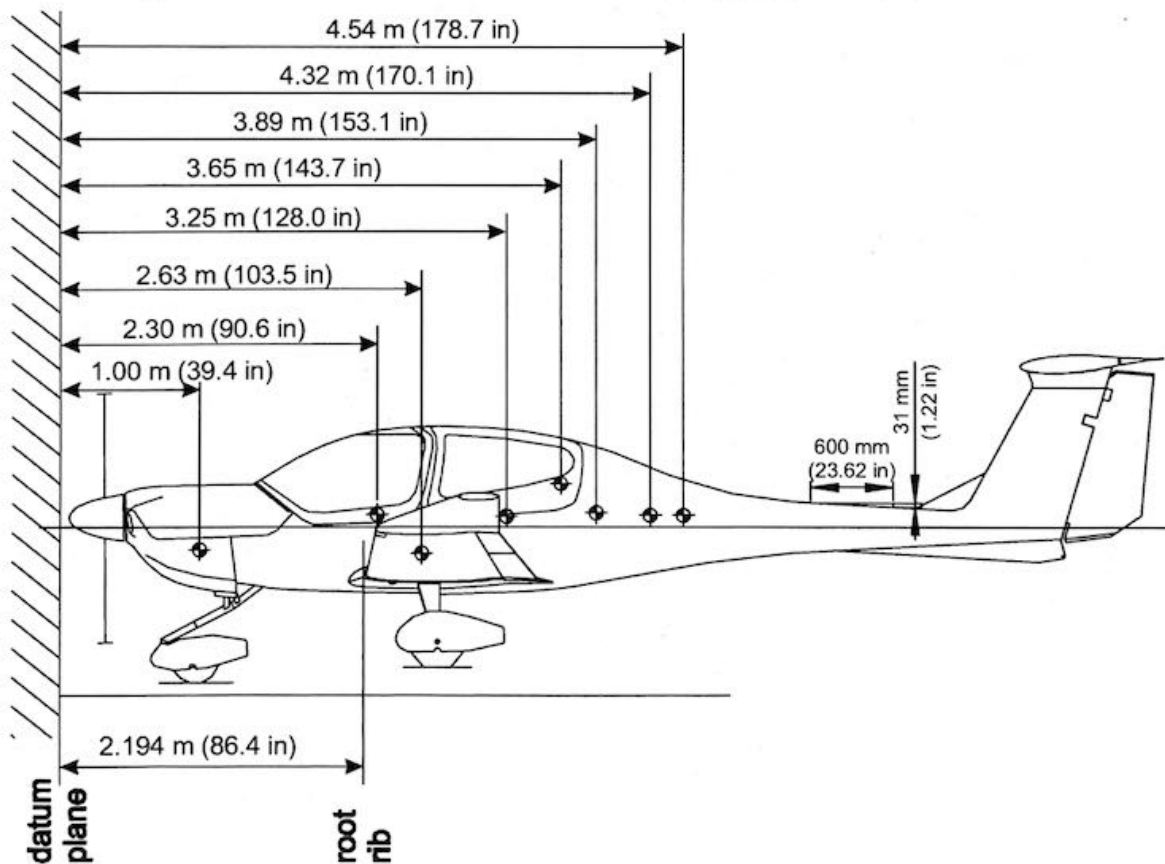


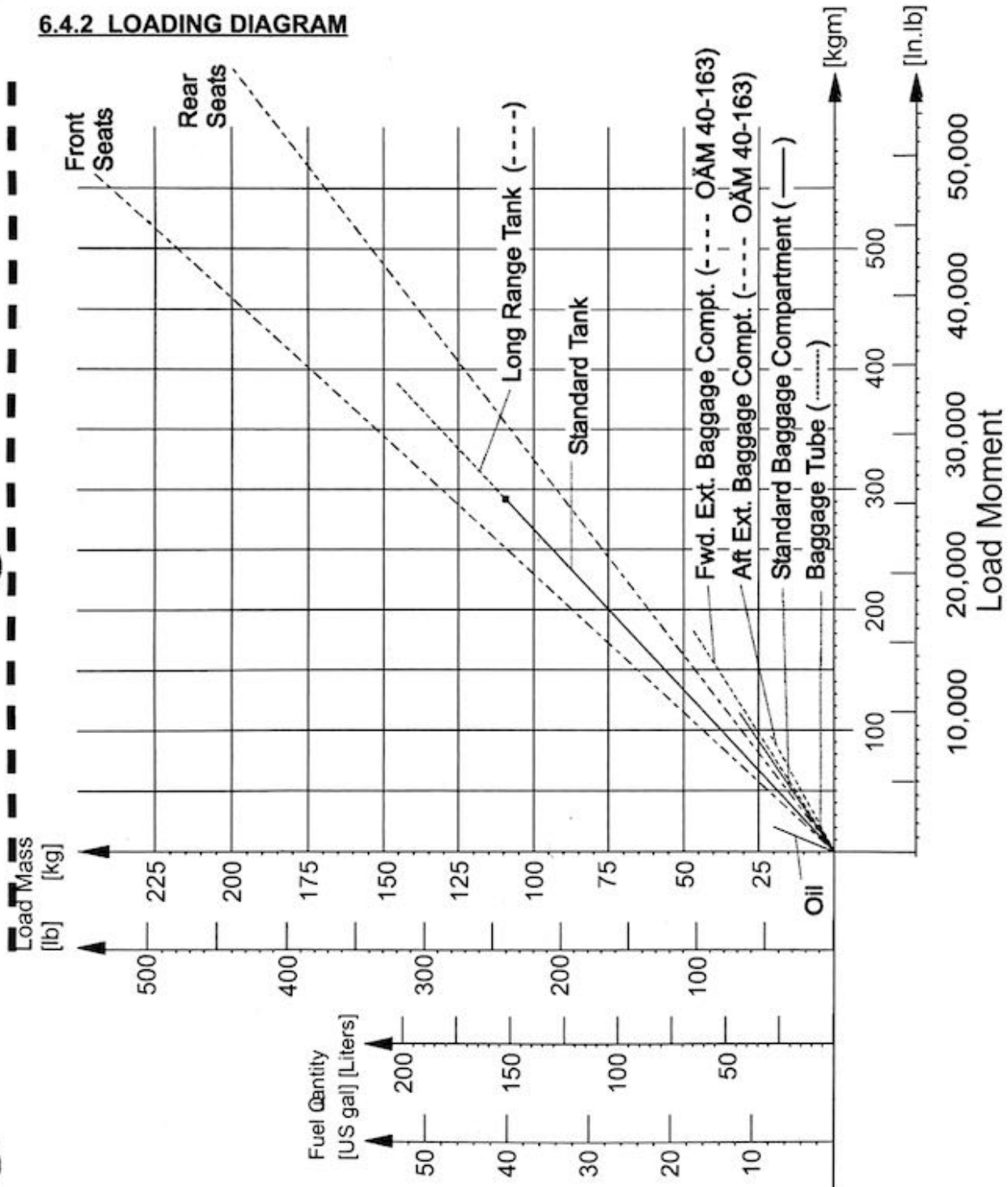
6.4.1 MOMENT ARMS

The most important lever arms aft of the Datum Plane:

- Oil	:	1.00 m	39.4 in
- Front seats	:	2.30 m	90.6 in
- Rear seats	:	3.25 m	128.0 in
- Wg tanks (Standard & Long Range)	:	2.63 m	103.5 in
- Bggage in standard baggage compartment	:	3.65 m	143.7 in
baggage in baggage tube	:	4.32 m	170.1 in
- Bggage in extended baggage compartment			
forward part	:	3.89 m	153.1 in
aft part	:	4.54 m	178.7 in

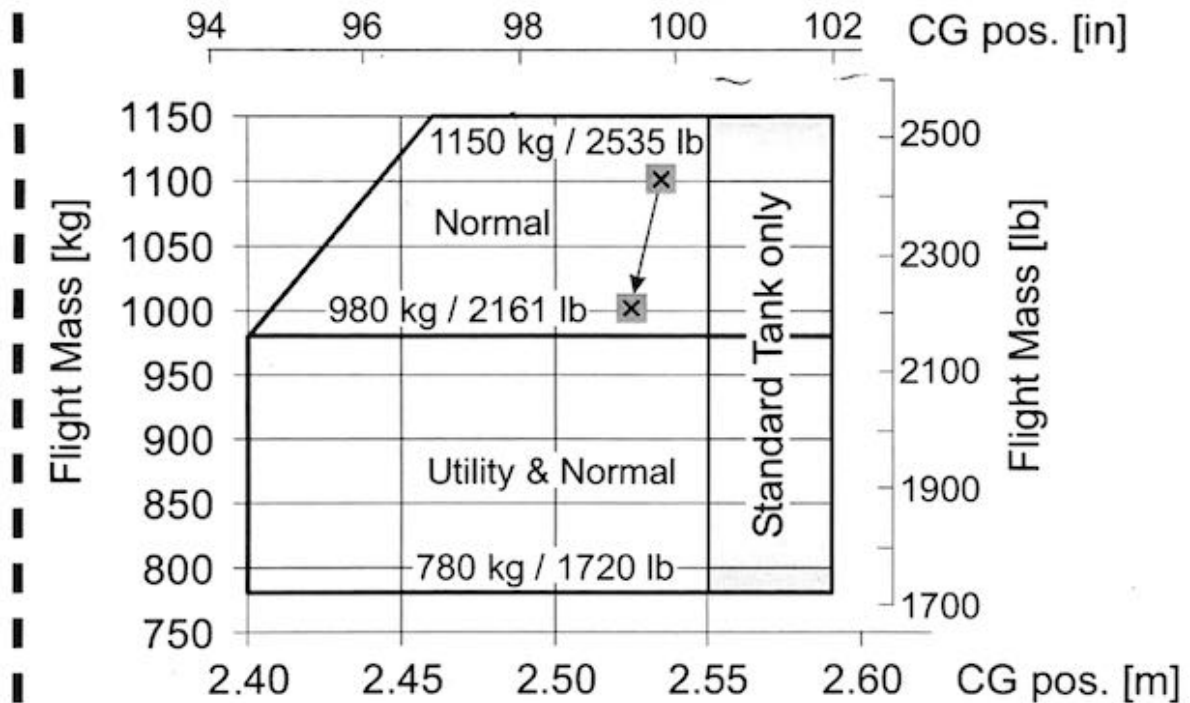


6.4.2 LOADING DIAGRAM



		DA 40 (Example)		Your DA 40	
		Mass [kg] <i>[lb]</i>	Moment [kg m] <i>[in lb]</i>	Mass [kg] <i>[lb]</i>	Moment [kg m] <i>[in lb]</i>
1	Empty mass (from Mass and Balance Report)	735 <i>1620</i>	1760 <i>152,762</i>		
2	Oil not added Lever arm:1.00 m <i>(39.4 in)</i>	-1.7 <i>-4</i>	-1.7 <i>-158</i>		
3	Front seats Lever arm:2.30 m <i>(90.6 in)</i>	150 <i>331</i>	345 <i>29,989</i>		
4	Rear seats Lever arm:3.25 m <i>(128.0 in)</i>	75 <i>165</i>	243.8 <i>21,120</i>		
5	Standard baggage compt. Lever arm:3.65 m <i>(143.7 in)</i>	0 <i>0</i>	0 <i>0</i>		
	Baggage Tube Lever arm:4.32 m <i>(170.1 in)</i>	0 <i>0</i>	0 <i>0</i>		
6	Fwd. extended baggage compartment Lever arm:3.89 m <i>(153.1 in)</i>	27 <i>60</i>	105 <i>9,186</i>		
	Aft extended baggage compartment Lever arm:4.54 m <i>(178.7 in)</i>	18 <i>40</i>	81.7 <i>7,148</i>		
7	Total mass & total moment with empty fuel tanks (Total of 1.-6.)	1003.3 <i>2212</i>	2533.8 <i>220,047</i>		
8	Usable fuel Lever arm:2.63 m <i>(103.5 in)</i>	99.4 <i>219</i>	261.4 <i>22,667</i>		
9	Total mass & total moment including fuel (7. plus 8.)	1102.7 <i>2431</i>	2795.2 <i>242,714</i>		
10	<p>The total moments from rows 7 and 9 (2533.8 and 2795.2 kgm) (<i>220,047 and 242,714 in.lb</i>) must be divided by the related total mass (1003.3 and 1102.7 kg respectively) (<i>2212 and 2431 lb</i>) and then located in Diagram 6.4.4 'PERMISSIBLE CENTER OF GRAVITY RANGE'.</p> <p>As in our example CG positions (2.525 m and 2.535 m respectively) (<i>99.48 and 99.84 in</i>) and masses fall into the permitted area, this loading condition is allowable.</p>				

6.4.4 PERMISSIBLE CENTER OF GRAVITY RANGE



The CG's shown in the diagram are those that from the example in Table 6.4.3 'CALCULATION OF LOADING CONDITION'.

Forward flight CG limit:

2.40 m (94.5 in) aft of Datum Plane at 780 to 980 kg (1720 to 2161 lb)

2.46 m (96.9 in) aft of Datum Plane at 1150 kg (2535 lb)

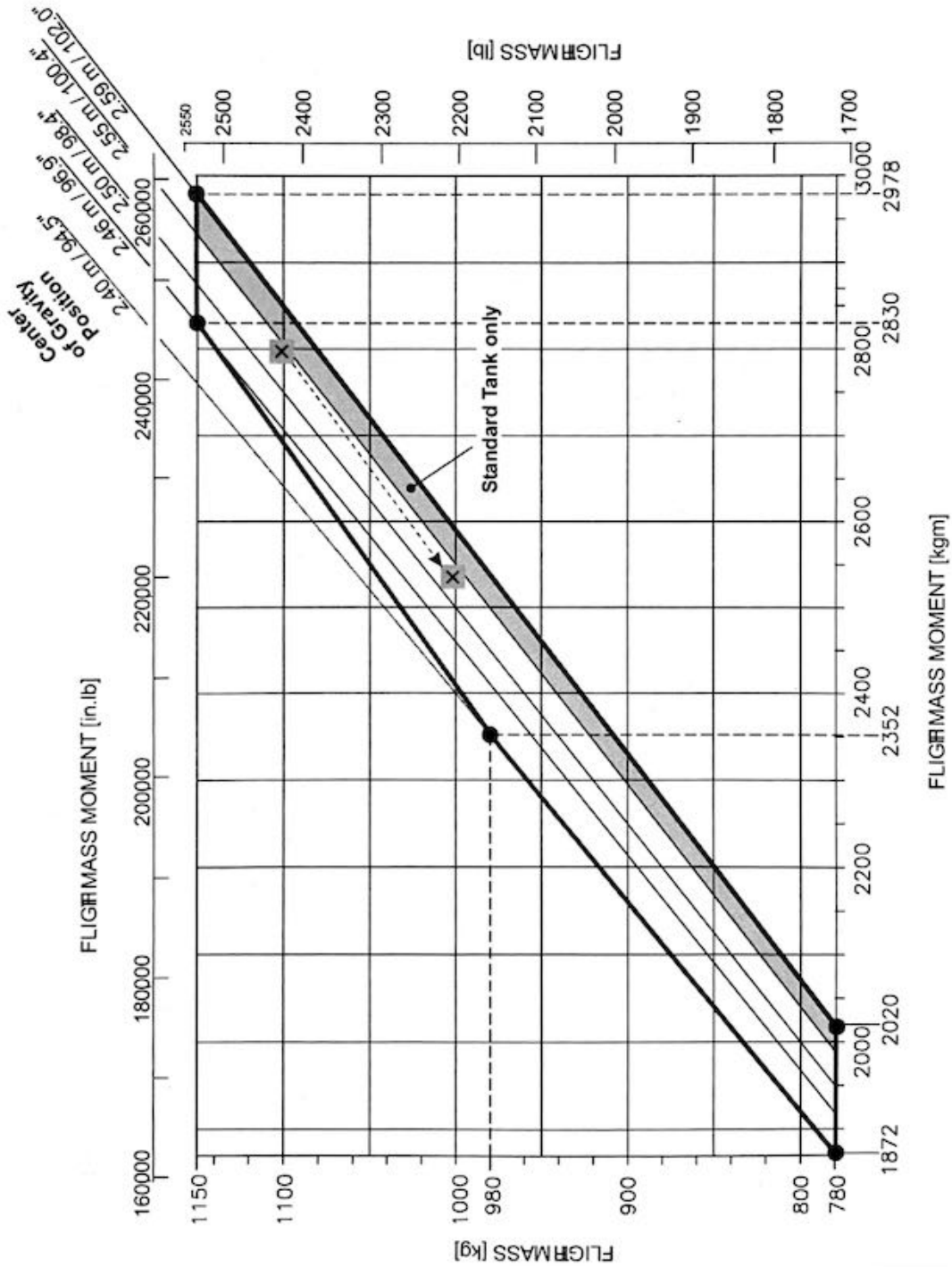
linear variation between these values

Rearward flight CG limit:

2.59 m (102.0 in) aft of Datum Plane (Standard Tank)

2.55 m (100.4 in) aft of Datum Plane (with Long Range Tank installed)

6.4.5 PERMISSIBLE MOMENT RANGE



AIRCRAFT WEIGHT & BALANCE - EQUIPMENT LIST REVISION

Aeroways Inc

131 N DUPONT HWY • NEW CASTLE, DE 19720

302-324-9970 www.flyadvanced.com

A/C N-NUMBER:	N859PA	DATE OF SUPERCEDED W&B:	11/7/2008
A/C MAKE:	DIAMOND	HOBBS	4208.7
A/C MODEL:	DA40	MAX WEIGHT:	2535.75
A/C S/N:	40.264	WORK ORDER:	11020-09-2019
PREVIOUS A/C EMPTY WEIGHT:	1666.93	PREVIOUS A/C MOMENT:	157504.88
PREVIOUS A/C EMPTY C.G.:	94.49	PREVIOUS A/C USEFUL LOAD:	868.80

Equipment Description	Part Number	Serial Number	Weight	Arm	Moment
REMOVED EQUIPMENT			2.50		168.75
Garmin GTX327 Transponder	011-00490-00	83712654	2.50	67.50	168.75
INSTALLED EQUIPMENT			3.50		258.88
Garmin GA35 GPS WAAS Antenna	013-00235-00	159000	0.50	112.75	56.38
Garmin GTX335 Mode S Transponder	011-03300-40	3EE421737	3.00	67.50	202.50

NEW A/C EMPTY WEIGHT:	1667.93	NEW A/C MOMENT:	157595.01
NEW A/C EMPTY C.G.:	94.49	NEW A/C USEFUL LOAD:	867.80

Compiled by:  9-17-19
 Todd Williamson

Form , Rev.