Fuel)				(Sum of Zero Fuel Moment & Take-Off Fuel Moment)
TAKE-OFF CENTRE OF GRAVITY		- Division of Take-Off Moment by Take-Off Weight			
Trip Fuel					
LANDING **Max: 4000 lb**	- Deduct Trip Fuel from Take-Off Weight				

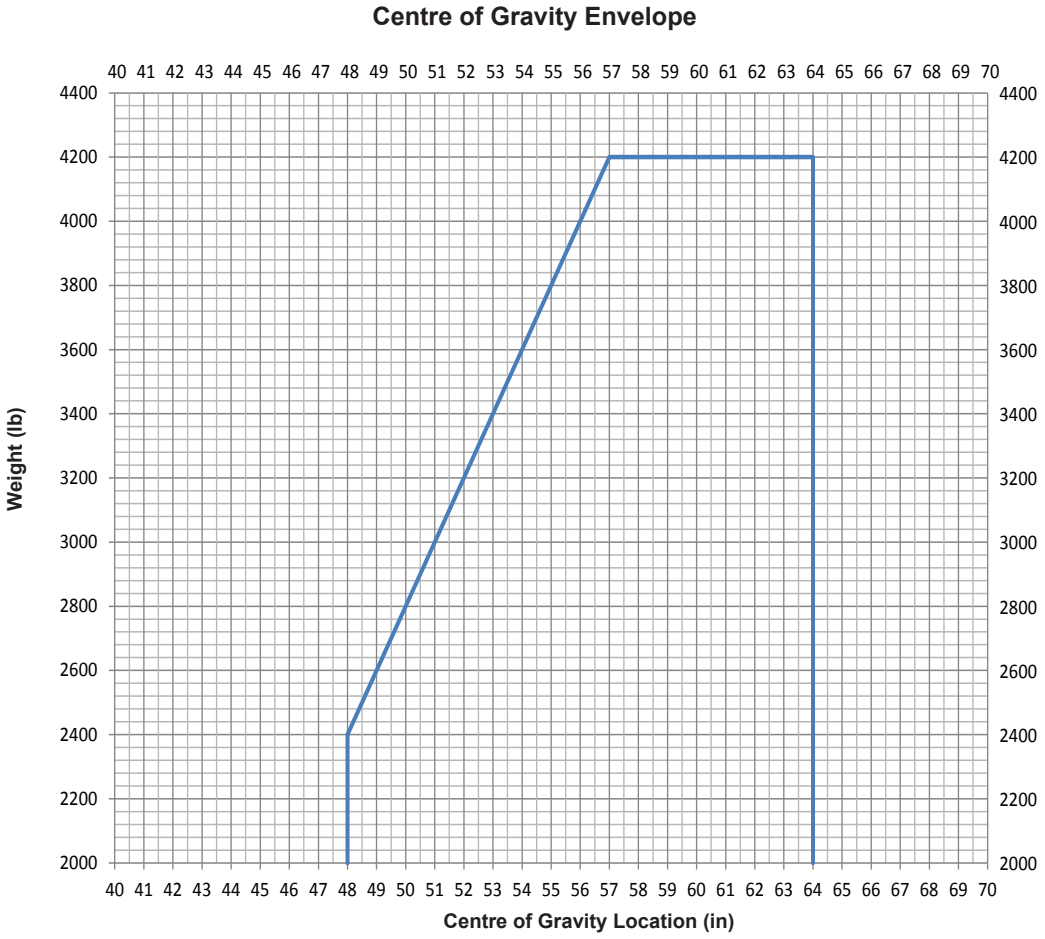

Figure 6-8

SECTION 7 – SYSTEM DESCRIPTION

No change – refer to the basic POH.

SECTION 8 – AIRCRAFT HANDLING, SERVICING AND MAINTENANCE

No change – refer to the basic POH.

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