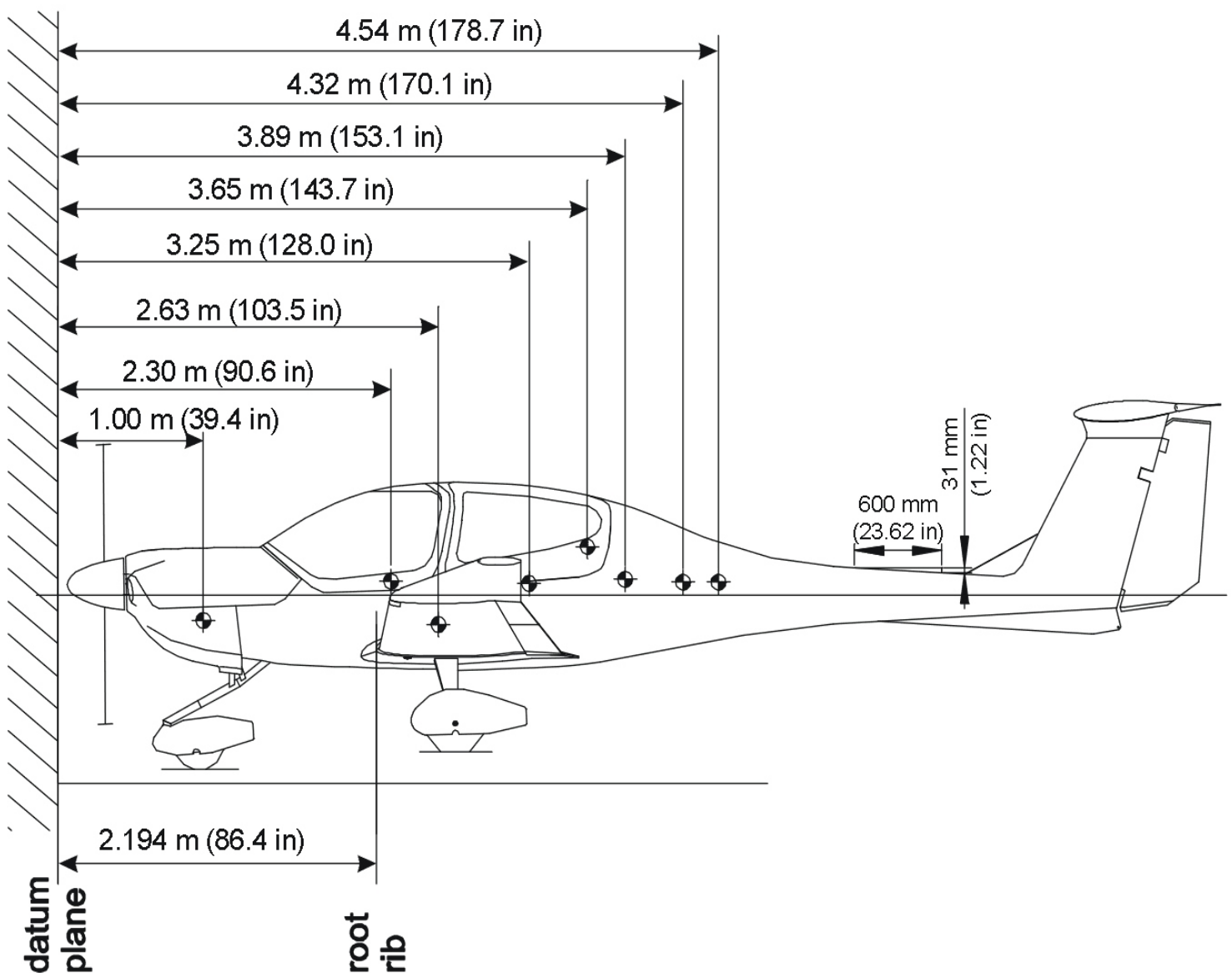


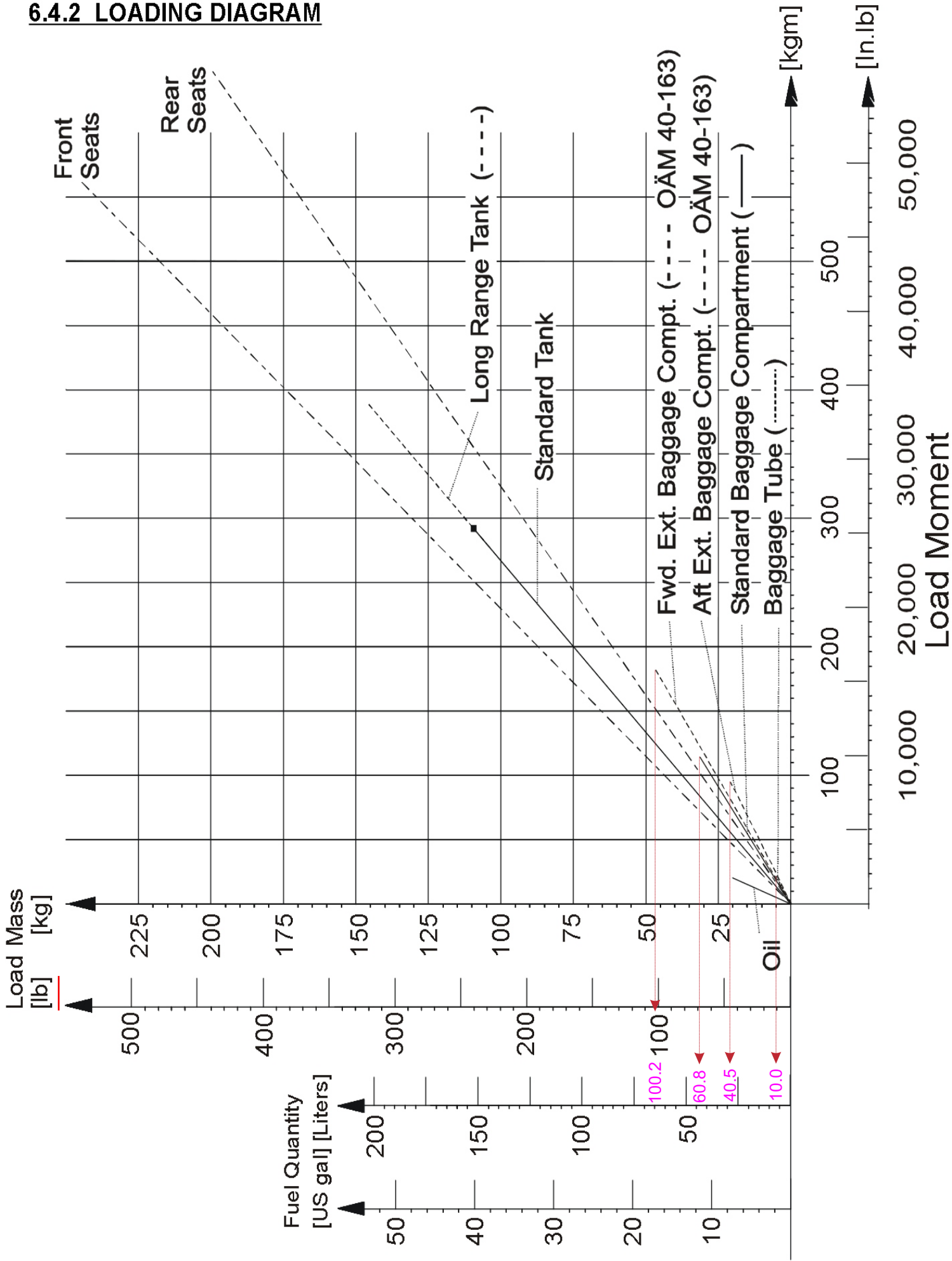
6.4.1 MOMENT ARMS

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
- Wing tanks (Standard & Long Range)	:	2.63 m	103.5 in
- Baggage in standard baggage compartment	:	3.65 m	143.7 in
baggage in baggage tube	:	4.32 m	170.1 in
- Baggage in extended baggage compartment			
forward part	:	3.89 m	153.1 in
aft part	:	4.54 m	178.7 in

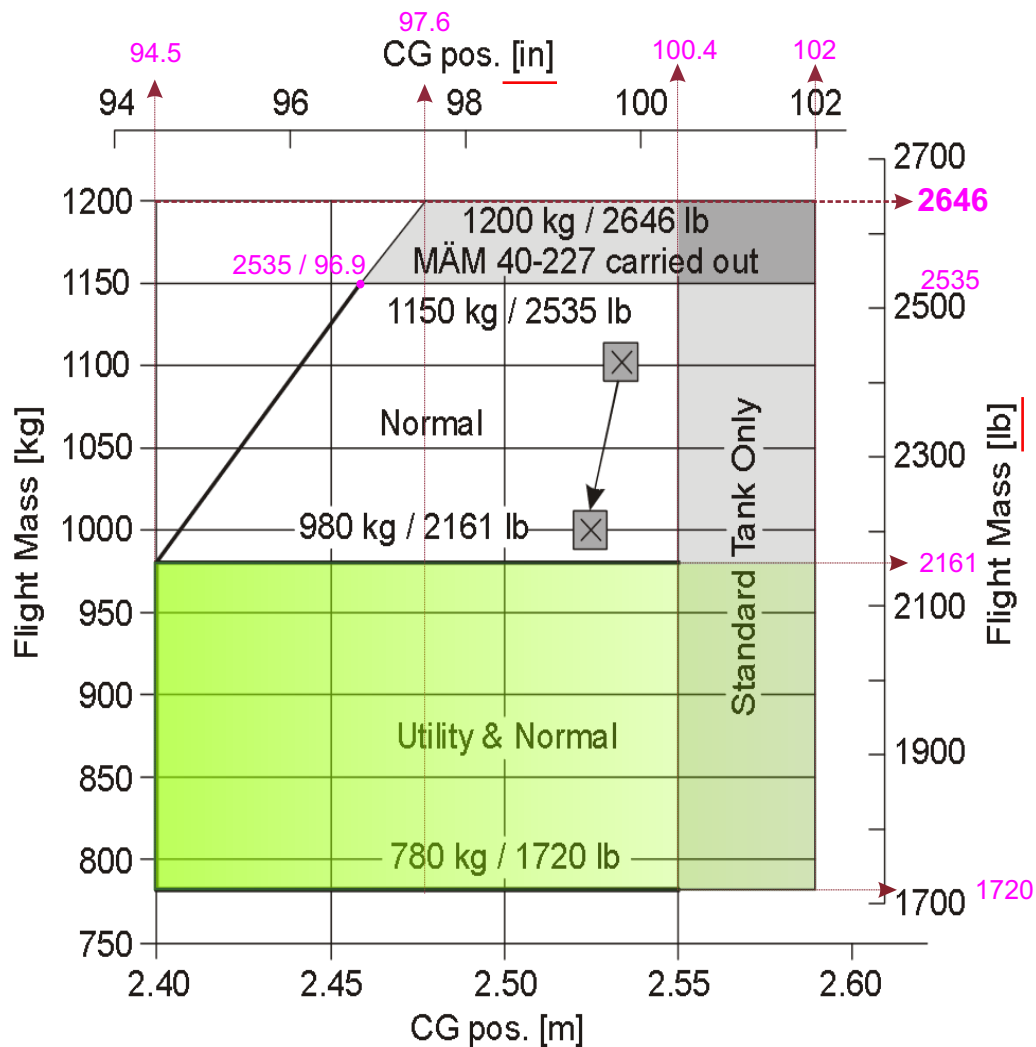


6.4.2 LOADING DIAGRAM



		DA 40 (Example)		Your DA 40	
		Mass [kg] [lb]	Moment [kg m] [in lb]	Mass [kg] [lb]	Moment [kg m] [in lb]
1	Empty mass (from Mass and Balance Report)	735 1620	1760 152,762		
2	Oil not added Lever arm: 1.00 m (39.4 in)	-1.7 -4	-1.7 -158		
3	Front seats Lever arm: 2.30 m (90.6 in)	150 331	345 29,989		
4	Rear seats Lever arm: 3.25 m (128.0 in)	75 165	243.8 21,120		
5	Standard baggage comp ^{max: 40.5} Lever arm: 3.65 m (143.7 in)	0 0	0 0		
	Baggage tube ^{max: 10.0} Lever arm: 4.32 m (170.1 in)	0 0	0 0		
6	Fwd. extended baggage compartment ^{max: 100.2} Lever arm: 3.89 m (153.1 in)	27 60	105 9,186		
	Aft extended baggage compartment ^{max: 60.8} Lever arm: 4.54 m (178.7 in)	18 40	81.7 7,148		
7	Total mass & total moment with empty fuel tanks (Total of 1.-6.)	1003.3 2212	2533.8 220,047		
8	Usable fuel ^{max: 40gal} Lever arm: 2.63 m (103.5 in)	99.4 219	261.4 22,667		
9	Total mass & total moment including fuel (7. plus 8.) ^{max: 2646}	1102.7 2431	2795.2 242,714		
10	The total moments from rows 7 and 9 (2533.8 and 2795.2 kgm) (220,047 and 242,714 in.lb) must be divided by the related total mass (1003.3 and 1102.7 kg respectively) (2212 and 2431 lb) and then located in Diagram 6.4.4 - PERMISSIBLE CENTER OF GRAVITY RANGE. As in our example CG positions (2.525 m and 2.535 m respectively) (99.48 and 99.84 in) and masses fall into the permitted area, this loading condition is allowable.				

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

If MÄM 40-227 is carried out:

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

2.48 m (97.6 in) aft of Datum Plane at 1200 kg (2646 lb)

linear variation between these values

AFT CG Limit: 102

6.4.5 PERMISSIBLE MOMENT RANGE

