

SECTION 6  
WEIGHT & BALANCE / EQUIPMENT LIST

CESSNA  
MODEL 172S

| ITEM DESCRIPTION                                                                                                                                                                                                                                        | WEIGHT AND MOMENT<br>TABULATION |                              |                  |                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------------|------------------|------------------------------|
|                                                                                                                                                                                                                                                         | SAMPLE<br>AIRPLANE              |                              | YOUR<br>AIRPLANE |                              |
|                                                                                                                                                                                                                                                         | Weight<br>(lbs.)                | Moment<br>(Lb-ins.<br>/1000) | Weight<br>(lbs.) | Moment<br>(Lb-ins.<br>/1000) |
| 1. Basic Empty Weight (Use the data pertaining to your airplane as it is presently equipped. Includes unusable fuel and full oil)                                                                                                                       | 1642                            | 62.6                         | 1737.9           | 71.2                         |
| 2. Usable Fuel (At 6 Lbs./Gal.)                                                                                                                                                                                                                         |                                 |                              | 318              | 15.5                         |
| 53 Gallons Maximum                                                                                                                                                                                                                                      |                                 |                              |                  |                              |
| 30 Gallons (Quantity used for example)                                                                                                                                                                                                                  | 180                             | 8.6                          |                  |                              |
| 3. Pilot and Front Passenger (Station 34 to 46)                                                                                                                                                                                                         | 340                             | 12.6                         | 385              | 14.2                         |
| 4. Rear Passengers                                                                                                                                                                                                                                      | 340                             | 24.8                         | 169              | 12.5                         |
| 5. *Baggage Area 1 (Station 82 to 108; 120 Lbs. Max.)                                                                                                                                                                                                   | 56                              | 4.6                          |                  |                              |
| 6. *Baggage Area 2 (Station 108 to 142; 50 Lbs. Max.)                                                                                                                                                                                                   |                                 |                              |                  |                              |
| 7. <b>RAMP WEIGHT AND MOMENT</b> (add columns)                                                                                                                                                                                                          | 2558                            | 113.2                        | 2609             | 113.4                        |
| 8. Fuel allowance for engine start, taxi and runup                                                                                                                                                                                                      | -8.0                            | -0.4                         |                  |                              |
| 9. <b>TAKEOFF WEIGHT AND MOMENT</b> (Subtract Step 8 from Step 7)                                                                                                                                                                                       | 2550                            | 112.8                        |                  |                              |
| 10. Locate this point (2550 at 112.8) on the Center of Gravity Moment Envelope, and since this point falls within the envelope, the loading is acceptable.<br>* The maximum allowable combined weight capacity for baggage areas 1 and 2 is 120 pounds. |                                 |                              |                  |                              |

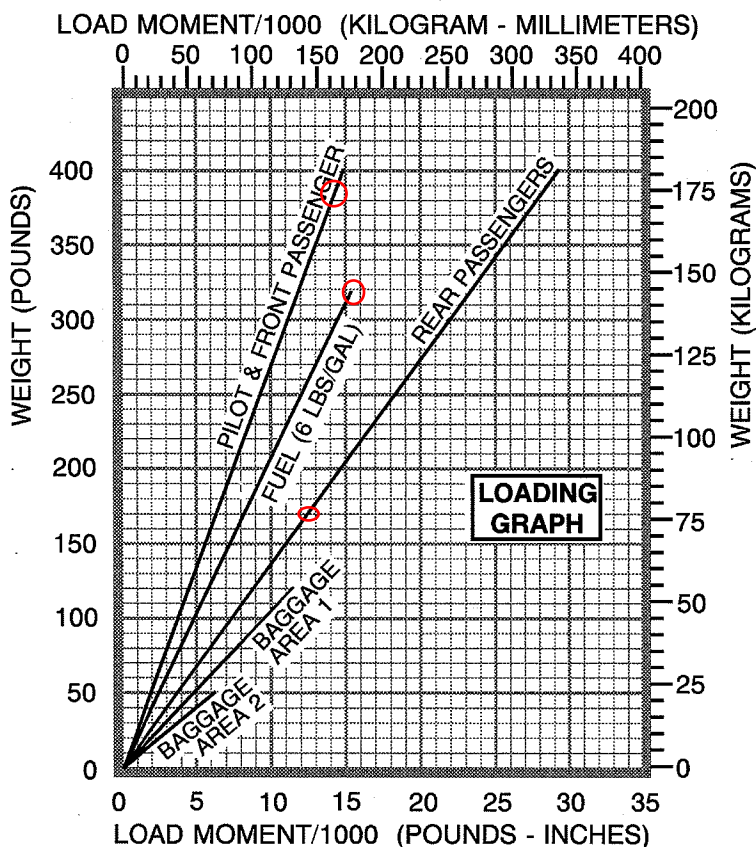
Figure 6-5. Sample Loading Problem (Sheet 1 of 2)

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## NOTE

When several loading configurations are representative of your operations, it may be useful to fill out one or more of the above columns so specific loadings are available at a glance.

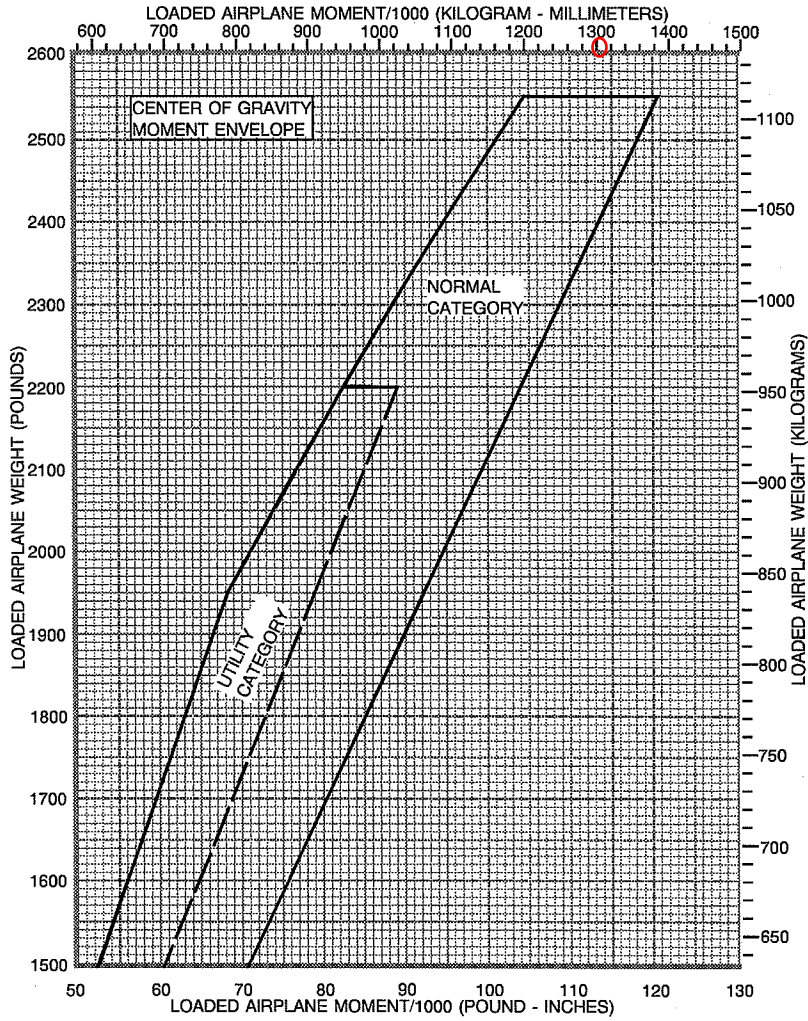
Figure 6-5. Sample Loading Problem (Sheet 2 of 2)



**NOTE:** LINE REPRESENTING ADJUSTABLE SEATS SHOWS THE PILOT OR PASSENGER CENTER OF GRAVITY ON ADJUSTABLE SEATS POSITIONED FOR AN AVERAGE OCCUPANT. REFER TO THE LOADING ARRANGEMENTS DIAGRAM FOR FORWARD AND AFT LIMITS OF OCCUPANT C.G. RANGE.

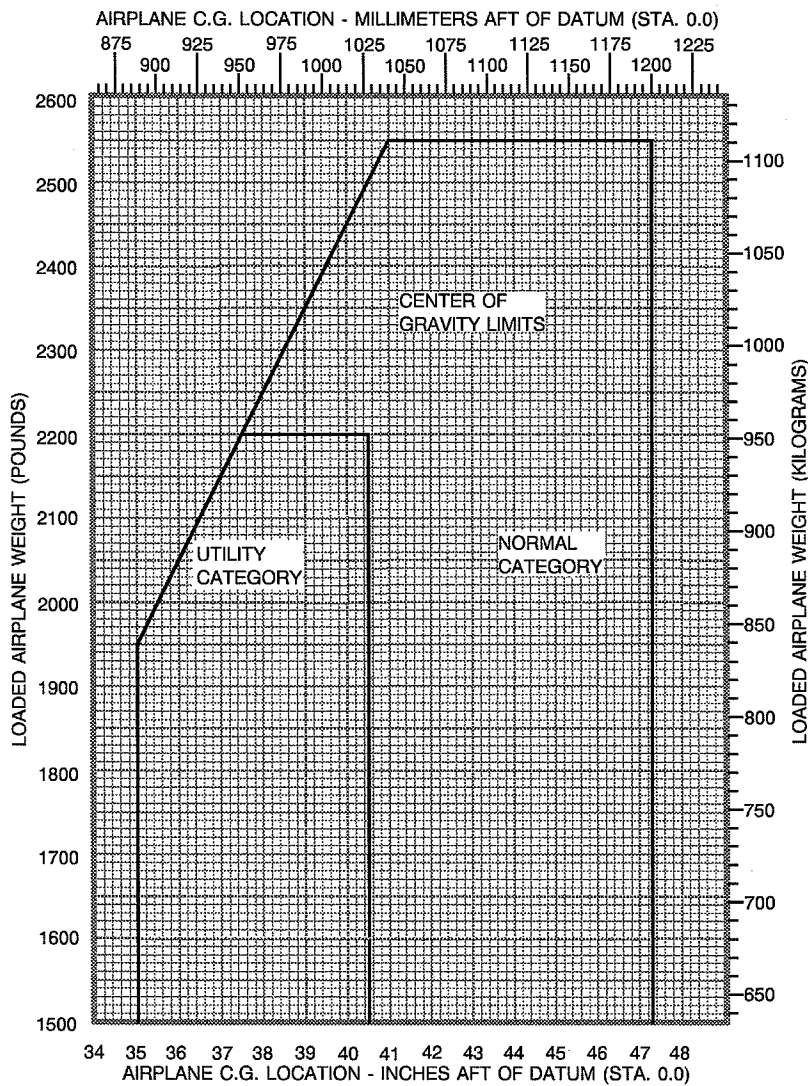
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Figure 6-6. Loading Graph



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Figure 6-7. Center of Gravity Moment Envelope



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Figure 6-8. Center of Gravity Limits

# WEIGHT & BALANCE AND INSTALLED EQUIPMENT DATA

CESSNA AIRCRAFT COMPANY

SINGLE ENGINE DIVISION



| MODEL                                                   | SERIAL & REGISTRATION                           |                  | WEIGHT                            | ARM     | MOMENT  |
|---------------------------------------------------------|-------------------------------------------------|------------------|-----------------------------------|---------|---------|
| 172S                                                    | 172S10201                                       | N612DF<br>N6024G | (lbs)                             | (in)    | (lb-in) |
| (calculated)                                            | STANDARD EMPTY WEIGHT CESSNA TEMP REG<br>Number |                  | 1,644.0                           | 39.983  | 65,732  |
| INSTALLED EQUIPMENT                                     |                                                 |                  | Net Change from Standard Aircraft |         |         |
| BAGGAGE NET                                             |                                                 |                  | 0.0                               | 0.000   | 0       |
| FUEL SAMPLING CUP                                       |                                                 |                  | 0.0                               | 0.000   | 0       |
| PILOT'S CHECKLIST                                       |                                                 |                  | 0.0                               | 0.000   | 0       |
| POH AND FAA APPROVED AIRPLANE FLIGHT MANUAL             |                                                 |                  | 0.0                               | 0.000   | 0       |
| TOW BAR, NOSE GEAR (STOWED)                             |                                                 |                  | 0.0                               | 0.000   | 0       |
| AIRSPEED INDICATOR                                      |                                                 |                  | 0.0                               | 0.000   | 0       |
| ALTIMETER WITH 20 FT MARKING, DUAL WINDOW, 20000 FT     |                                                 |                  | 0.0                               | 0.000   | 0       |
| ATTITUDE INDICATOR                                      |                                                 |                  | 0.0                               | 0.000   | 0       |
| BLIND ALTITUDE ENCODER INSTL                            |                                                 |                  | 0.0                               | 0.000   | 0       |
| COMPONENTS REQUIRED FOR FRONT SEAT INFLATABLE RESTRAINT |                                                 |                  | 0.3                               | 45.300  | 14      |
| DUAL AXIS AUTOPILOT                                     |                                                 |                  | 19.7                              | 91.200  | 1,797   |
| EMERGENCY LOCATOR TRANSMITTER INSTL                     |                                                 |                  | 0.0                               | 0.000   | 0       |
| ENGINE, LYCOMING IO-360-L2A                             |                                                 |                  | 0.0                               | 0.000   | 0       |
| GDL-69A WEATHER DATALINK RECEIVER                       |                                                 |                  | 4.0                               | 47.000  | 188     |
| PROPELLER ASSY, MCCAULEY, FIXED PITCH, 1A170E/JHA7660   |                                                 |                  | 0.0                               | 0.000   | 0       |
| STC SA01700LA FRONT SEAT INFLATABLE RESTRAINT SYSTEM    |                                                 |                  | 3.8                               | 45.300  | 172     |
| VINYL/LEATHER SEATS                                     |                                                 |                  | 0.0                               | 0.000   | 0       |
| WHEEL FAIRING INSTALLATION                              |                                                 |                  | 16.5                              | 46.100  | 761     |
| FIRE EXTINGUISHER INSTALLATION                          |                                                 |                  | 0.0                               | 0.000   | 0       |
| INTERIOR INSTALLATION                                   |                                                 |                  | 0.0                               | 0.000   | 0       |
| AFT AVIONICS COOLING FAN                                |                                                 |                  | 1.1                               | 109.500 | 120     |
| AVIONICS COOLING FAN                                    |                                                 |                  | 0.5                               | 12.400  | 6       |
| EQUIPMENT REMOVED FOR NAVIII                            |                                                 |                  | -34.4                             | 48.700  | -1,675  |
| GDC-74 AIR DATA COMPUTER (ADC)                          |                                                 |                  | 1.7                               | 118.690 | 202     |
| GDU-1040 MFD DISPLAY                                    |                                                 |                  | 6.4                               | 16.260  | 104     |
| GDU-1040 PDF DISPLAY                                    |                                                 |                  | 6.4                               | 16.260  | 104     |
| GEA-71 ENGINE ANALYZER                                  |                                                 |                  | 2.2                               | 11.450  | 25      |
| GIA-63#1 COM/NAV/GPS COMPUTER                           |                                                 |                  | 5.2                               | 113.400 | 590     |
| GIA-63#2 COM/NAV/GPS COMPUTER                           |                                                 |                  | 5.2                               | 113.400 | 590     |
| GMA-1347 AUDIO PANEL                                    |                                                 |                  | 1.5                               | 14.000  | 21      |
| GMU-44 MAGNETOMETER                                     |                                                 |                  | 0.3                               | 52.650  | 16      |
| GRS-77 ATTITUDE HEADING REFERENCE SYSTEM (AHRS)         |                                                 |                  | 2.5                               | 118.750 | 297     |
| GTX-33 MODE S TRANSPONDER                               |                                                 |                  | 3.8                               | 114.000 | 433     |
| MFD FAN                                                 |                                                 |                  | 0.1                               | 13.870  | 1       |
| NAV III ANTENNA WIRING                                  |                                                 |                  | 3.5                               | 44.000  | 154     |
| NAV III AVIONICS WIRING                                 |                                                 |                  | 25.7                              | 55.000  | 1,414   |
| PFD FAN                                                 |                                                 |                  | 0.1                               | 13.660  | 1       |
| SINGLE VACUUM PUMP                                      |                                                 |                  | 3.1                               | -6.520  | -20     |
| STANDBY BATTERY INSTALLATION                            |                                                 |                  | 14.0                              | 11.200  | 157     |
| WIRING SUPPORT MODULE                                   |                                                 |                  | 0.7                               | 12.000  | 8       |

The weight and balance data shown in this report are computed on the basis of Federal

Weighed: 05/17/2006

Administration approved procedures for establishing fleet weight averages. [Far 21.327(f)(2)]

Printed: 05/30/2006

This list contains all installed optional equipment and avionics. All weights and arms are the installed difference from a standard equipped aircraft. For a detailed list of aircraft equipment weight and balance data, please refer to the comprehensive equipment list in the pilots operating handbook.

|                         |         |        |        |
|-------------------------|---------|--------|--------|
| BASIC EMPTY WEIGHT      | 1,737.9 | 40.975 | 71,211 |
| USEFUL LOAD             | 820.1   |        |        |
| MAXIMUM RAMP WEIGHT     | 2,558.0 |        |        |
| MAXIMUM TAKE-OFF WEIGHT | 2,550.0 |        |        |

Revised 27 Aug. 2005

Numerical values shown may be rounded from actual values. Therefore, the product of weight times arm may not equal the listed be rounded from actual values. Therefore, the product of weight times arm may not equal the listed moment.

### Airspeed limitations

| Symbol | Description                                                                                    | Indicated airspeed (Knots)                                               | Marking on A/S indicator                      |
|--------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------|
| VSO    | Stall speed at landing configuration                                                           | 40 KIAS                                                                  | Beginning of white arc.                       |
| VS     | Stall speed at clean configuration                                                             | 48 KIAS                                                                  | Beginning of green arc.                       |
| VR     | Rotation speed                                                                                 | 55 KIAS                                                                  | Not marked.                                   |
| VX     | Best angle-of-climb speed                                                                      | 62 KIAS at sea level<br>67 KIAS at 10,000'                               | Not marked.                                   |
| VY     | Best rate-of-climb speed                                                                       | 74 KIAS at sea level<br>72 KIAS at 10,000'                               | Not marked.                                   |
| VFE    | Max. flap extended speed                                                                       | 10° flaps 110 KIAS<br>10°-30° 85 KIAS                                    | White arc ends at 85 KIAS.                    |
| VA     | Maneuvering speed. Do not make full or abrupt control maneuvers above this speed.              | 105 KIAS at max takeoff weight<br>98 KIAS @ 2200 lb<br>90 KIAS @ 1900 lb | Not marked.                                   |
| VNO    | Max. structural cruising speed. Do not exceed except in smooth air and then only with caution. | 129 KIAS                                                                 | End of green arc.<br>Beginning of yellow arc. |
| VNE    | Never Exceed speed.                                                                            | 163 KIAS                                                                 | Red line.                                     |