N35VC

1969 Cessna 401A

POH Performance

MSN: 401A0126

Prepared by the worldwide aviation specialists at RidgeAire, Inc.

Cessna

SALES AND SERVICE

MORE PEOPLE BUY AND FLY CESSNA AIRPLANES THAN ANY OTHER MAKE

WORLD'S LARGEST PRODUCER OF GENERAL AVIATION AIRCRAFT SINCE 1956

MODEL 401A

OWNER'S MANUAL

PERFORMANCE AND SPECIFICATIONS

GROSS WEIGHT:	
Takeoff	6300 lbs.
Landing	6200 lbs.
SPEED BEST POWER MIXTURE:	
Maximum - 16,000 ft.	261 mph.
Maximum Recommended Cruise	
75% Power at 20,000 ft.	240 mph.
RANGE, NORMAL LEAN MIXTURE:	
Maximum Recommended Cruise	
75% Power at 10,000 ft.	660 mi.
100 Gallons, No Reserve	3.05 hrs.
	216 mph.
75% Power at 10,000 ft.	924 mi.
140 Gallons, No Reserve	4.27 hrs.
	216 mph.
75% Power at 10,000 ft.	1186 mi.
180 Gallons, No Reserve	5.49 hrs.
	216 mph.
75% Power at 20,000 ft.	694 mi.
100 Gallons, No Reserve	2.94 hrs.
	236 mph.
75% Power at 20,000 ft.	972 mi.
140 Gallons, No Reserve	4.12 hrs.
	236 mph.
75% Power at 20,000 ft.	1248 mi.
180 Gallons, No Reserve	5.29 hrs.
	236 mph.
Maximum Range	
10,000 ft., 100 Gallons, No Reserve	808 mi.
	4.70 hrs.
	172 mph.
10,000 ft., 140 Gallons, No Reserve	1131 mi.
	6.58 hrs.
	172 mph.
10,000 ft., 180 Gallons, No Reserve	1453 mi.
	8.45 hrs.
	172 mph.
25,000 ft., 100 Gallons, No Reserve	808 mi.
	3.76 hrs.
	215 mph.
25,000 ft., 140 Gallons, No Reserve	1131 mi.
	5.26 hrs.
	215 mph.
25,000 ft., 180 Gallons, No Reserve	1454 mi.
	6.76 hrs.
	215 mph.
RATE OF CLIMB AT SEA LEVEL:	
Twin Engine	1610 fpm.
Single Engine	255 fpm.
SERVICE CEILING:	
Twin Engine	26,180 ft.
Single Engine	11,700 ft.
TAKEOFF PERFORMANCE: Takeoff Speed (105 MPH)	
Ground Run	1695 ft.
Total Distance Over 50-foot Obstacle	2220 ft.
LANDING PERFORMANCE: Approach Speed (110 MPH)	
Ground Run	777 ft.
Total Distance Over 50-foot Obstacle	1765 ft.
EMPTY WEIGHT: (Approximate)	3669 lbs.
BAGGAGE ALLOWANCE:	930 lbs.
WING LOADING:	32.2 lbs./sq. ft.
POWER LOADING:	10.5 lbs./hp.
FUEL CAPACITY: TOTAL	
Standard	102 gals.
Optional Auxiliary Tanks	143 gals.
Optional Auxiliary Tanks and Wing Locker Tanks	184 gals.
OIL CAPACITY: TOTAL	6.5 gals.
ENGINES:	
Continental 6-Cylinder Turbocharged Fuel Injection Engines	TSIO-520-E
300 Rated HP at 2700 Propeller RPM and 34.5" MP to 16,000 ft.	
PROPELLERS:	
Constant Speed, Full Feathering, Three Bladed 76.5" Diameter	3AF32C97/82NC-5.5

CONGRATULATIONS . . . . . .

Welcome to the ranks of Cessna Owners . Your Cessna has been designed and constructed to give you the most in performance, economy, and comfort. It is our desire that you will find flying it, either for business or pleasure, a pleasant and profitable experience.

This Owner's Manual has been prepared as a guide to help you get the most pleasure and utility from your Model 401A. It contains information about your Cessna's equipment, operating procedures, and performance; and suggestions for its servicing and care. We urge you to read it from cover to cover and to refer to it frequently.

Our interest in your flying pleasure has not ceased with your purchase of a Cessna. World-wide the Cessna Dealer Organization, backed by the Cessna Service Department, stands ready to serve you. The following services are offered by most Cessna Dealers:

FACTORY TRAINED PERSONNEL to provide you with courteous expert service.

FACTORY APPROVED SERVICE EQUIPMENT to provide you with the most efficient and accurate workmanship possible.

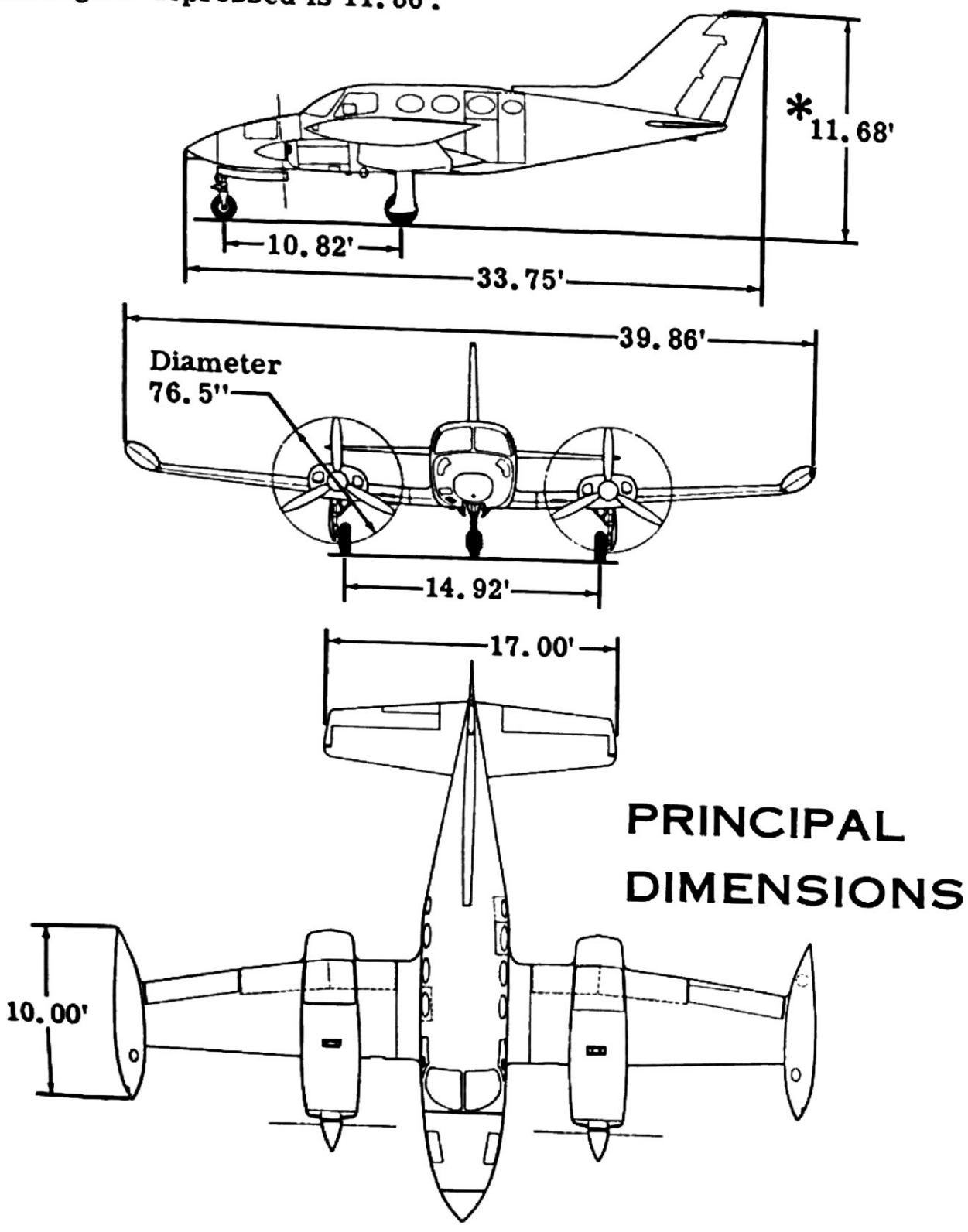
A STOCK OF GENUINE CESSNA SERVICE PARTS on hand when you need them.

THE LATEST AUTHORITATIVE INFORMATION FOR SERVICING CESSNA AIRPLANES, since Cessna Dealers have all of the Service Manuals and Parts Catalogs, kept current by Service Letters and Service News Letters published by Cessna Aircraft Company.

We urge all Cessna owners' to use the Cessna Dealer Organization to the fullest.

A current Cessna Dealer Directory accompanies your new airplane. The Directory is revised frequently, and a current copy can be obtained from your Cessna Dealer. Make your Directory one of your cross-country flight planning aids; a warm welcome awaits you at every Cessna Dealer.

...ximum height of airplane with nose gear depressed is 11.86'.



PRINCIPAL DIMENSIONS

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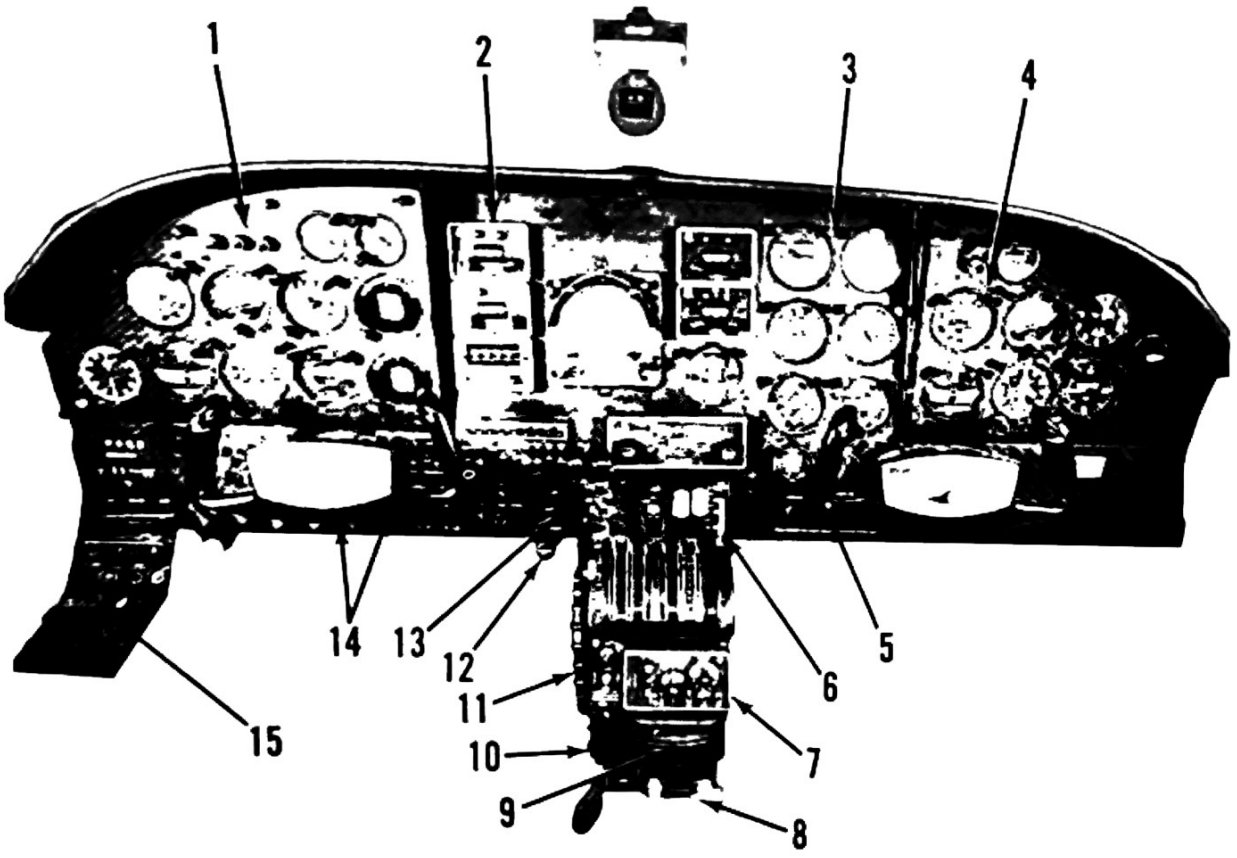
INSTRUMENT PANEL



1. FLIGHT INSTRUMENT GROUPING
2. RADIO COMMUNICATION AND NAVIGATION PANEL (OPTIONAL)
3. ENGINE INSTRUMENT GROUPING
4. RIGHT HAND FLIGHT INSTRUMENT GROUPING (OPTIONAL)
5. HEATER CONTROL PANEL
6. FLAP POSITION SWITCH
7. AUTO-PILOT CONTROL HEAD (OPTIONAL)
8. COWL FLAP CONTROLS
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14. ALTERNATE AIR CONTROLS
15. SWITCH AND CIRCUIT BREAKER PANEL

401A

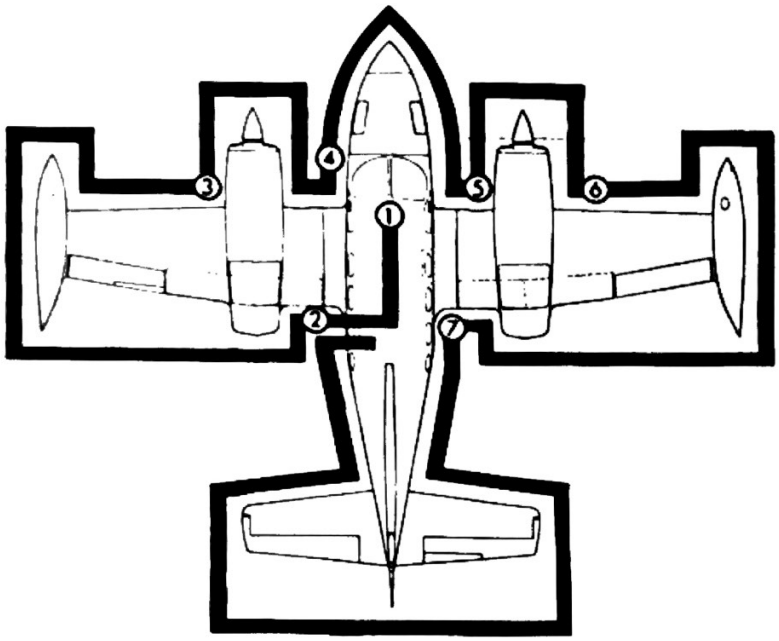
SECTION I
OPERATING CHECKLIST

One of the first steps in obtaining the utmost performance service, and flying enjoyment from your Cessna Model 401A is to familiarize yourself with your aircrafts equipment, systems, and controls. This can best be done while setting in the airplane. Those items whose functions and operation are not obvious are covered in Section II.

Section I lists in Checklist Form, the steps necessary to operate your aircraft efficiently and safely. It covers briefly all the points that you should know concerning the information you need for a typical flight.

The flight and operational characteristics of your airplane are normal in all respects. All controls respond in the normal way within the entire range of operation. All airspeeds mentioned in Sections I and II are indicated airspeeds unless otherwise noted. Corresponding calibrated airspeeds may be obtained from the Airspeed Calibration Chart in Section VI.

PREFLIGHT INSPECTION



1. a. Control Lock - REMOVE and STOW.
   b. Parking Brake - SET.
   c. All Switches - OFF.
   d. Landing Gear Switch - DOWN.
   e. Battery Switch - ON.
   f. Fuel Gages - CHECK QUANTITY and OPERATION.
   g. Flaps - EXTEND.
   h. Battery Switch - OFF.
   i. Left Fuel Selector - LEFT MAIN (feel for detent).
   j. Right Fuel Selector - RIGHT MAIN (feel for detent).
   k. Trim Tab Controls (3) - NEUTRAL.
   l. Oxygen - CHECK QUANTITY, MASKS and HOSES - OFF.

2. a. Battery Compartment Cover - SECURE.
   b. Wing Locker Baggage Door - SECURE.
   c. Flap - CHECK SECURITY and ATTACHMENT.
   d. Wing Locker Sump - DRAIN.
   e. Control Surface Lock - REMOVE.
   f. Aileron and tab - CHECK CONDITION and FREEDOM OF MOVEMENT.
   g. Fuel Sump (Main Tank) - DRAIN.
   h. Fuel Vent and Sniffle Valve - CLEAR.
   i. Fuel Quantity (Main Tank) - CHECK, CAP SECURE.
   j. Stall Warning Vane - CHECK FREEDOM OF MOVEMENT.
   k. Wing Tie Down - REMOVE.
   l. Fuel Quantity (Auxiliary Tank) - CHECK, CAP SECURE.
   m. Fuel Sump (Auxiliary Tank and Wing Locker Transfer Lime)- DRAIN.
   n. Fuel Vent (Wing Locker Tank) - CLEAR, CAP SECURE.

3. a. Fuel Strainer - DRAIN.
   b. Cowl Flap - SECURE.
   c. Engine Compartment General Condition - CHECK.
   d. Oil Level - CHECK, MINIMUM 9 QUARTS.
   e. Propeller and Spinner - EXAMINE FOR NICKS, SECURITY and OIL LEAKS.
   f. Cowl Flap - SECURE.
   g. Main Gear, Strut, Doors and Tire - CHECK.
   h. Leading Edge Air Intake - CLEAR.
   i. Cross Feed Line - DRAIN.

4. a. Baggage Door - SECURE.
   b. Nose Gear, Strut, Doors and Tire - CHECK.
   c. Pitot Cover (If Installed) - REMOVE, Pitot Tube - CLEAR.
   d. Tie Down - REMOVE
   e. Heater Inlet - CLEAR.
   f. Baggage Door - SECURE.

5. a. Crossfeed Line - DRAIN.
   b. Leading Edge Air Intake - CLEAR.
   c. Main Gear, Strut, Doors and Tire - CHECK.
   d. Cowl Flap - SECURE.
   e. Fuel Quantity (Wing Locker Tank) - CHECK, CAP SECURE.
   f. Oil Level - CHECK, MINIMUM 9 QUARTS.
   g. Engine Compartment and General Condition - CHECK.
   h. Propeller and Spinner - EXAMINE FOR NICKS, SECURITY and OIL LEAKS.

i. Cowl Flap - SECURE.
j. Fuel Strainer - DRAIN.

6. a. Fuel Vent (Wing Locker Tank) - CLEAR.
b. Fuel Sump (Auxiliary Tank and Wing Locker Transfer Line) - DRAIN.
c. Fuel Quantity (Auxiliary Tank) - CHECK, CAP SECURE.
d. Wing Tie Down - REMOVE.
e. Fuel Quantity (Main Tank) - CHECK, CAP SECURE.
f. Fuel Vent and Sniffle Valve - CLEAR.
g. Fuel Sump (Main Tank)- DRAIN.
h. Aileron - CHECK CONDITION and FREEDOM OF MOVEMENT.
i. Control Surface Lock - REMOVE.
j. Flaps - CHECK SECURITY and ATTACHMENT.
k. Nacelle Baggage Door - SECURE.

7. a. Static Port - CLEAR.
b. Control Surface Lock - REMOVE.
c. Tie Down - REMOVE.
d. Static Port - CLEAR.
e. Cabin Door, General Condition and Security - CHECK.

(1) Preflight Inspection - COMPLETE.
(2) Cabin Door Safety - LATCHED.
(3) Control Lock - OFF.
(4) Seat and Seat Belts - ADJUST and SECURE.
(5) Landing Gear Switch - DOWN.
(6) Emergency Power Switch - OFF.
(7) Voltage Regulator Switch - MAIN.
(8) Circuit Breakers - IN.
(9) Switches - OFF.
(10) Auxiliary Fuel Pump Switches - OFF.
(11) Magneto Switches - OFF.
(12) Battery and Alternators - ON.

NOTE

When using external power source, do not turn on the battery or alternator switches until external power source is disconnected to avoid damage to the alternators and a weak battery draining off part of the current being supplied by the external source.

(13) Parking Brake - SET.
(14) Lighting Rheostats - OFF.
(15) Cowl Flaps - OPEN.
(16) Altimeter and Clock - SET.
(17) Heater Overheat - T & B - Press-to-test.
(18) Cabin Door Not Locked Light - OFF - Press-to-test.

NOTE

If top half of door is still open, the light will not go out.

(19) Gear Retracted Light - Press-to-test.
(20) Gear Extend Lights - ON.
(21) Wing Flaps - UP.
(22) Cabin Air Controls - AS REQUIRED.
(23) Fuel Quantity - CHECK.
(24) Radios - OFF.
(25) Throttles - Open, one inch.
(26) Propellers - FORWARD.
(27) Mixtures - FULL RICH.
(28) Fuel Selectors - Left Engine - LEFT MAIN (feel for detent).
Right Engine - RIGHT MAIN (feel for detent).

STARTING ENGINES (Left Engine First)

NORMAL START (NO EXTERNAL POWER)

(1) Propellers - CLEAR.
(2) Magneto Switches - ON.
(3) Left Engine - START.
(a) Starter Button - PRESS.
(b) Primer Switch - Left Engine - LEFT.
Right Engine - RIGHT.

CAUTION

- If the primer switch is actuated longer than two or three seconds with the engine inoperative on the ground, damage may be incurred to the engine and/or aircraft due to excessive fuel accumulation.

- During very hot weather, caution should be exercised to prevent overpriming the engines.
- The auxiliary fuel pump switches should be placed to the LOW position after the engine has started, to assure vapor clearing and purging of the fuel system.

(4) Auxiliary Fuel Pump - LOW.
(5) Throttle - 1000 to 1200 RPM.
(6) Oil Pressure - 10 PSI minimum in 30 seconds in normal weather or 60 seconds in cold weather. If no indication appears, shut-down engine and investigate.
(7) Right Engine - START (repeat steps 1 through 6).
(8) Alternators - CHECK
(9) Regulators - CHECK
(10) Radios - ON.

STARTING ENGINES (Left Engine First)

WITH EXTERNAL POWER SOURCE

(1) Battery and Alternators - OFF.
(2) External Power Source - PLUG IN.
(3) Propeller - CLEAR.
(4) Magneto Switches - ON.
(5) Left Engine - START.
  (a) Starter Button - PRESS.
  (b) Primer Switch - Left Engine - LEFT.
    Right Engine - RIGHT.

CAUTION

- If the primer switch is actuated longer than two or three seconds with the engine inoperative on the ground, damage may be incurred to the engine and/or aircraft due to excessive fuel accumulation.
- During very hot weather, caution should be exercised to prevent overpriming the engines.
- The auxiliary fuel pump switches should be placed to the LOW position after the engine has started, to assure vapor clearing and purging of the fuel system.

(6) Auxiliary Fuel Pump - LOW.
(7) Throttle - 1000 to 1200 RPM.
(8) Oil Pressure - 10 PSI minimum in 30 seconds in normal weather or 60 seconds in cold weather. If no indication appears, shut-down engine and investigate.
(9) Right Engine - START (repeat steps 3 through 8).
(10) External Power Source - UNPLUG.
(11) Battery and Alternators - ON.
(12) Alternators - CHECK.
(13) Regulators - CHECK.
(14) Radios - ON.

BEFORE TAKEOFF

(1) Parking Brake - SET.
(2) Throttles - 1700 RPM.
(3) Alternators - CHECK.
(4) Regulators - CHECK.
(5) Magnetos - CHECK (150 RPM maximum drop with a maximum of 50 RPM difference).
(6) Propellers - Check feathering to 1200 RPM; return to HIGH RPM.
(7) Vacuum System - CHECK (4.75 to 5.25 in. Hg).
(8) With Optional Electric Directional Gyro, Gyro Pwr. Fail Light Out - CHECK.
(9) Trim Tabs - SET.
(10) Alternate Air Controls - IN.
(11) Flight Controls - CHECK, FREE and CORRECT.
(12) Cowl Flaps - OPEN.
(13) Cabin Door - LOCKED.
(14) Wing Flaps - 0°.
(15) Engine Instruments - CHECK, green arc.

NOTE

The engine oil temperature should be within the normal operating range prior to applying takeoff power. Even cautious power applications with cool oil may result in momentarily exceeding the 34.5 inches Hg. manifold pressure limits.

(16) Fuel Quantity - CHECK.
(17) Flight Instruments and Radio - SET.

(18) Fuel Selectors - RECHECK - Left Engine - LEFT MAIN (feel for detent).
Right Engine - RIGHT MAIN (feel for detent).

(19) Lights - AS REQUIRED.
(20) Auxiliary Fuel Pumps - ON.
(21) Parking Brake - RELEASE.

TAKEOFF

NORMAL TAKEOFF

(1) Power - Full throttle and 2700 RPM.

NOTE

Apply full throttle smoothly to avoid propeller surging and excessive manifold pressures. Do not exceed 34.5 inches Hg. manifold pressure at any time.

(2) Elevator Control - Raise nose wheel at 95 MPH IAS.
(3) Minimum Control Speed - 95 MPH IAS.
(4) Break Ground and Climb Out at 105 MPH IAS.

AFTER TAKEOFF

(1) Brakes - APPLY MOMENTARILY.
(2) Landing Gear - RETRACT (check amber light ON).
(3) Climb Speed - 126 MPH IAS (best multi-engine rate-of-climb speed) or (set up climb speed as shown in Normal Climb paragaraph).
(4) Auxiliary Fuel Pumps - OFF.
(5) Cowl Flaps - AS REQUIRED.

CLIMB

NORMAL CLIMB

(1) Power - 29.5 Inches Hg and 2450 RPM.
(2) Airspeed - 130 - 160 MPH IAS

(3) Mixture - Adjust to climb fuel flow.
(4) Cowl Flaps - AS REQUIRED.
(5) Auxiliary Fuel Pumps - ON (above 12, 000 feet altitude to minimize vapor formation).

MAXIMUM PERFORMANCE CLIMB

(1) Power - Full throttle and 2700 RPM below 16, 000 feet.
Placarded manifold pressure above 16, 000 feet.
(2) Airspeed - 126 MPH IAS
(3) Cowl Flaps - AS REQUIRED.
(4) Auxiliary Fuel Pumps - ON (above 12, 000 feet altitude to minimize vapor formation).

CRUISING

(1) Cruise Power - 15-29. 5 Inches Hg and 2100 - 2450 RPM.
(2) Mixtures - LEAN for desired cruise fuel flow as determined from your Cessna Model 401A Power Computer.
(3) Cowl Flaps - AS REQUIRED.
(4) Fuel Selectors - MAIN TANKS for first 60 minutes. After 60 minutes of flight, if optional fuel tanks are installed, fuel selectors may then be placed in AUXILIARY position. (feel for detent)
(a) If wing locker tanks are installed, fuel selectors - MAIN TANKS or, after wing locker tanks are transferred and main tank quantity is less than 30 gallons each - AUXILIARY TANK.

NOTE

Turn auxiliary fuel pumps to LOW and mixtures to FULL RICH when switching tanks.

(b) If wing locker tanks are installed, crossfeed - SELECT as required to maintain fuel balance after wing locker fuel transfer.

(5) Trim Tabs - ADJUST.

LETDOWN

(1) Power - AS REQUIRED.
(2) Mixture - Adjust for smooth operation with gradual enrichment as altitude is lost.
(3) Cowl Flaps - AS REQUIRED.

NOTE

Avoid steep power-off letdowns with low fuel.

BEFORE LANDING

(1) Fuel Selectors - Left Engine - LEFT MAIN (feel for detent).
Right Engine - RIGHT MAIN (feel for detent).
(2) Auxiliary Fuel Pumps - ON.
(3) Cowl Flaps - CLOSED.
(4) Alternate Air Controls - IN.
(5) Mixtures - FULL RICH or lean as required for smooth operation.
(6) Propellers - FORWARD.
(7) Wing Flaps - 15° below 180 MPH CAS.
(8) Landing Gear - Extend below 160 MPH CAS.
(9) Landing Gear Position Indicator Lights - Check green lights ON.
(10) Wing Flaps - 15° - 45° below 160 MPH CAS.
(11) Minimum Multi-Engine Approach Speed - 110 MPH IAS.
(12) Minimum Single-Engine Control Speed - 95 MPH IAS.
Heater - Off

LANDING

(1) Touchdown - Main wheels first.
(2) Landing Roll - Lower nose wheel gently.
(3) Braking - As required.

GO-AROUND (Multi-Engine)

(1) Increase engine speed to 2700 RPM and apply full throttle if necessary.
(2) Reduce flaps setting to 15°.

(3) Trim airplane for climb.
(4) Retract flaps as soon as all obstacles are cleared and a safe altitude and airspeed are obtained.

NOTE

Do not retract landing gear if another landing approach is to be conducted.

AFTER LANDING

(1) Auxiliary Fuel Pumps - LOW (during landing roll).
(2) Cowl Flaps - OPEN.
(3) Wing Flaps - UP.

SECURE AIRCRAFT

(1) Auxiliary Fuel Pumps - OFF.
(2) Radios - OFF.
(3) Throttles - IDLE.
(4) Propellers - FORWARD.
(5) Mixtures - IDLE CUT-OFF.
(6) Fuel Selectors - OFF (if a long period of inactivity is anticipated).

NOTE

Do not leave the fuel selector handles in an intermediate position as fuel from the main tip tanks will transfer into the auxiliary tanks.

(7) Switch Breakers - OFF.
(8) Magneto Switches - OFF, after engines stop.
(9) Battery and Alternator Switches - OFF.
(10) Parking Brake - SET.
(11) Control Lock - INSTALL.
(12) Cabin Door - CLOSE.

401A

SECTION IV
OPERATING LIMITATIONS

OPERATIONS AUTHORIZED

Your Cessna with standard equipment, as certified under FAA Type Certificate A7CE, is approved for day and night operation under VFR and IFR conditions as set forth by the United States Government.

Your airplane must be operated in accordance with the Cessna Model 401A FAA Approved Airplane Flight Manual, which was provided to you with the rest of the papers in your airplane. The following information is a duplication of that presented in the Cessna Model 401A FAA Approved Airplane Flight Manual.

MANEUVERS-NORMAL CATEGORY

Your Cessna exceeds the requirements for airworthiness as set forth by regulations by the FAA. Spins and aerobatic maneuvers are not permitted in normal category airplanes in compliance with these regulations. In connection with the foregoing, the following gross weight and flight load factors apply.

Maximum Takeoff Weight	6300 lbs.
Maximum Landing Weight	6200 lbs.
*Flight Load Factor (at design gross weight of 6300 lbs.)	
Flaps UP	+3.6G
	-1.44G
Flaps DOWN	+2.0G

*The design load factors are 150% of the above and in all cases the structure exceeds design loads.

AIRSPEED LIMITATIONS (CAS)

Maximum Structural Cruising Speed	
Level Flight or Climb	230 MPH
Maximum Speed	
Flaps Extended 15°	180 MPH
Flaps Extended 15° - 45°	160 MPH
Gear Extended	160 MPH
*Maximum Maneuvering Speed	180 MPH

*The maximum speed at which you can use abrupt control travel.

AIRSPEED INDICATOR INSTRUMENT MARKINGS

The following is a list of the certificated calibrated airspeed (CAS) limitations for the airplane.

Never Exceed (glide or dive, smooth air)	266 MPH (red line)
Caution Range	230 to 266 MPH (yellow arc)
Normal Operating Range	95 to 230 MPH (green arc)
Flap Operating Range (0° - 45°)	80 to 160 MPH (white arc)
Minimum Control Speed	95 MPH (red line)
Best Single-Engine Rate of Climb	118 MPH (blue line)

ENGINE OPERATION LIMITATIONS

Maximum Power and Speed
(for all operations) 300 BHP at 2700 RPM and 34.5 in. Hg. MP

ENGINE INSTRUMENT MARKINGS

OIL TEMPERATURE GAGES

Normal Operating Range	75° to 240° F (green arc)
Maximum Temperature	240° F (red line)

OIL PRESSURE GAGES

Idling Pressure	10 PSI (red line)
Normal Operating Range	30 to 60 PSI (green arc)
Maximum Pressure	100 PSI (red line)

CYLINDER HEAD TEMPERATURE

Normal Operating Range	200° F to 460° F (green arc)
Maximum Temperature	460° F (red line)

MANIFOLD PRESSURE

Normal Operating Range	15 to 29.5 in. Hg. (green arc)
Maximum Pressure	34.5 in. Hg. (red line)

MAXIMUM ALLOWABLE MANIFOLD PRESSURE

ALTITUDE	MAX ALLOWABLE M. P.	ALTITUDE	MAX ALLOWABLE M. P.
SEA LEVEL		24, 000	25.1
TO 16, 000	34.5	26, 000	23.0
18, 000	31.8	28, 000	22.0
20, 000	29.5	30, 000	19.0
22, 000	27.3		

TACHOMETER

Normal Operating Range	2100 to 2450 RPM (green arc)
Maximum Speed	2700 RPM (red line)

FUEL FLOW

Normal Operating Pressure	6.0 to 31.17 GPH (green arc)
Minimum and Maximum Fuel Flows	0 and 31.83 GPH (red line)
	3.0 and 17.3 PSI (red line)

WING LOCKERS

The wing lockers are intended primarily for low density items such as luggage and briefcases. The floor of the wing lockers, in particular, is primary structure; therefore, care should be exercised during loading and unloading to prevent damage. When loading high density objects, insure that adequate protection is available to prevent damage to any of the airplane's primary structure.

WEIGHT AND BALANCE

The following information will enable you to operate your Cessna Model 401A within the prescribed weight and center of gravity limitations. To figure the weight and balance for your particular aircraft, use Figures 4-1, 4-2, 4-3 and 4-4 as follows:

Take the licensed Empty Weight and Moment/1000 from the Weight and Balance Data Sheet, plus any changes noted on forms FAA-337, carried in your aircraft, and write them down in the proper columns of Figure 4-1. Using Figures 4-2 and 4-3, determine the moment/1000 of each item to be carried. Total the weight and moments/1000 and use Figure 4-4 to determine whether the point falls within the envelope and if loading is acceptable.

CARGO LOADING

If cargo is carried, it is necessary to properly locate and secure the load before flight and the following limitations must be followed:

(1) Maximum cargo load aft of the front spar is not to exceed 1200 pounds.

(2) Maximum cargo load in any 25 inch length of cabin is not to exceed 300 pounds.

(3) Tie-downs shall be provided in such a manner that at least one forward and one aft tie-down will be available for each 100 pounds of cargo when tie-down rings are used, or 200 pounds when tie-down bolts are used, with a minumum of four tie-downs for any one piece of cargo. Tie-downs are to be located at seat stop hole locations only.

(4) A system of retention, suitable to the cargo being loaded and having strength compatable to the seat rail tie-downs, must be used.

(5) The total aircraft loading must be consistent with the weight and balance limitations of the passenger configuration aircraft.

(6) If the cargo has a smooth, reasonably flat lower surface, load densities of up to 200 pounds per square foot may be loaded on the floorboards. For higher density objects, with rough or sharp edged supports, suitable supports such as plywood or thin lumber should be employed to reduce the floor pressure load

(7) The bulk and position of the loaded cargo should be such as to permit entrance and emergency exit of pilot and passenger.

(8) See Weight and Balance Form for loading with camera provisions installed.

MODEL 401A SAMPLE PROBLEM	Sample Aircraft		Your Aircraft	
	Weight (lbs)	Moment (lbs. -ins. /1000)	Weight (lbs)	Moment (lbs. -ins. /1000)
1. Licensed Empty Weight (Sample Aircraft)	4094.0	633.6		
2. Oil *(26 Qts. x 1.875 lb/qt.)	49.0	5.6	49.0	5.6
3. Pilot & Front Passenger	340.0	46.6		
4. Center Passengers	340.0	59.7		
5. Rear Passengers	340.0	73.3		
6. 7 & 8 Place Passengers				
7. Fuel (gals. x 6 lbs./gal.)				
Main Tanks (100 gals.)	600.0	91.2		
Optional Wing Tanks	240.0	39.4		
Wing Locker Tanks	57.0	9.5		
8. Baggage				
Nose	85.0	60.4		
Cabin	35.0	8.6		
Wing Lockers	120.0	22.3		
9. Cargo				
A				
B				
C				
D				
10. Total Aircraft Weight (Loaded)	6300.0	995.7		
11. Locate this point (6300.0 at 995.7) on Figure 4-4 and since this point falls within the envelope, the loading is acceptable.				
*Note: Normally full oil may be assumed for all flights.				

Figure 4-1

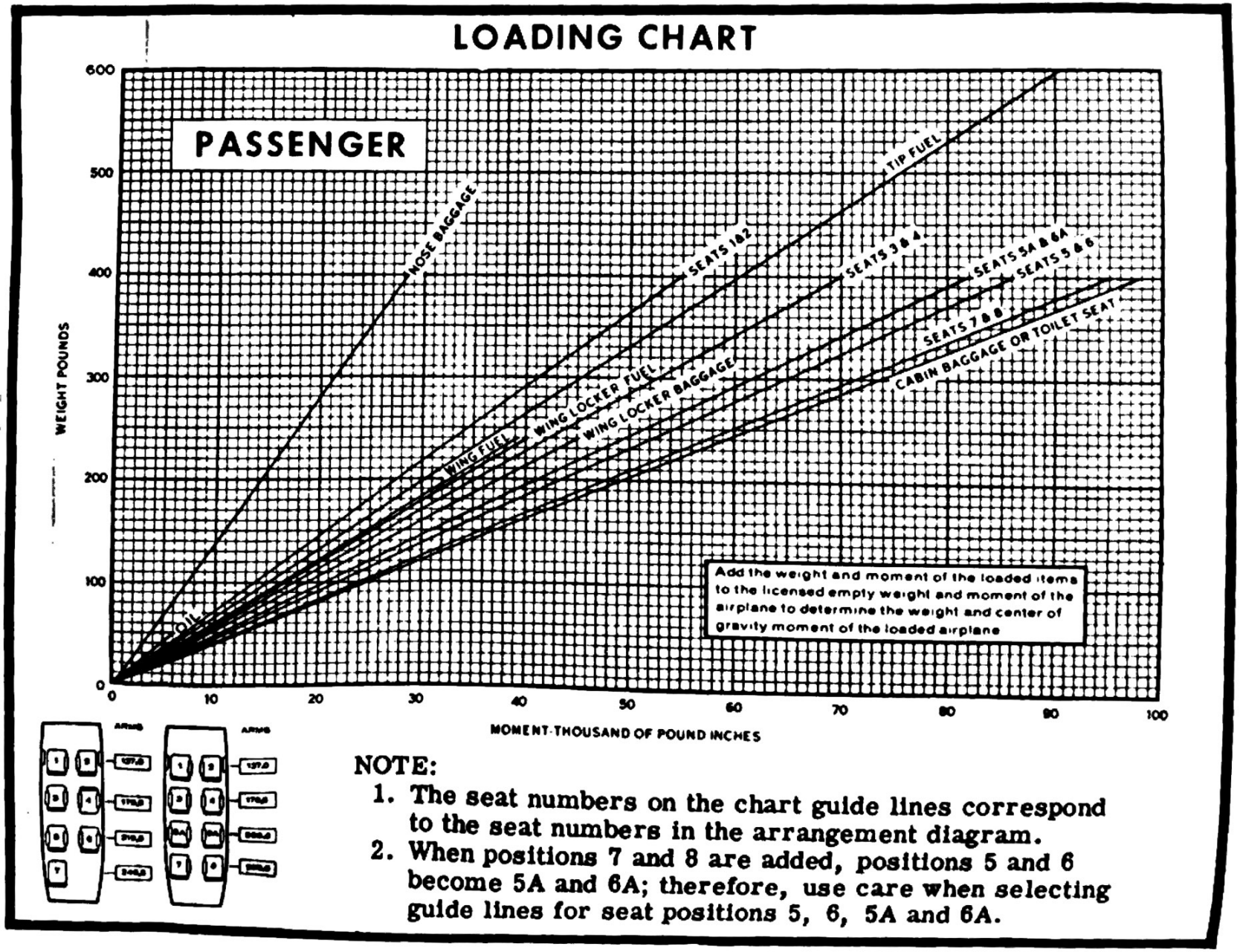
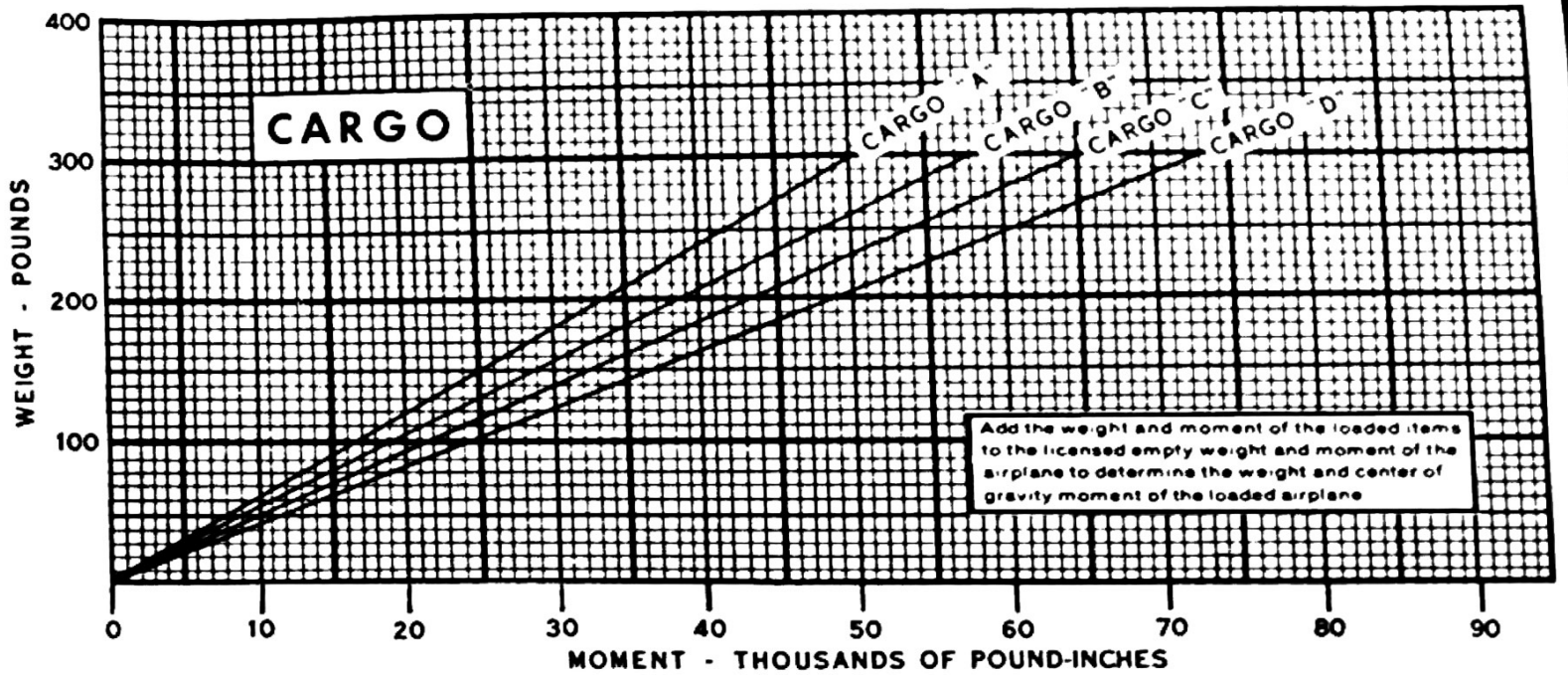
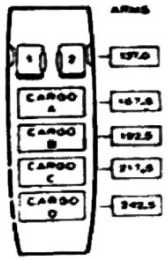

LOADING CHART
PASSENGER
WEIGHT POUNDS
600
500
400
300
200
100
0
NOSE BAGGAGE
SEATS 1&2
SEATS 3&4
SEATS 5A&6A
SEATS 5&6
SEATS 7&8
CABIN BAGGAGE OR TOILET SEAT
TIP FUEL
WING FUEL
WING LOCKER FUEL
WING LOCKER BAGGAGE
OIL
Add the weight and moment of the loaded items to the licensed empty weight and moment of the airplane to determine the weight and center of gravity moment of the loaded airplane
0
10
20
30
40
50
60
70
80
90
100
MOMENT-THOUSAND OF POUND INCHES
NOTE:
1. The seat numbers on the chart guide lines correspond to the seat numbers in the arrangement diagram.
2. When positions 7 and 8 are added, positions 5 and 6 become 5A and 6A; therefore, use care when selecting guide lines for seat positions 5, 6, 5A and 6A.

Figure 4-2

LOADING CHART





NOTE:

1. The cargo positions on the chart guide lines correspond to the cargo positions in the arrangement diagram.

Figure 4-3

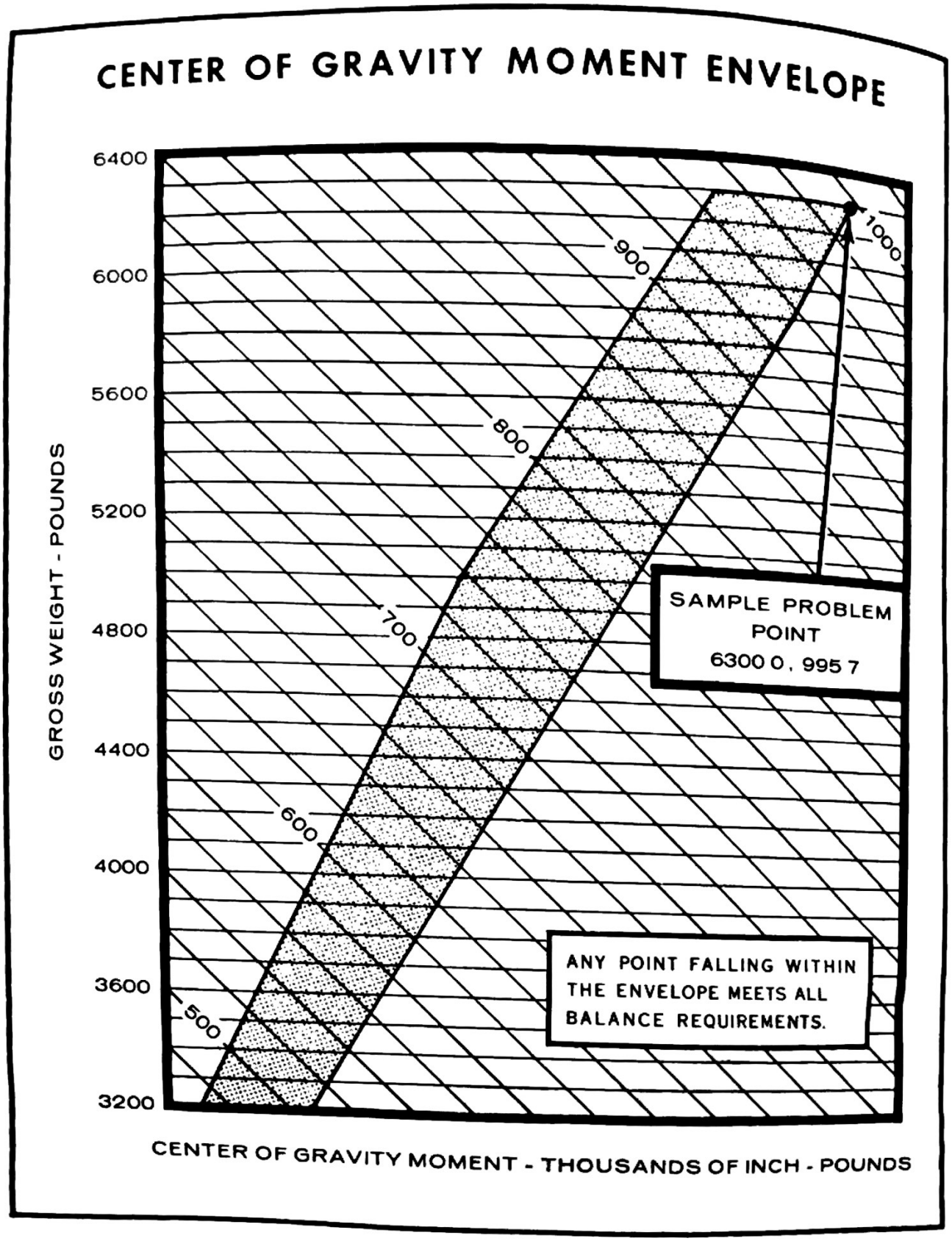

CENTER OF GRAVITY MOMENT ENVELOPE
6400
6000
5600
5200
4800
4400
4000
3600
3200
GROSS WEIGHT - POUNDS
500
600
700
800
900
1000
SAMPLE PROBLEM
POINT
6300 0 , 995 7
ANY POINT FALLING WITHIN
THE ENVELOPE MEETS ALL
BALANCE REQUIREMENTS.
CENTER OF GRAVITY MOMENT - THOUSANDS OF INCH - POUNDS

Figure 4-4

"TAKE YOUR CESSNA HOME
FOR SERVICE AT THE SIGN
OF THE CESSNA SHIELD".

CESSNA AIRCRAFT COMPANY

WICHITA, KANSAS