

Law of the Lever

Lever is balanced when:
 The weight on one side of the fulcrum multiplied by its arm is equal to:
 the weight on the other side multiplied by its arm.

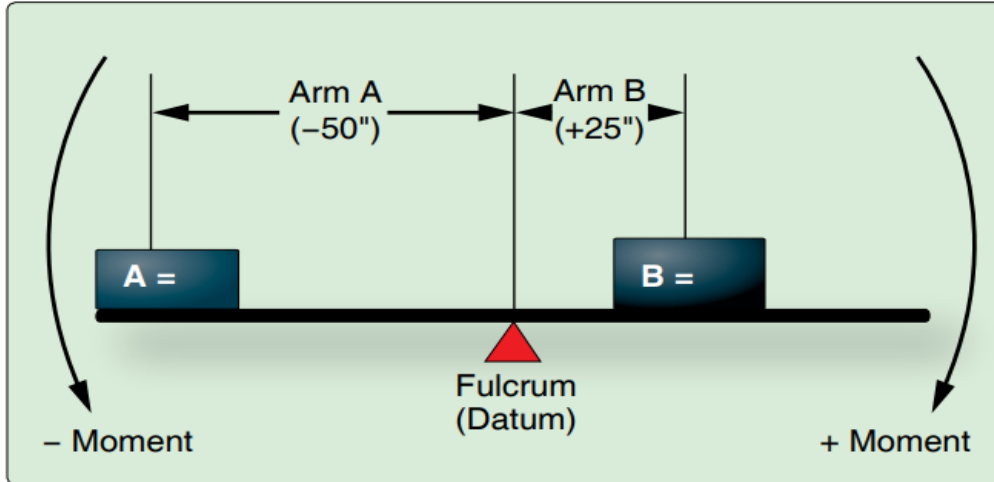


Figure 32. The Law of the Lever.

	Weight X	Arm =	Moment
Weight A	100	-50	-5000
Weight B	?	25	?

Since we know moment must be equal to +5000 in order for the lever to be balanced we can solve for Weight B

	Weight X	Arm =	Moment
Weight A	100	-50	-5000
Weight B	?	25	5000

Since we know Weight B's moment and arm we can calculate the weight. $\text{Moment}/\text{Arm} = \text{Weight}$

	Weight X	Arm =	Moment
Weight A	100	-50	-5000
Weight B	200	25	5000

Now we know that it will take 200lbs to balance the lever in position B

N8182U

Full Fuel

Item	Weight x	Arm =	Moment
Empty Weight		38.4	-
Fuel		48.0	-
Front seat		36.0	-
Rear seat		70.0	-
Baggage Area		95.0	-
Total	-		-

N8182U

Full Fuel

Item	Weight x	Arm =	Moment
Empty Weight	1,367	38.4	52,489
Fuel	216	48.0	10,368
Front seat	365	36.0	13,140
Rear seat	50	70.0	3,500
Baggage Area	10	95.0	950
Total	2,008	40.1	80,447

No Fuel

Item	Weight x	Arm =	Moment
Empty Weight		38.4	-
Fuel		48.0	-
Front seat		36.0	-
Rear seat		70.0	-
Baggage Area		95.0	-
Total	-		-

No Fuel

Item	Weight x	Arm =	Moment
Empty Weight	1,367	38.4	52,489
Fuel	-	48.0	-
Front seat	365	36.0	13,140
Rear seat	50	70.0	3,500
Baggage Area	10	95.0	950
Total	1,792	39.1	70,079

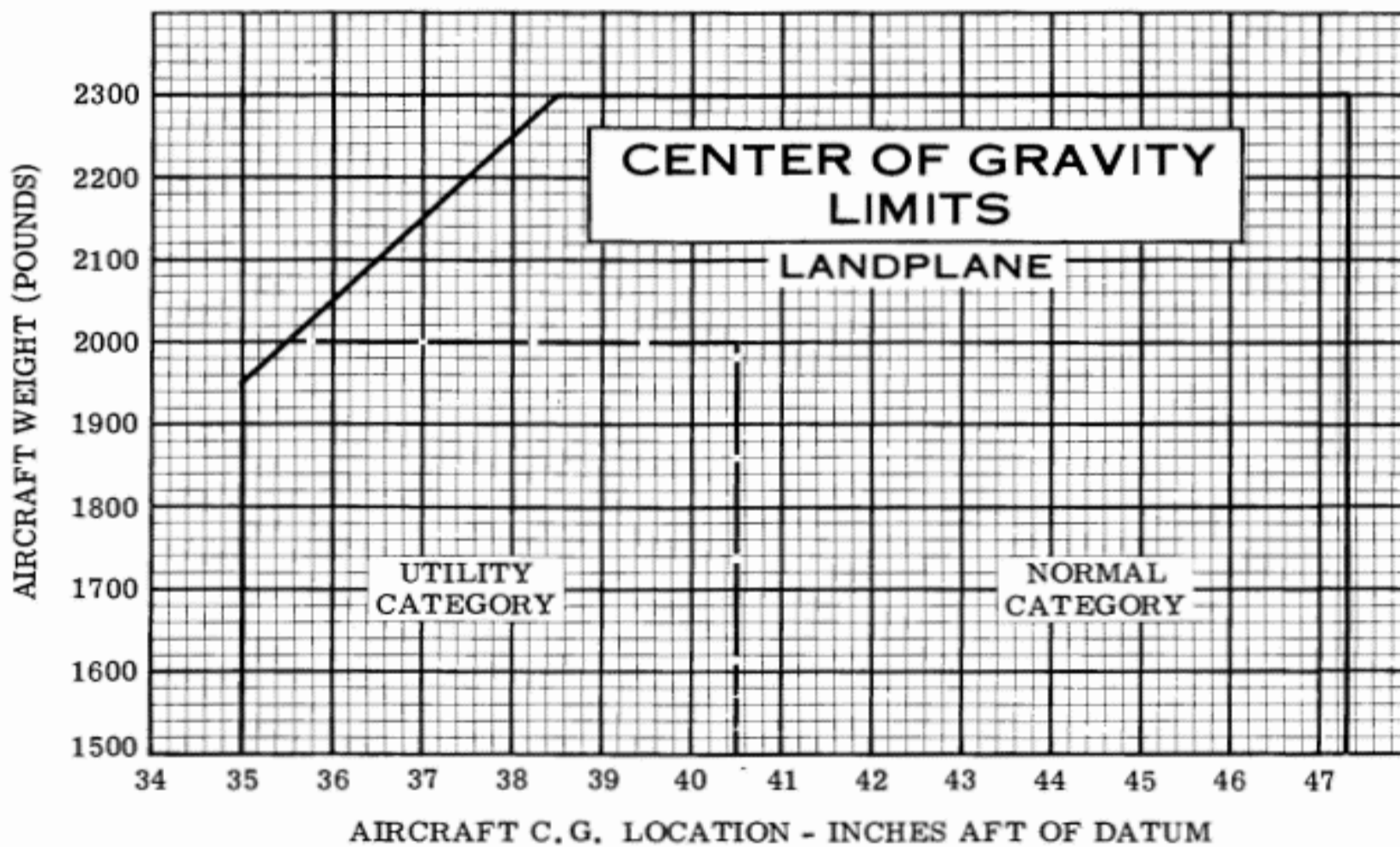


Figure 6-8. Center of Gravity Limits

SECTION 6
WEIGHT & BALANCE/
EQUIPMENT LIST

CESSNA
MODEL 172M