Figure 6.1: Weighing Report

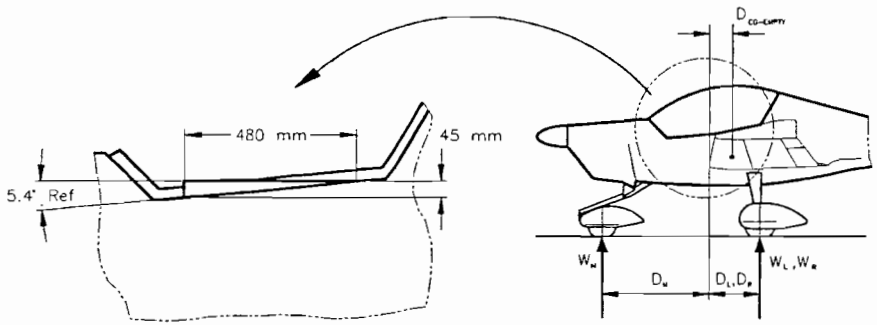
Model: DA 20 S/N: 10074 Registration: OE-CTA

Data in accordance with TCDS and Flight Manual Reason for Weighing: Austrian Reg.

Reference Datum: Leading edge of wing at root rib

Horizontal reference line: 480 mm Spirit Level placed on Fuselage Canopy Rail (L or R), supported at front by a 57 mm spacer as shown below

Weighing Conditions: including brake fluid, lubricant, coolant and unusable fuel (1.5 kg /3.31 lbs)
Equipment List dated: 23.04.01



Support	Gross [kg] ([lbs])	Tare [kg] ([lbs])	Net Weight [kg] ([lbs])	Lever Arm [m] ([in])
Nose	/	/	W_N = 70,4	D_N = 1,150
Main Left	/	/	W_L = 213,5	D_L = 0,580
Main Right	/	/	W_R = 218,5	D_R = 0,580
Empty Weight $W_T = W_N + W_L + W_R$ = 502,4 lbs (kg)				

Empty Weight Moment $M = W_N \times D_N + W_L \times D_L + W_R \times D_R$ = 169,6 m·kg [in lbs]

Empty Weight CG Position $\frac{\text{Empty Weight Moment}}{\text{Empty Weight}} = \frac{M}{W_T}$ = 0,3376 m [in]

(Positive results indicate, that CG is located aft of RD)

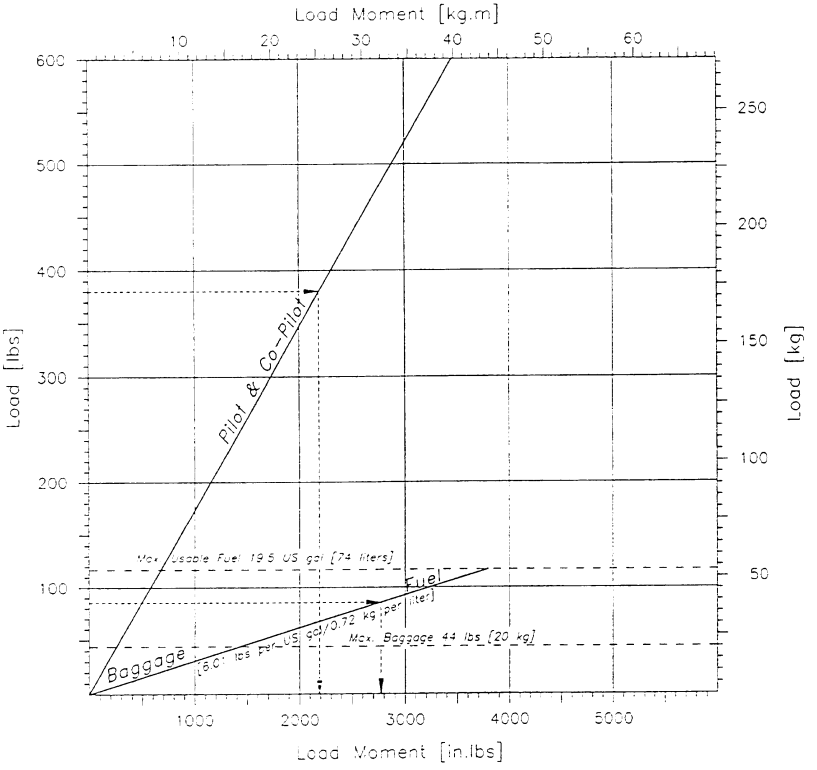
Maximum Permissible Useful Load:	Maximum Weight [kg] ([lbs])	+ 730,0
	Empty Weight [kg] ([lbs])	− 502,4
	Max useful Load [kg] ([lbs])	= 227,6

Data to be entered into the Flight Manual: see page 6-6

Empty Weight [kg] ([lbs])	Empty- Weight-Moment [kg·m] ([in·lbs])
502,4	169,6

Place / Date	Inspector's Stamp	Inspector's Signature
LOAN, 23.04.01	Diamond Aircraft Austria Lic. No. 690	

Figure 6.3: Weight & Balance Diagram

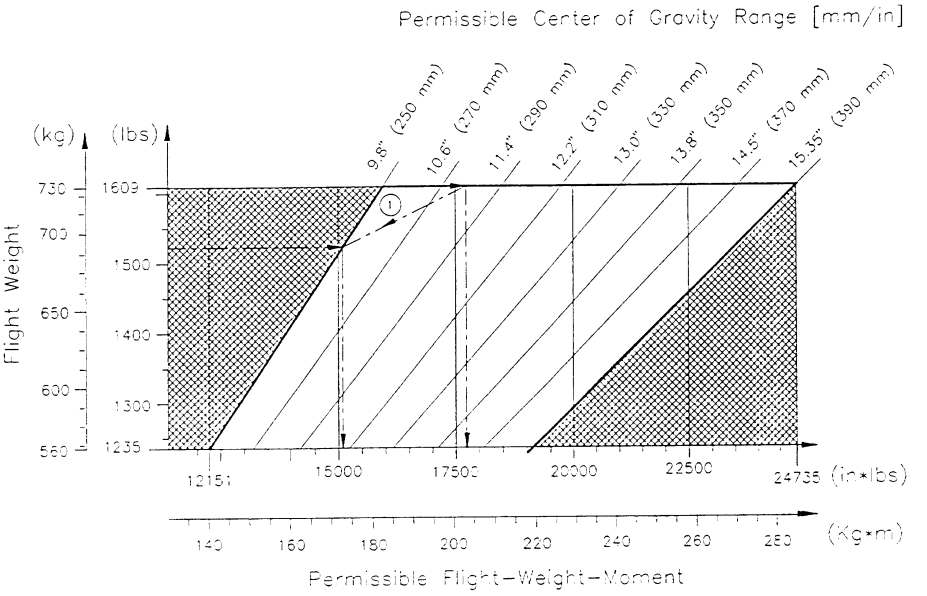


Example:	Pilot and Passenger:	172 kg(380 lbs.)
	Fuel 52.9 litres / 14.0 US gal.:	38 kg (84 lbs.)
	(0.72 kg per litre./ 6.01 lbs. per US gal)	
Result:	Moment of Pilot and Passenger:	. 24.6 kgm (2139 in.lbs)
	Moment of Fuel:	31.3 kgm (2725 in.lbs.)

Figure 6.4: Calculation of Loading Condition

Calculation of the Load Limits	*DA 20 (Example)*		Your DA 20	
	Weight [lbs] (Weight [kg])	Moment [in.lbs] ([kgm])	Weight [lbs] (Weight [kg])	Moment [in.lbs] ([kgm])
1. Empty Weight (use the data for your airplane recorded in the equipment list, including unusable fuel, lubricant and coolant).	1145 (520)	12880 (148.404)		
2. Pilot and Passenger: Lever Arm: 0.143 m (5.63 in)	380 (172)	2139 (24.596)		
3. Baggage: Lever Arm: 0.824 m (32.44 in)	-- (--)	-- (--)		
4. Total Weight and Total Moment with empty fuel tank (sum of 1. - 3.)	**1525 (692)**	**15019 (173.00)**		
5. Usable Fuel Load (6.01 lbs. per US gal./0.72 kg per liter) Lever Arm (32.44 in) (0.824 m)	84 (38)	2725 (31.312)		
6. Total Weight and Total Moment, taking fuel into account (sum of 4. and 5.)	**1609 (730)**	**17744 (204.312)**		
7. Find the values for the total weight (1525 lbs. and 1609 lbs.) and the total moment (15019 in lbs. and 17744 in.lbs.) in the center of gravity diagram. Since they are within the limitation range, the loading is permissible.				

Figure 6.5: Permissible Center of Gravity Range and permissible Flight-Weight-Moment



..... DA 20 (Example of page 6-9)

① Changes during flight (due to fuel consumption)