

ANC19FA038 N7469A

Weight and Balance Calculations

ASSUMPTIONS AND ESTIMATES

Pilot Weight	190 lbs	Based on last FAA physical
Airplane Empty Weight	1,330.7 lbs	Based on last FAA form 337 with W & B
Cargo/Bison meat	420 lbs	Based on witness report, in quarters
Baggage	30 lbs	Based on witness report and gear
Fuel at TO	25 gal	Based on witness report, 6 lb@gal, 150 lb
Moment Arms		Figure 2, Cessna 172 POH

CG Limitations at 2,135.7 lbs are 86.0 to 98.0 X 1,000 inch-pounds. See figure 1.

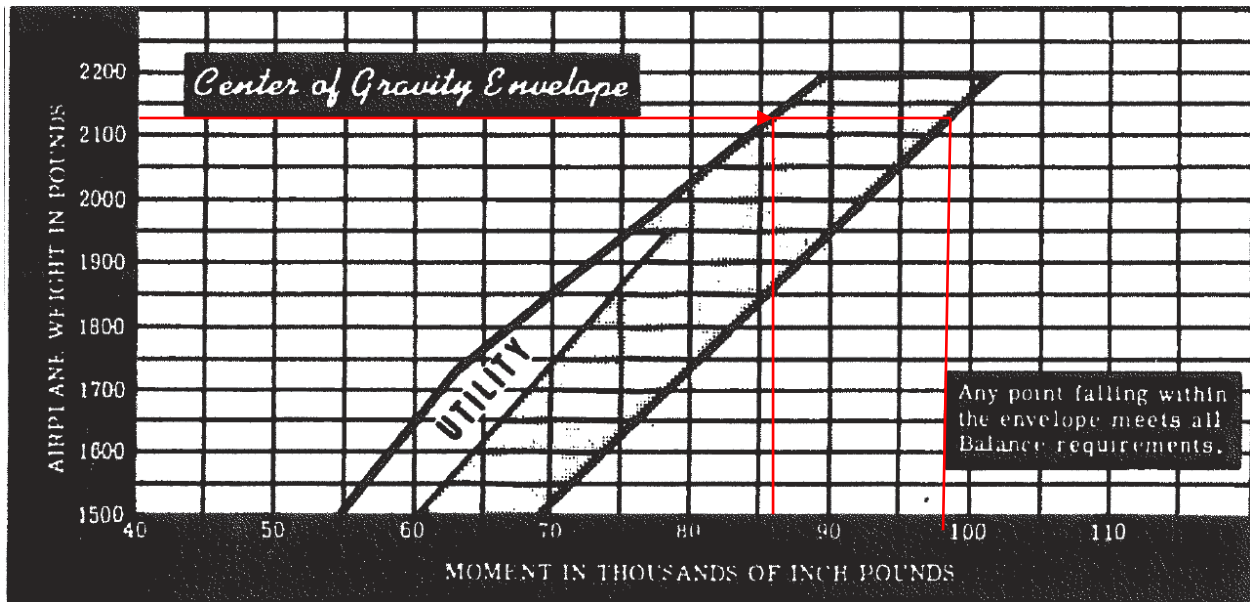


Figure 1. Center of gravity chart from Cessna 172 POH.

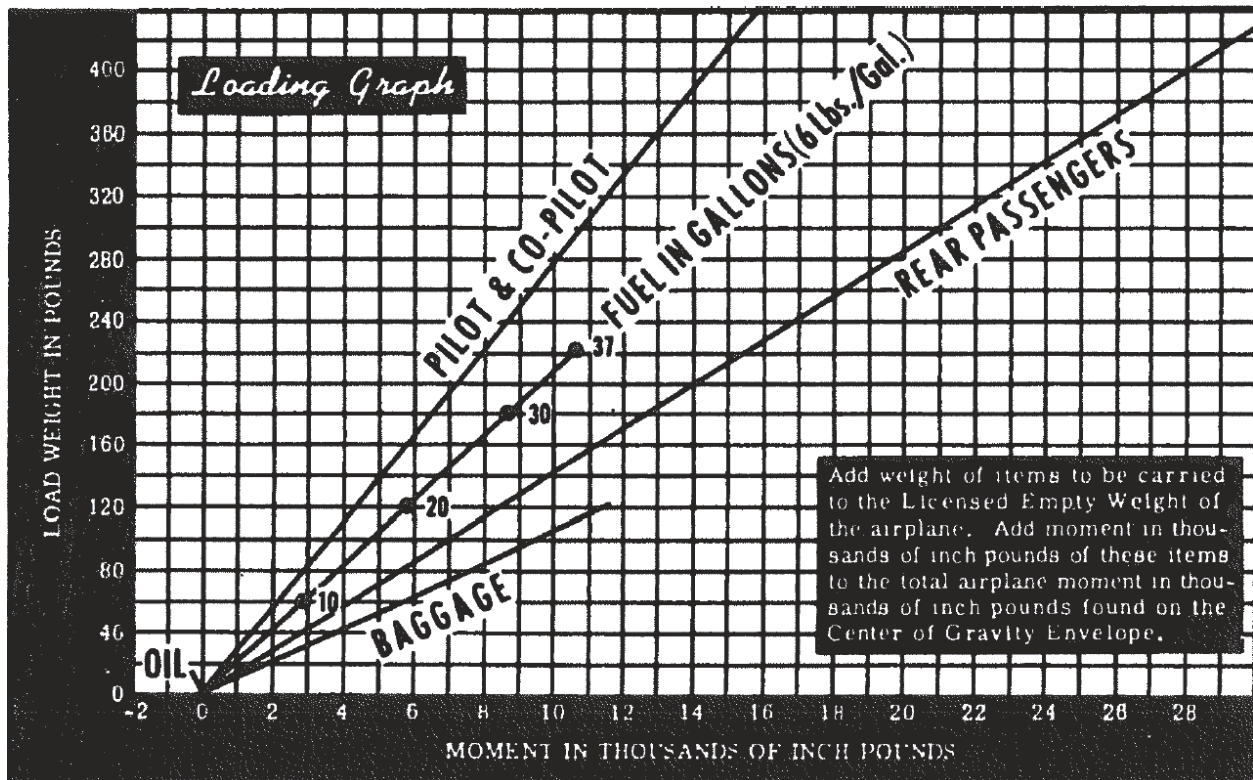


Figure 2. Moment chart from Cessna 172 POH.

A. ALL BISON MEAT IN REAR SEAT (Takeoff)

Item	Weight	Moment
Airplane	1330.7	49.36525
Oil	15	-300
Pilot/pax 1	190	7.7
Rear seat 2	420	29.5
Fuel	150 25g	7.3
Baggage	30	2.8
Total	2,135.7 lb	96.36525 in-lb (within limits)

B. BISON QUARTER IN BAGGAGE COMPARTMENT (Takeoff)

Baggage	120 lbs	11.5
Rear seat	300	21.0
Total		96.56525 in-lb (within limits)

C. BISON QUARTER IN FRONT RIGHT SEAT (Takeoff)

Pilot and Bison	310 lbs	10.0
<u>Rear seat</u>	<u>300</u>	<u>21.0</u>
Total		90.165 in-lb (within limits)

D. Summary

Based on witness statements and estimated weights, the gross weight and center of gravity of the airplane were within the manufacturer's limits at takeoff. The airplane would have burned about 4 gallons (24 lbs) of fuel before the accident, which still would have resulted in acceptable center of gravity the limits.