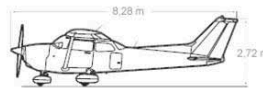
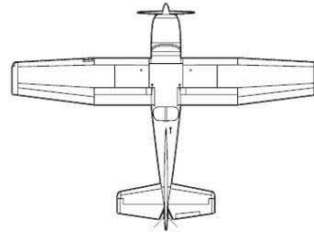


John Vahey Training Presentation



N5312S

Differences



Initial Checkout

GACE Procedures Manual Section 4.8.1

Requirements to act as Pilot-in-Command of a Club fixed gear aircraft are:

◦ 5 hours make and model (no 5 hours make and model, a 3 hour checkout by a Club CFI, consisting of more than one flight.)

This is a 172. If you have more than 5 hours in a 172, flight and ground training required for the checkout is at the discretion of the Club CFI.

Annual Checkout Requirements

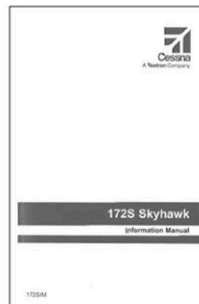
GACE Procedures Manual Section 4.8.1

All Club Members shall demonstrate their proficiency, to safely fly Club aircraft, by means of an initial and annual written test and check ride, in the make/model of aircraft having the highest gross weight in which the member wishes to fly. CFIs shall require a standardization ride by the Chief Flight Instructor.

RTFM

This presentation is not a substitute
for a careful reading
of the Aircraft Flight Manual.

<http://www.esscoaircraft.com/>



Part # 172SIM

\$53.00

Door Latch

- **Outside door handle must be extended out whenever doors are open. When closing the door, do not attempt to push the door handle in until the door is fully shut.**
- **Accidental opening** - no need to land, establish trimmed flight at 75 kts, push door out and forcefully close.

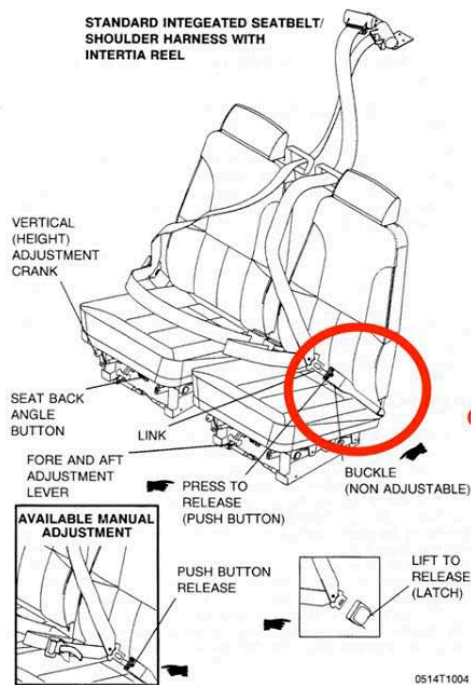


Figure 7-4. Crew Seats, Seat Belts and Shoulder Harnesses

Seats and Belt/Harness

Seat adjustment controls

Fore and aft - plastic handle centered under seat frame

Height - crank handle under right side

Recline - Release button center of seat just below seat bottom

Move seat belt attach arm down and out of the way before entering/exiting aircraft

Normal Procedures

Cabin Preflight

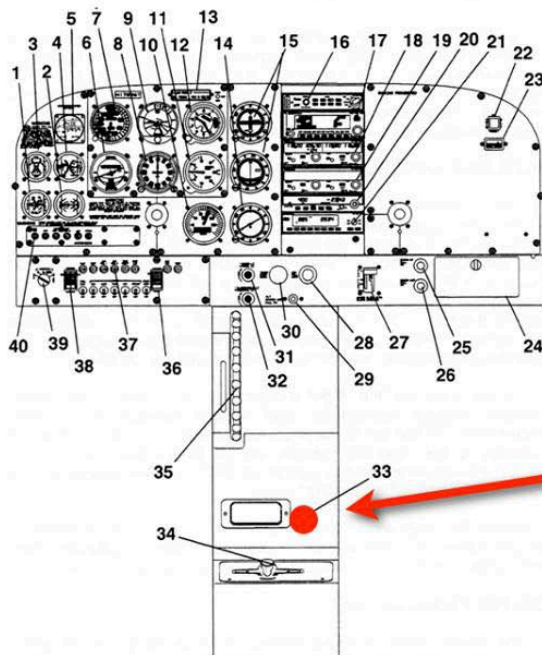
- Check Low Fuel indicators are extinguished on Annunciator Panel
- Listen for Avionics Cooling Fan operation
- Static Pressure Alternate Source valve check off

- ▼ Annunciator Panel, place and hold in TST position, all annunciators should illuminate
 - After releasing, check that appropriate indicators remain on
 - When master switch is turned on, some annunciators will flash for approx 10 seconds before illuminating steadily. When TST is toggled up and held, all remaining lights will flash until switch is released

- Fuel shutoff valve ON

Fuel shutoff valve should remain ON at all times except per emergency checklist.

Emergency Procedures



Fuel Shutoff Valve



Electrical Emergencies

- With Alternator side of Master Switch OFF, compass deviations of up to 25° may occur
- Alternator control unit contains an overvoltage sensor that shuts down the alternator if charge reaches 31.5 volts. If sensor malfunctions and excessive charge is noted on the ammeter, alternator should be turned off, shed load, and terminate flight as soon as practical
- Review "Insufficient Rate of Charge" procedure in amplified emergency procedures

V-Speeds

<u>V-Speed</u>	<u>KIAS</u>	<u>Description</u>	<u>Airspeed Indicator Marking</u>
V _{so}	40	Stall speed in landing configuration	<i>White Arc</i>
V _{s1}	48	Stall speed in specified configuration	Green Arc
V _r	55	Rotation Speed	
LD _{max}	59 68	1900 lbs. Gross Weight 2550 lbs. Gross Weight	
V _x	62	Best angle of climb	
V _y	74	Best rate of climb	
V _a	90 98 105	Maneuvering speed @ 1900 lbs. Gross Weight Maneuvering speed @ 2200 lbs. Gross Weight Maneuvering speed @ 2550 lbs. Gross Weight	
V _{fe}	85 110	Maximum flap extension speed 20-30° 10° of flaps may be used	<i>White Arc</i>
V _{no}	129	Maximum structural cruising speed	Green Arc
V _{ne}	163	Never exceed speed	Red Line

Limitations

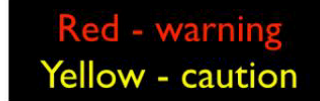
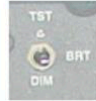
Fuel Limitations

- Takeoff and Landing with fuel selector in BOTH position
- Max Slip/Skid with one tank dry - 30 seconds
- Operation on L or R tank in Level Flight Only

Flaps

- Takeoff Range 0° - 10°
 - Landing Range 0° - 30°
- Airspeeds for flap operation
- 0° - 10° 110 kts, blue color code, detent at 10°
 - 10° - 30° 85 kts, white color code, detent at 20°

Annunciator Panel



VOLTS - Low voltage annunciator

Activates any time voltage drops below 24.5 volts -may occur during low RPM with high electrical load such as during taxi. Light will go out at higher RPM. No need to recycle master switch as over voltage has not occurred to deactivate alternator. Also may occur AFTER overvoltage sensor has shut down the alternator.

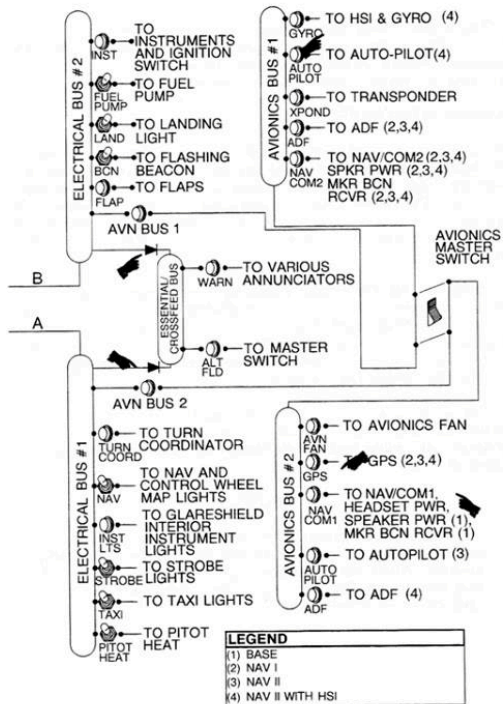
Review "Insufficient Rate of Charge" procedure in amplified emergency procedures

L VAC R - Low vacuum Left or Right (< 3 in Hg)

L LOW FUEL R - Low Fuel, Left and Right tanks (< 5 gallons for 60 seconds)

OIL PRESS - Low oil pressure (red)

Annunciator Panel DIM position turns on some internal radio lights



Electrical System

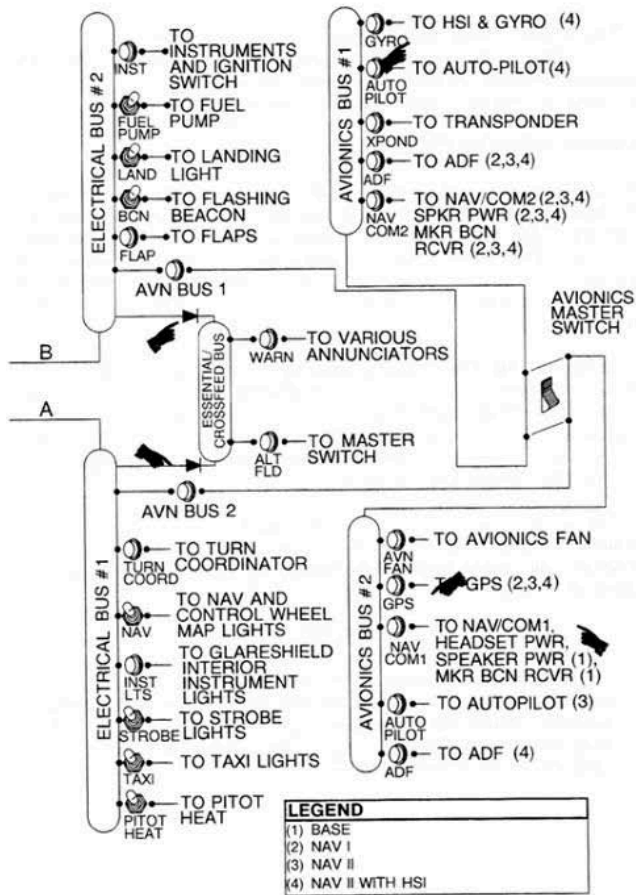
Power is supplied to most general electrical items through a split primary bus bar, with an essential bus wired between the two primaries to provide power for the master switch and annunciator circuits.

Each primary bus bar is also connected to an avionics bus bar via a single avionics power switch.

The avionics power switch should be turned off prior to starting the engine to prevent harmful transient voltages from damaging the avionics equipment.

The ammeter shows a discharge or a charge on the battery and should remain at or near the zero indication after a brief charging period.

Electrical System



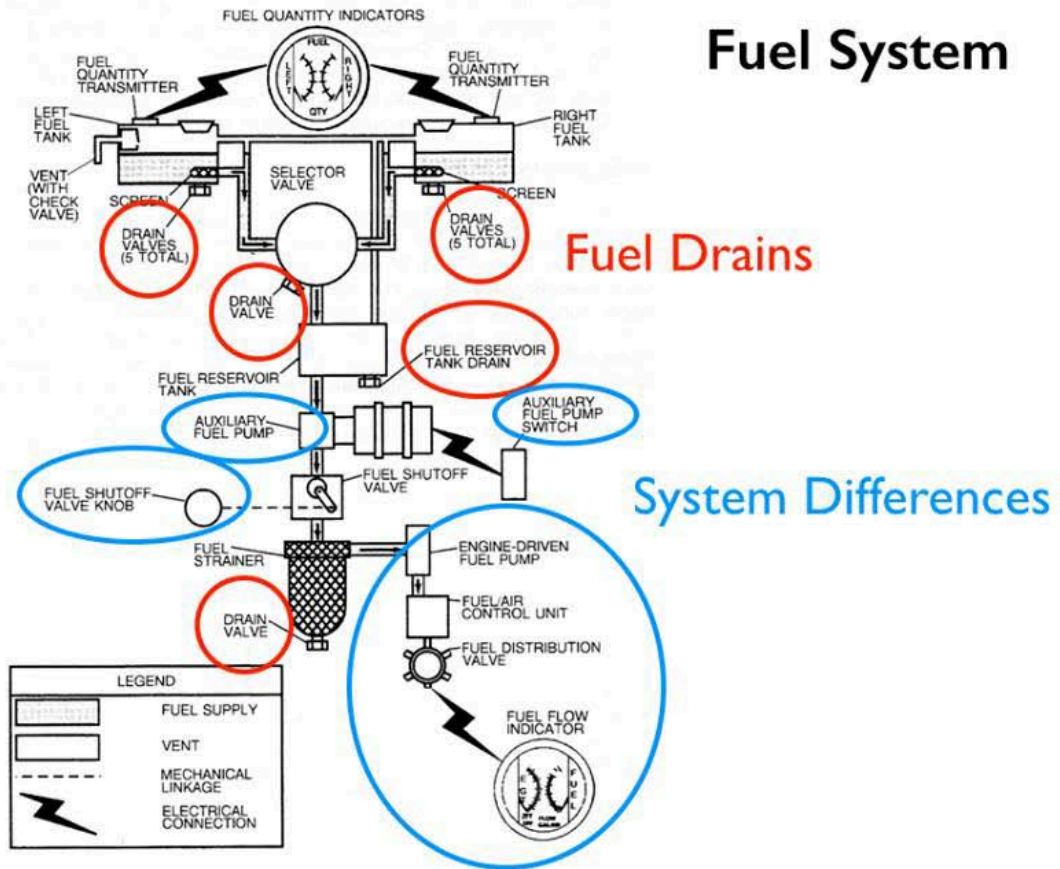
Split primary bus

Essential Bus wired between two primary powers Master Switch and Annunciators

Each primary bus connected to the Avionics bus through a single Avionics Master Switch

See schematics for bus assignments

Fuel System



0585C1013

Figure 7-6. Fuel System Schematic

Auxiliary Fuel Pump

- The auxiliary fuel pump is used for starting only, both on the ground and in flight for restart (per the emergency checklist).



The Little Red Knob...

- There is a **red** fuel shut off valve located on the center pedestal above the fuel selector valve. Push-in to turn fuel ON, and Pull-out to shut fuel OFF.



Please ensure that this knob has been pushed-in BEFORE engine start.

Fuel System



▼ Fuel System

- Low Fuel Warning: Anytime fuel in tank drops below 5 gallons and remains there for >60 seconds, amber LOW FUEL annunciator will flash for 10 seconds and then remain illuminated.
- If fuel transmitter fails, fuel gage goes to OFF position (below the zero (0) indication) and 60 seconds later the appropriate LOW Fuel annunciator illuminates
- Both fuel caps are vented
- Reduced fuel load - fueling to bottom edge of fuel filler tab gives 17.5 gal useable in each tank.
- Operation on LEFT or RIGHT tank is for straight & level cruise flight ONLY
- When operating on L or R selector, uncoordinated flight > 30 seconds may uncover the fuel tank outlet

Fuel Capacities

Capacity 56 gal (2 tanks @ 28 gal ea.)

Useable 53 gal

Unusable - 3 gal (1.5 gal ea. tank)

Fuel burn - approx 12 gph

13 Fuel Drains

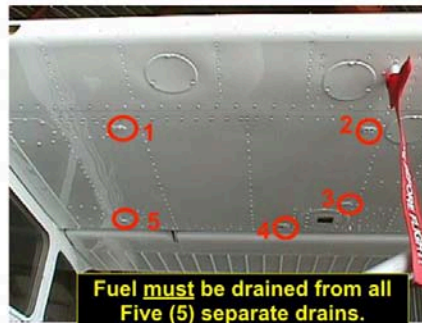
- 5 on each wing
- 3 belly drains

There is no longer a fuel strainer drain under the cowling access door.

Belly Fuel Drains...



Under Wing Fuel Drains...



Engine

- Lycoming IO-360 L2A

- Max RPM 2700

- 180 hp



Engine

- Two (2) engine-driven vacuum pumps
- Two (2) engine-driven magnetos
- **Spring loaded alternate air door** should induction system become blocked
 - 10% power loss at full throttle with alternate air door open
 - No pilot control

ENGINE START

1. Throttle -- OPEN 1/4 INCH
2. Mixture -- IDLE CUT OFF
3. Propeller area -- CLEAR
4. Master Switch -- ON
5. Auxiliary Fuel Pump Switch -- ON
6. Mixture -- ADVANCE to obtain 3 to 5 gph fuel flow, then return to IDLE CUT OFF position
7. Auxiliary Fuel Pump Switch -- OFF
8. Ignition Switch -- START (release on engine start)
9. Mixture -- ADVANCE smoothly to RICH when engine fires



Fuel Injection

- No Carburetor - No Carb heat!

S vs SP -Type Designation

- Cessna 172S - Type Certificate
- Cessna 172SP - Marketing Designation

Max Weights

Normal	Utility
Ramp - 2558	Ramp - 2208
Takeoff - 2550	Takeoff - 2200
Landing - 2550	Landing - 2200

Filing a flight plan

- ICAO Type Designator - C172
- Equipment Code - GPS/Mode C - /G

C172/G

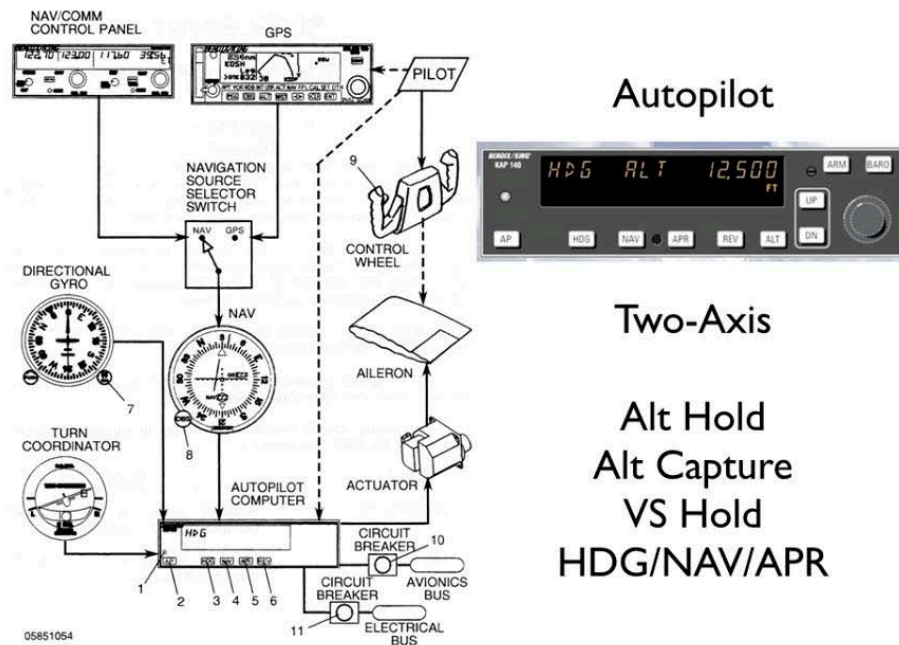


Figure 1. Bendix/King KAP 140 Autopilot, Operating Controls and Indicators (Sheet 1 of 2)

