AICRAFT TYPE : _____ ***NAME :*** _____ ***DATE :*** _____

1. What is the nornal climb-out speed ? ☞

2. What is the best rate of climb speed (Vy), and his definition ? ☞

3. What is the best angle of climb speed (Vx), and his definition ? ☞

4. What is the maximum flap-down speed (VFE) ? ☞

5. What is the maximum gear-down speed (VLE) ? ☞

6. What is the stall speed in a normal landing configuration ? ☞

7. What is the clean-stall speed ☞

8. What is the approach-to-landing speed ? ☞

9. What is maneuvering speed (VA) ? ☞

10. What is the red-line speed (VNE) ? ☞

11. What speed will give you the best glide ratio ? ☞

12. Why must we check the fuel pressure when we put the electrical fuel pump off ? ☞

13. What is the TAS given in the AFM at 5000 ft and 65% of power ? (T°standard) ☞

14. What RPM or combination of RPM and Manifold Pressure yields 65% power at 5000 ft MSL ? (T°standard) ☞

15. How many gallons of fuel are used per hour at 65% at 5000 ft MSL ? ☞

16. How many usable gallons of fuel can you carry ? ☞

17. What is (are) the capacity of the fuel tanks ? ☞

18. With full fuel load at 65% power, at 5000 ft, allowing 45 min. reserve, what is the maximum duration (in hours) ? ☞

19. What is the maximum take-off weight for the aircraft ? ☞

20. What is the octane rating of the fuel by his aircraft ? ☞

21. From which altitude do you begin to mix in cllmb ? ☞

22. What is the maximum allowable crosswind component for the aircraft ? ☞

23. What is the maximum allowable weight the aircraft can carry in the baggage compartment ? ☞

24. What take-off distance is required to clear a 50ft. obstacle at maximum gross weight at a pressure altitude of 5000 ft. and 20°C (assume 25° flaps, no wind and a hard surface runway) ? ☞

25. What would the answer to question 24 be if the take-off were made from a sea level pressure altitude ? ☞

26. When do you change to 1013.2 hPa the altimeter setting ? ☞

27. How do find pressure altitude ? ☞

28. You fly with a MT of 185°, which FL can you cho ose ? ☞

29. What is the emergency frequency ? ☞

30. What is the transponder code for a radio failure ? ☞

POIDS ET CENTRAGE

DA 20/100 KATANA

PILOT : PASSENGER :

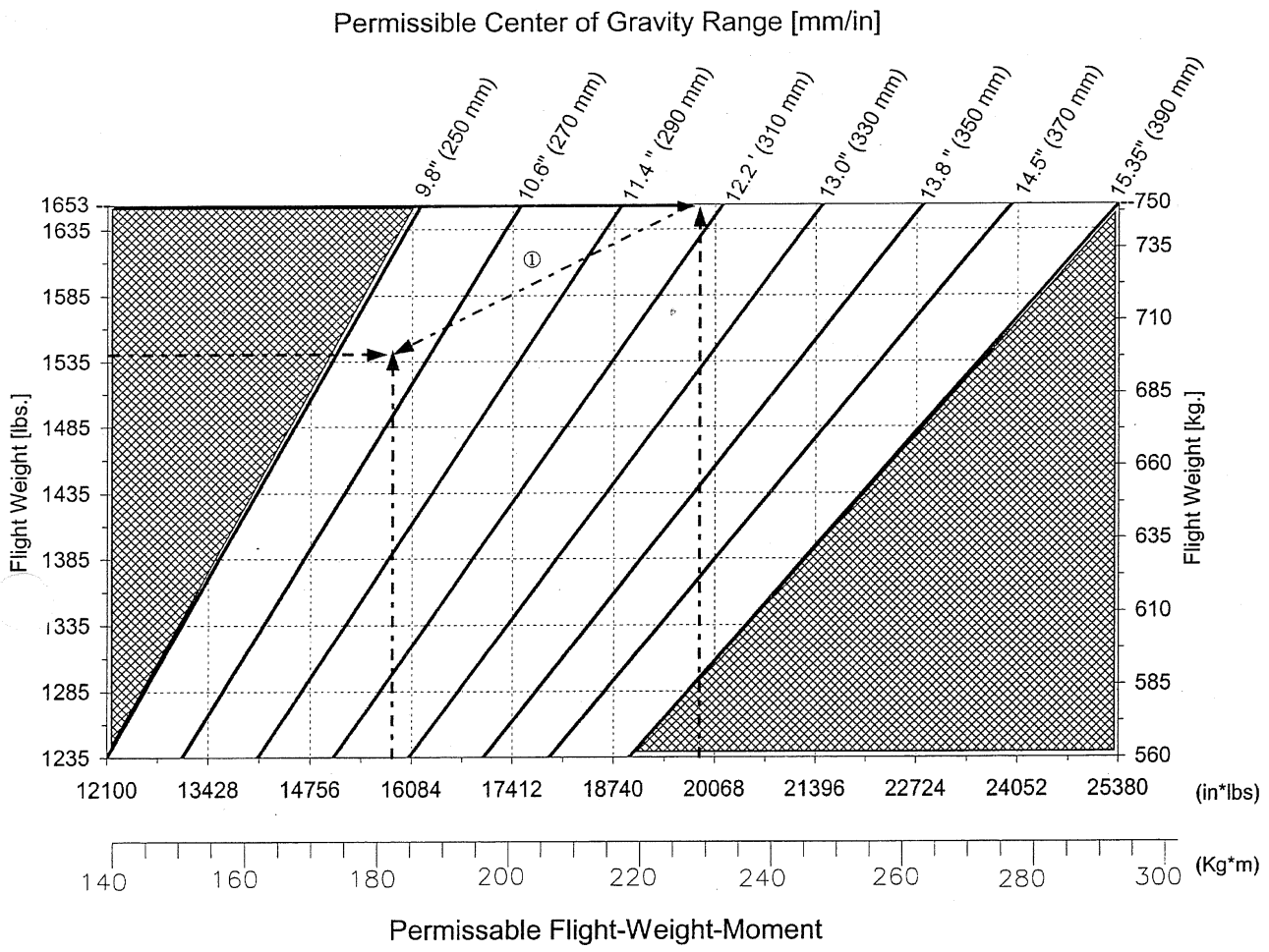
1 USG = 3,785 L = 6 LBS = 2,65 KG 1 LB = 0,4536 KG

CALLSIGN :	WEIGHT (lbs)	ARM AFT DATUM (INCHES)	MOMENT (IN-LBS)
BASIC EMPTY WEIGHT			
PILOT AND PASSENGER		5.63	
BAGAGE (.....LBS. MAX.)		32.44	
TOTAL WEIGHT WITH EMPTY FUEL TANK			
USABLE FUEL (..... USG. MAX.)		32.44	
TOTAL WEIGHT WITH FUEL	=======	=========	==========

ENVELOPPE OK ???

IL INCOMBE AU PILOTE DE S' ASSURER QUE L'AVION EST CORRECTEMENT CHARGE

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



6.4.3 CALCULATION OF LOADING CONDITION

a) Standard tank

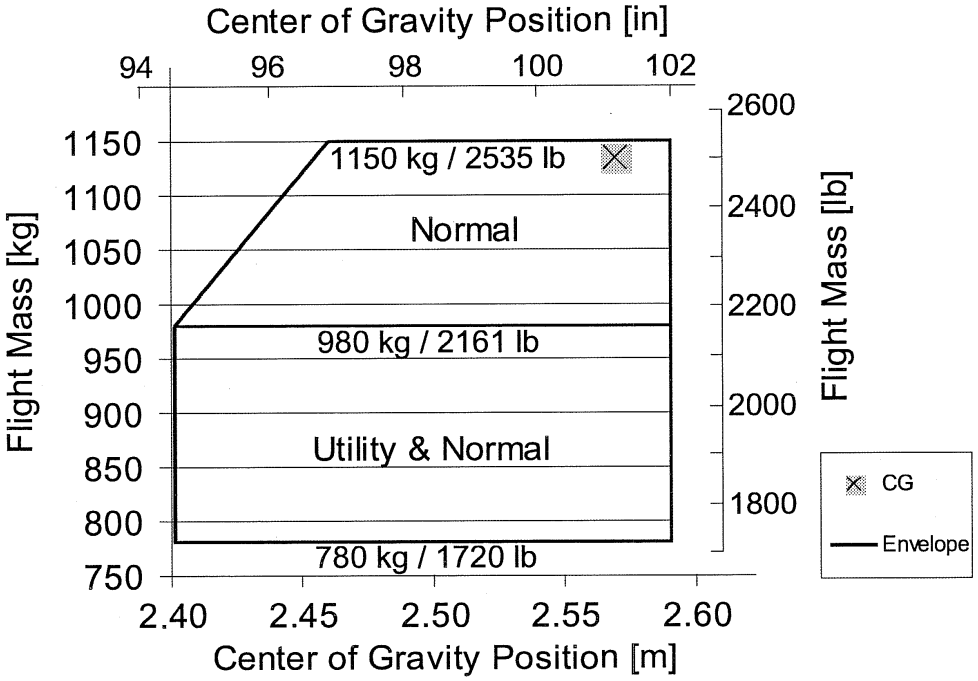
CALCULATION OF LOADING CONDITION	DA 40 D (Example)		Your DA 40 D	
	Mass [kg] *[lb]*	Moment [kgm] *[in.lb]*	Mass [kg] *[lb]*	Moment [kgm] *[in.lb]*
1. Empty mass (from Mass and Balance Report)	735 *1620*	1820 *158,000*		
2. Front seats Lever arm: 2.30 m *(90.6 in)*	150 *331*	345 *29,989*		
3. Rear seats Lever arm: 3.25 m *(128.0 in)*	150 *331*	487.5 *42,368*		
4. Baggage Lever arm: 3.65 m *(143.7 in)*	0 *0*	0 *0*		
5. Total mass and total moment with empty fuel tanks (Total of 1.-4.)	1035 *2282*	2652.5 *230,357*		
6. On-board usable fuel (0.84 kg/liter) *(7.01 lb/US gal)* Lever arm: 2.63 m *(103.5 in)*	100.8 *222*	265.10 *23,001*		
7. Total mass and total moment with full fuel tanks (Total 5. plus 6.)	1135.8 *2504*	2917.60 *253,357*		

8. The total moments from rows 5 and 7 (2652.5 and 2917.6 kgm) *(230,357 and 253,357 in.lb)* must be divided by the related total mass (1035 and 1135.8 kg respectively) *(2282 and 2504 lb)* and then located in Diagram 6.4.4 'PERMISSIBLE CENTER OF GRAVITY RANGE'.

   As in our example CG positions (2.562 m and 2.569 m respectively) *(100.95 and 101.18 in)* and masses fall into the permitted area, this loading condition is allowable.

6.4.4 PERMISSIBLE CENTER OF GRAVITY RANGE

a) Standard tank



The CG shown in the diagram is that from the example in Table 6.4.3 (a) 'CALCULATION OF LOADING CONDITION', row 7 (pre take-off condition).

The flight CG position must be within the following limits:

Most forward flight CG:

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

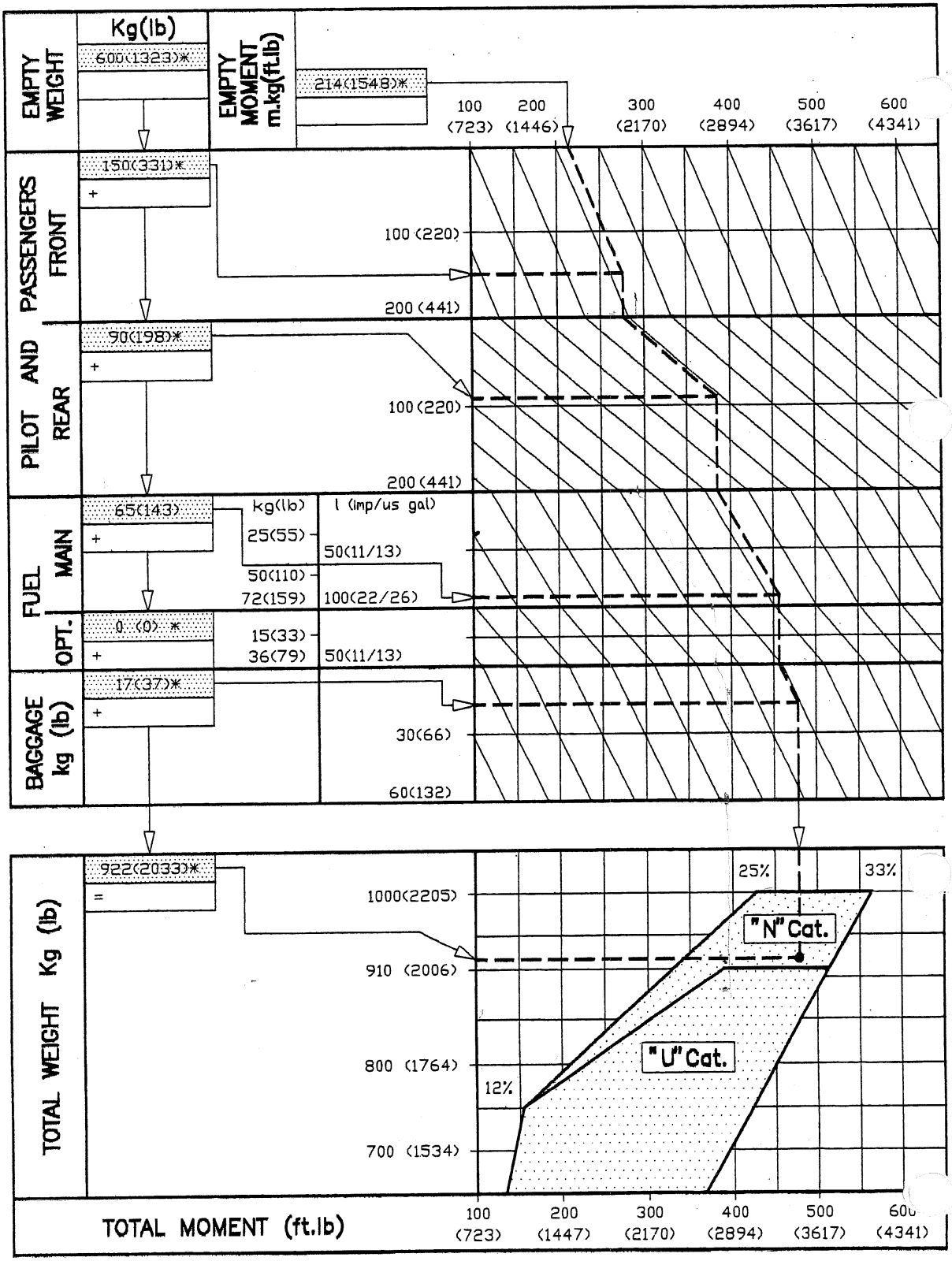
2.46 m (96.9 in) aft of Datum Plane at 1150 kg (2535 lb)

linear variation between these values

Most rearward flight CG:

2.59 m (102.0 in) aft of Datum Plane

DR400/140B FLIGHT MANUAL



POIDS ET CENTRAGE

PA28- ……

PILOT : FRONT PASSENGER : REAR PASSENGERS :

1 USG = 3,785 L = 6 LBS = 2,65 KG 1 LB = 0,4536 KG

CALLSIGN :	WEIGHT (lbs)	ARM AFT DATUM (INCHES)	MOMENT (IN-LBS) /100
BASIC EMPTY WEIGHT			
PILOT AND FRONT PASSENGER		80.5	
PASSENGERS (REAR SEATS)		118.1	
FUEL (.....USG. MAX.)		95.0	
BAGAGE (..... LBS. MAX.)		142.8	
RAMP WEIGHT (..... LBS. MAX.)			
FUEL ALLOWANCE (START, TAXI, RUN-UP)	- 7	95.0	- 665
MTOW (..... LBS. MAX.)	=======	=========	==========

ENVELOPPE OK ???

IL INCOMBE AU PILOTE DE S' ASSURER QUE L'AVION EST CORRECTEMENT CHARGE

	Weight (Lbs)	Arm Aft Datum (Inches)	Moment (In-Lbs)
Basic Empty Weight			
Pilot and Front Passenger		85.5	
Passengers (Center Seats) (Forward Facing)		118.1	
Passengers (Center Seats) (Aft Facing) (Optional)		119.1	
Passengers (Rear Seats)		157.6	
Passenger (Jump Seat) (Opt.)		118.1	
Fuel (102 Gallon Maximum)		94.0	
Baggage (Forward) (100 Lb. Limit)		42.0	
Baggage (Aft) (100 Lb. Limit)		178.7	
Ramp Weight (3615 Lbs. Max.)			
Fuel Allowance for Engine Start, Taxi & Runup	–15.0	94.0	–1410
Take-off Weight (3600 Lbs. Max.)			

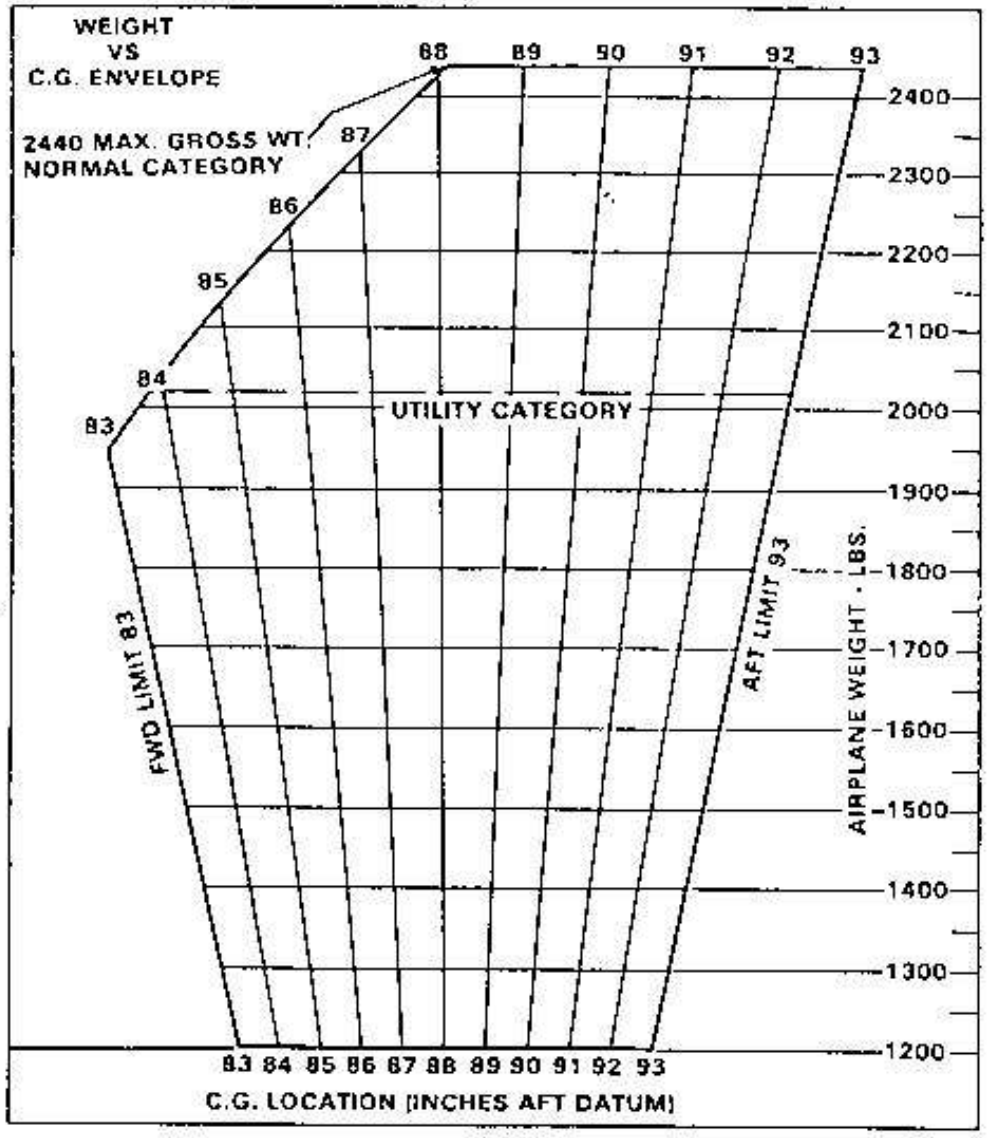
The center of gravity C.G.) for the take-off weight of this loading problem is at inches aft of the datum line. Locate this point ( ) on the C.G. range and weight graph. If this point falls within the weight - C.G. envelope, this loading meets the weight and balance requirements.

Take-off Weight			
Minus Estimated Fuel Burn-off (climb & cruise) @ 6.0 Lbs/Gal.		94.0	
Landing Weight			

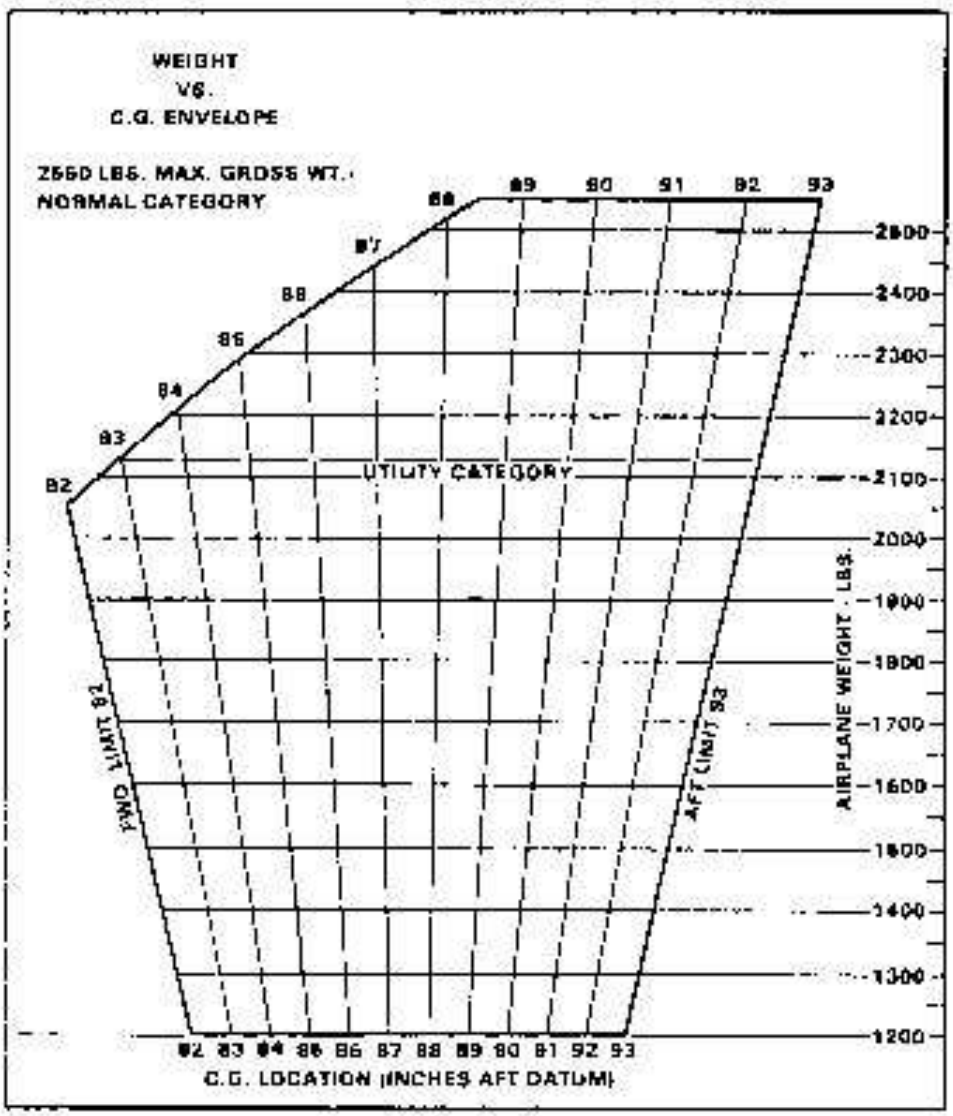
Locate the center of gravity of the landing weight on the C.G. range and weight graph. If this point falls within the weight - C.G. envelope, the loading may be assumed acceptable for landing.

IT IS THE RESPONSIBILITY OF THE PILOT AND AIRCRAFT OWNER TO INSURE THAT THE AIRPLANE IS LOADED PROPERLY AT ALL TIMES.

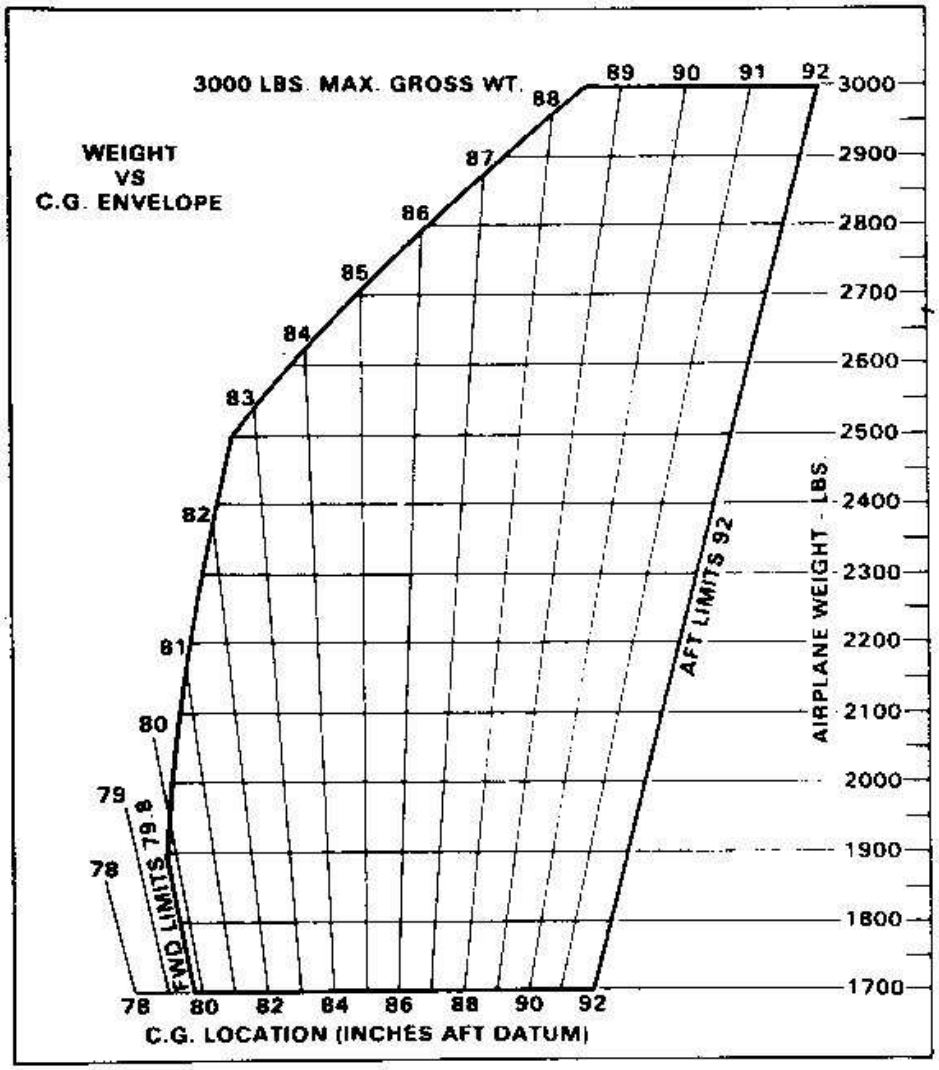
WEIGHT AND BALANCE LOADING FORM (NORMAL CATEGORY)
Figure 6-11



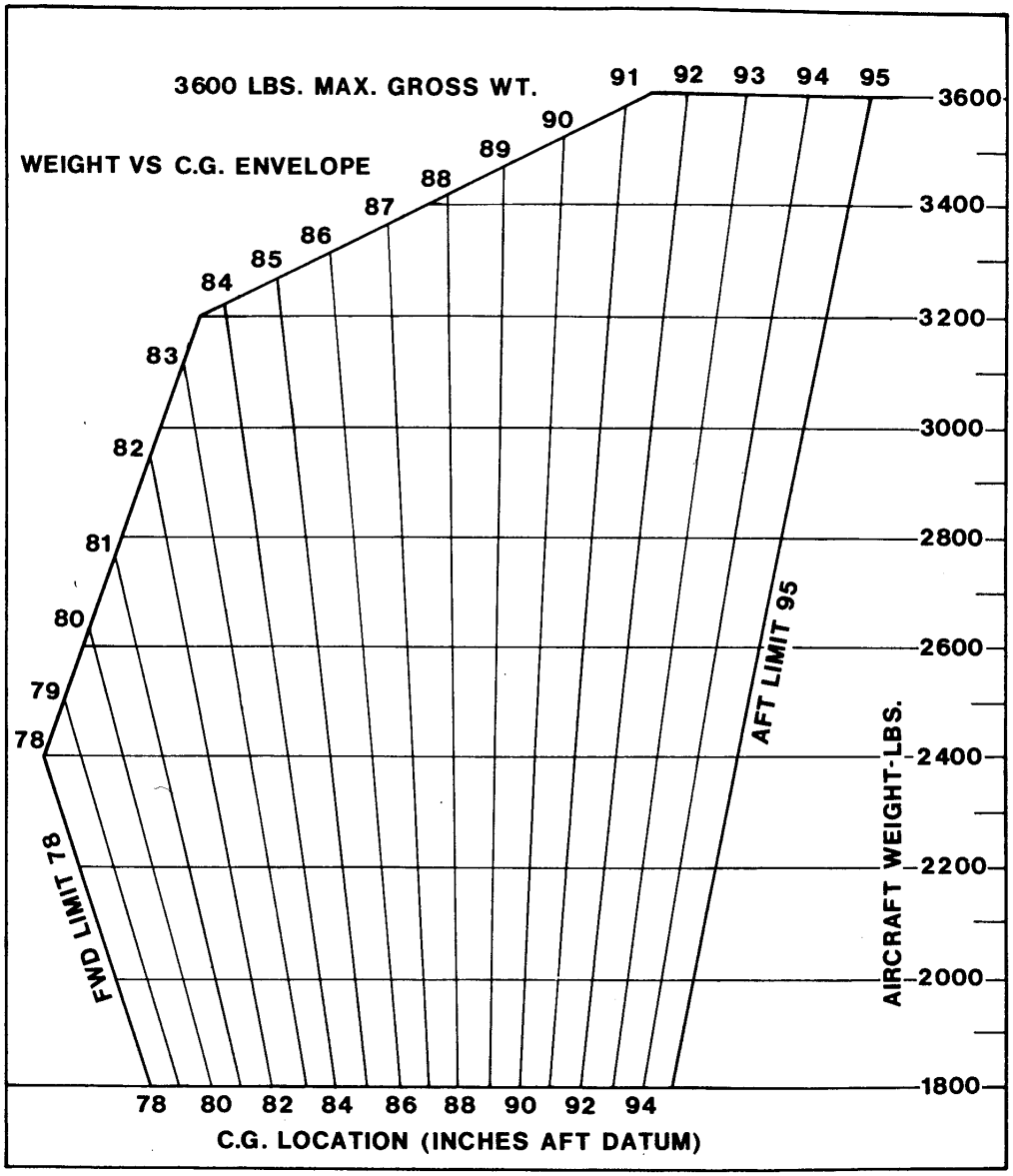
C.G. RANGE AND WEIGHT
Figure 6-15



C.G. RANGE AND WEIGHT
Figure 6-15



C. G. RANGE AND WEIGHT
Figure 6-15



C.G. RANGE AND WEIGHT
Figure 6-15