CHAPTER 32
REVISION LIST
(Pressurized Version)

The following list of revisions will allow you to update the Lancair IV construction manual chapter listed above.

Under the "Action" column, "R&R" directs you to remove and replace the pages affected by the revision. "Add" directs you to insert the pages shown and "R" to remove the pages.

Page(s) affected	Current Rev.#	Action	Description
32-1 thru 32-7	0	None	
32-8	PC15	R&R	Edited schematic.
32-9	PC10	R&R	Edited 32:C:1.
32-10	0	None	
32-11	PC17	R&R	Removed Fig. 32:C:3. (ref. Fig. 32:H:7)
32-12 thru 32-21	0	None	
32-22	PC10	R&R	Edited 32:G:4.
32-23 & 32-24	0	None	
32-25	PC13	R&R	Revised pressurization system.
32-26	PC17	R&R	Removed Fig. 32:H:1. (ref. Fig. 32:H:7)
32-27	PC17	R&R	Removed Fig. 32:H:2. (ref. Fig. 32:H:7)
32-28	PC16	R&R	Changed Blue wire destination in figure.
32-29 thru 32-31	PC13	R&R	Revised pressurization system.
32-32	PC14	R&R	Re-printed complete page.
32-34	PC15	Add	New page
32-35	PC17	Add	New page (Fig. 32:H:7)

CHAPTER 32
GENERAL WIRING

REVISIONS

From time to time, revisions to this assembly manual may be deemed necessary. When such revisions are made, you should immediately replace all outdated pages with the revised pages. Discard the out dated pages. Note that on the lower right corner of each page is a "revision date". Initial printings will have the number "0" printed and the printing date. All subsequent revisions will have the revision number followed by the date of that revision. When such revisions are made, a "table of revisions" page will also be issued. This page (or pages) should be inserted in front of the opening page (this page) of each affected chapter. A new "table of revisions" page will accompany any revision made to a chapter.

ARROWS

Most drawings will have arrows to show which direction the parts are facing, unless the drawing itself makes that very obvious. **"A/C UP"** refers to the direction that would be up if the part were installed in a plane sitting in the upright position. In most cases the part shown will be oriented in the same position as the part itself will be placed during that assembly step. However, time goes on and changes are made, so careful attention should be paid to the orientation arrows.

CONTENTS

1. INTRODUCTION

This chapter will deal with the wiring necessary to get your Lancair IV functional. We will show you how to get power to the engine starter, then after the engine is fired up, how to get the power from the alternator into the cockpit. From this point various systems, such as lights, trim systems, hydraulic system, fuel pump, etc., will be shown in wiring diagrams from the cockpit.

Don't think that we can show how to wire all the different types of radios, GPS's, VOR's, HSI's, NDB's, and all those other various systems that can fill up a panel so expensively. These items must be wired by the builder or a local radio shop using their own expertise. The basic goal of this chapter is to aquaint you with important parts of the electrical system, such as the alternator, starter and master solenoid, mag switch, and the primary and avionics power sources (buses).

Wiring can be one of the most intimidating of all the different skills you learn when constructing a homebuilt aircraft. What makes matters even worse is that when you ask three different wiring "experts" about the best way to wire an alternator system, you will most likely receive three different answers. If you plan on wiring your own Lancair IV, start reading! Tony Bingelis is the guru of homebuilding "how to". His Sportplane Builder column in *Sport Aviation magazine*, and his books are a wealth of information on all aspect of homebuilding, including wiring. If you have kept your back issues of *Sport Aviation*, Mr. Bingelis' column in the April, May, and June 1990 issues are excellent for gaining a good understanding of electrical systems.

Robert Nuckolls is also an excellent reference for wiring. He publishes a newsletter, The AeroElectric Connection, and also contracts his services to individual builders to design custom electrical schematics. He can be reached at:

Medicine River Press
6936 Bainbridge Road
Wichita, Kansas 67226-1008
(316) 685-8617

Another popular option is to have a local electrical pro do your electric system for you. This is generally a good idea at least for the radio stack wiring, but for the basic electrical system in your Lancair IV, you might be surprised how simple it is to wire.

Wire sizes are not given on any of the wiring diagrams in this chapter. There can be different sizes used in either 12 or 24 volt systems. As a general guide we have reprinted the official FAA wire sizing chart for continuos circuit voltage. To find the proper wire size, first you should know the amperes required for that circuit. The circuit breaker size shown in this chapter's schematics can be used for this figure. Second, you'll need to figure out a rough estimate of the wire length from the master bus to the device being powered (landing light, boost pump, etc.). With these two numbers, you can find the minimum wire size required by looking at the chart. Here's an example: If you mount the landing light (10 amp breaker) in the cowling (about 10' wire length), the chart will tell you to use 16 gauge wire (rounding to the larger size) for a 12/14 volt system.

Wire sizing chart

Figure 32:i:1

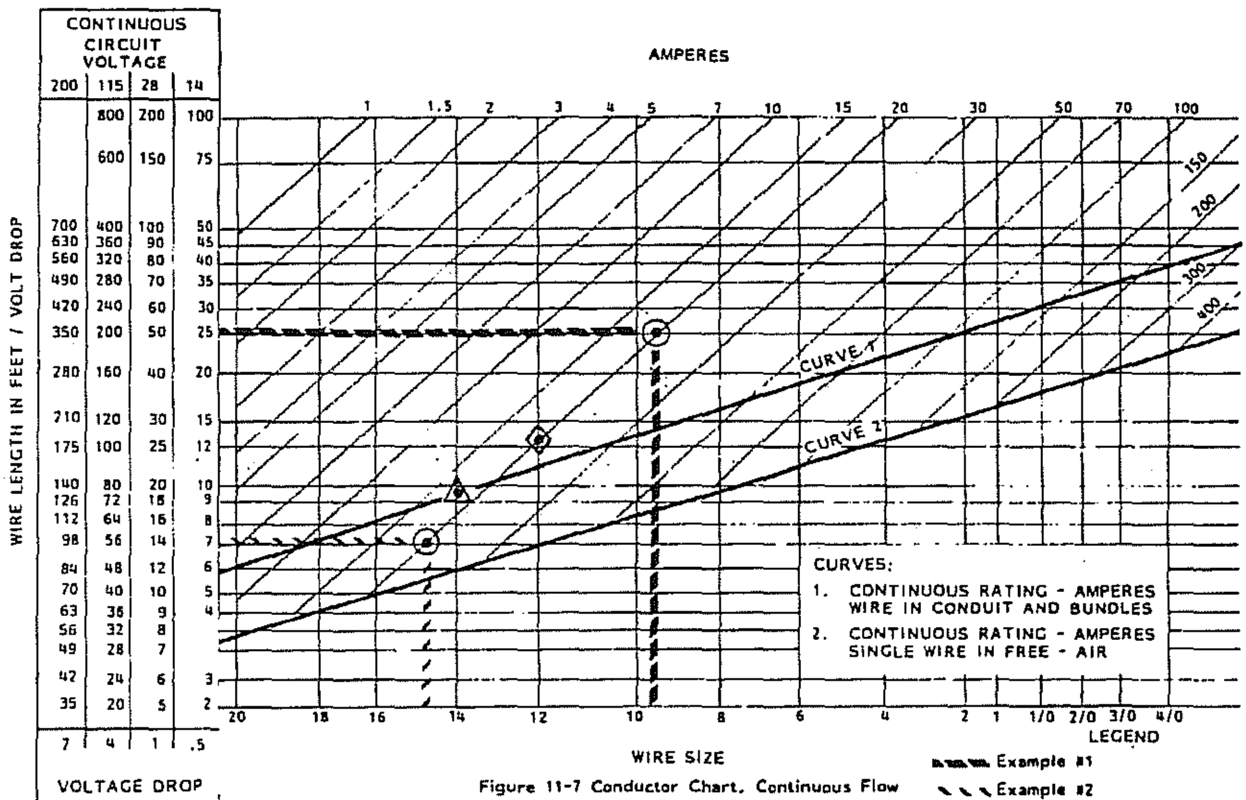


Figure 11-7 Conductor Chart, Continuous Flow

Reprinted from AC 43.13-1A/2A ACCEPTABLE METHODS, TECHNIQUES, AND PRACTICES - AIRCRAFT INSPECTION REPAIR AND ALTERATIONS.

2. CONSTRUCTION PROCEDURE

A. BATTERY BOX LOCATIONS

The battery location for a pressurized Lancair IV is on the firewall. The location for the non-pressurized (prototype) IV was established to be behind the FS 171 bulkhead. However, since building techniques and equipment lists can vary greatly from one plane to another, subsequent weight distributions will also vary.

It is therefore recommended that for a non-pressurized IV, you first make a "trial" weight and balance prior to fixing the battery location in your aircraft. With this trail weigh-in performed, you can then more accurately assess the best location for the 26 lb. battery installation. As an example, several customer completed non-pressurized IV's have seen a prefered battery location being on the firewall which has some obvious advantages.

The goal is to locate the empty CG of the aircraft at a fwd position such that the fwd flight ranges of the CG can be utilized. (Virtually all usefull load added to the plane will move the CG aft so you do want to start at the very front of the allowable range.)

As a last resort, one can add lead to balance the overall aircraft but that is obviously not a desirable method.

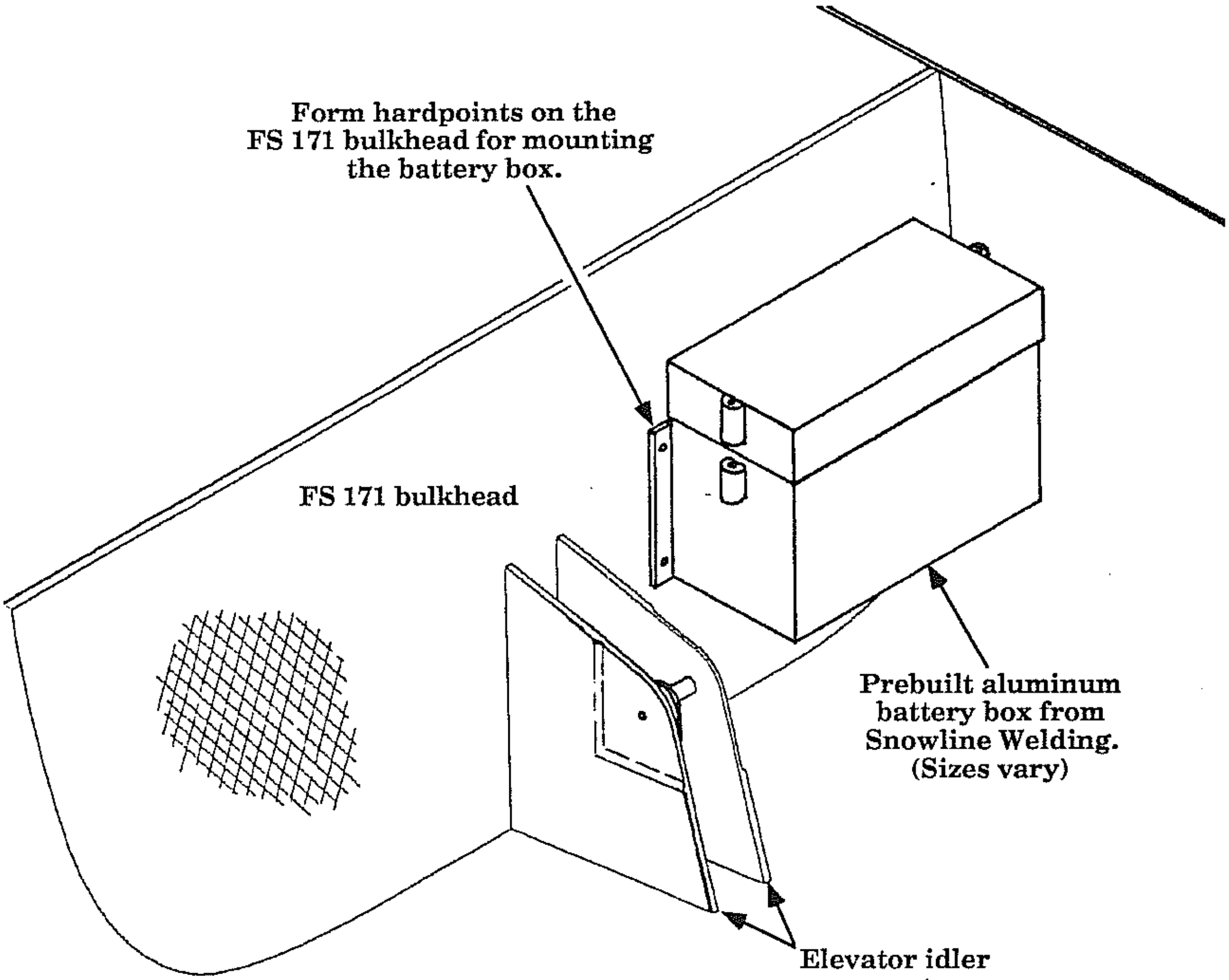
The right side of the baggage bulkhead (FS171) should be free of obstructions and is a suitable location for the battery, but if you have already mounted something in this area, you can mount the battery to the right side of the fuselage.

Whatever method you decide to use, be sure you build a sturdy box with a strong battery retainer. Remember, that 25 lb. battery must be held in place and capable of withstanding G loads during flight.

The following drawings show only two possible battery mounting methods. Snowline Welding produces a nice battery box that will mount quickly to the bulkhead or firewall. You can also easily build up a battery box for bulkhead mounting using the prepreg method.

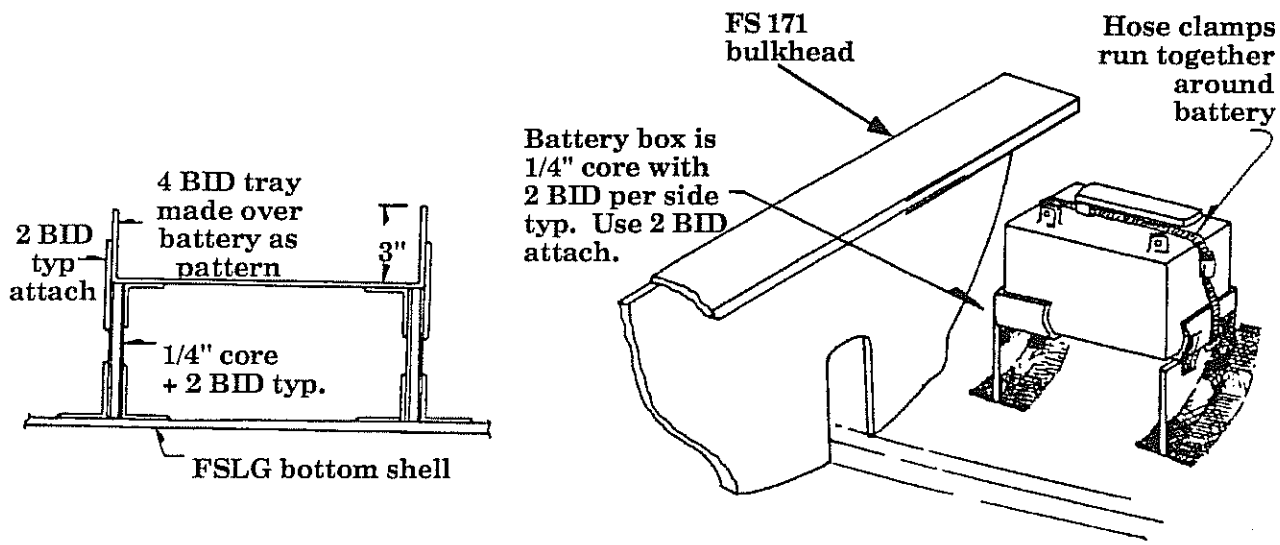
Prefab aluminum battery box on FS171 bulkhead

Figure 32:A:1



Custom built prepreg battery box

Figure 32:A:2



B. BASIC WIRING

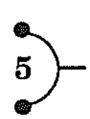
This section will concentrate on the wiring necessary for starting the engine and getting power into the cockpit. Battery power must be channeled directly into the engine starter while the magnetos are "hot". After the engine has started, the alternator can both recharge the battery and provide a constant source of power to the cockpit mounted "Buses", which are nothing more than strips of copper providing a positive (+) connection to a row of circuit breakers. You will usually have a bus for a row of avionics circuit breakers, and a separate bus (or buses) for the rest of the circuit breakers. In the rest of the sections in this chapter, we will show wiring of different systems from the bus (+) to the ground (-), thus completing each circuit.

Since this is a composite airframe, you don't have the luxury of grounding to a convenient aluminum surface. You must bring a few ground posts into the cockpit, then terminate all your circuits to one of these posts. Although only one cockpit ground post is shown in the following schematic, it is a good idea to have several, even a couple in the gear box area for the systems behind the wings. Ahead of the firewall, circuits are usually grounded to one of the engine bolts, which is in turn grounded to the battery.

Note that in the basic wiring schematic, the battery is shown ahead of the firewall, which is correct for the pressurized version. For non-pressurized Lancair IV's, the battery should be mounted behind the FS 171 bulkhead, as shown in Section A. This location requires that large cable (2 gauge) be routed all the way to the engine, which is heavy but unfortunately necessary.

It seems that more and more breakers are being incorporated into the modern electrical system. You'll notice in most of the wiring diagrams, a breaker symbol is shown adjacent to the master bus bar. The number in the symbol is the breaker size. Here is a complete list of breaker sizes that we have used in our well equipted Lancair IV-P.

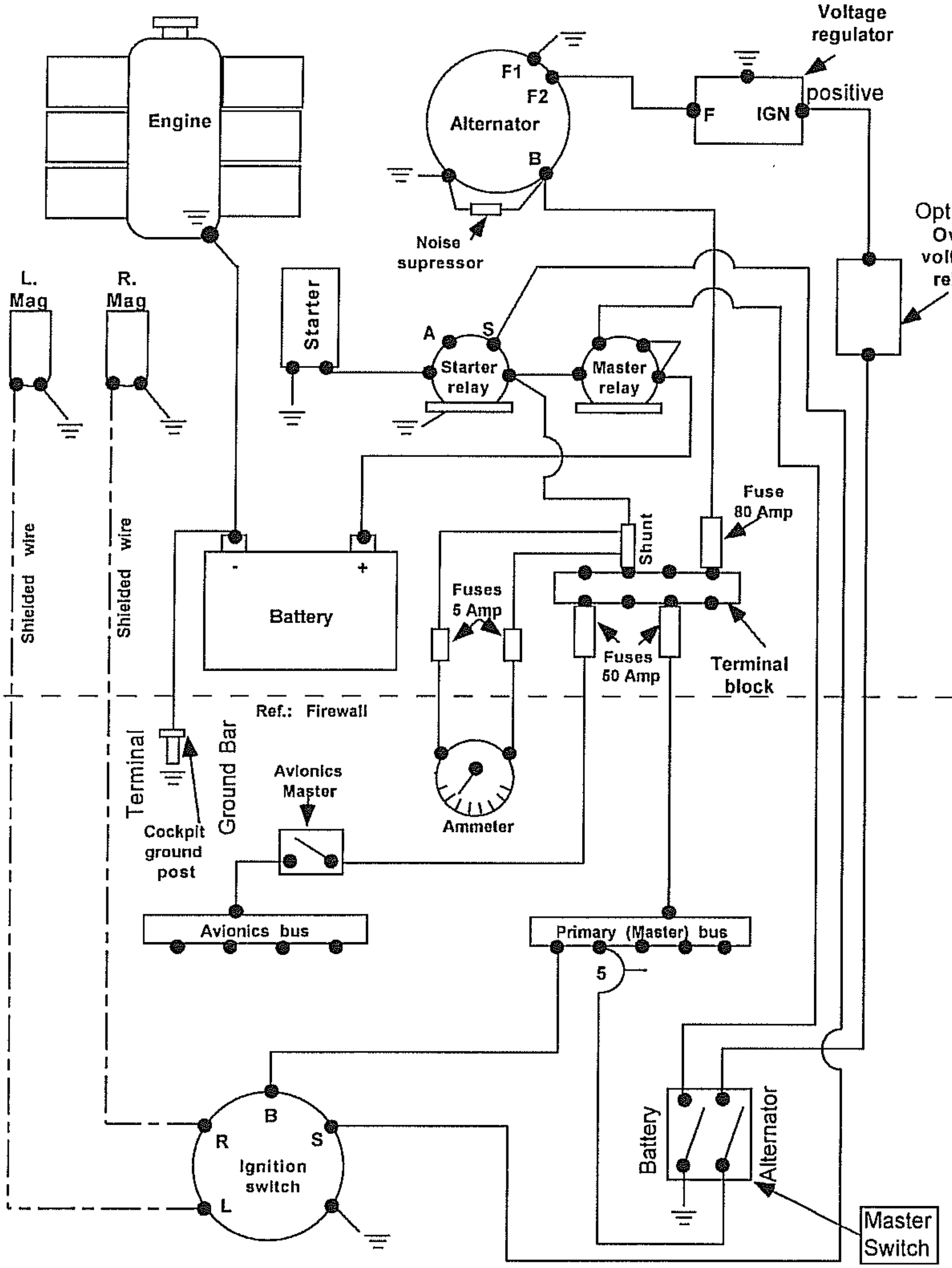
Cabin lights - 5 amp	Instr. lights - 5	Landing light - 10
Nav lights - 10	Strobe lights - 10	Pitot heat - 10
Intercom - 1	Headphones - 1	Speaker - 3
Com 1 - 10	Com 2 - 10	GPS - 3
DME - 3	Transponder/Enc. - 5	Stormscope - 5
Autopilot - 5	HSI - 5	T&B - 1
Cabin fan - 2	Gear motor - 50	Gear relay - 5
Fuel pump - 7.5	Press. control - 5	Fuel Qty. - 3
EGT/CHT/Fuel flow - 2	Starter - 5	Alt. field - 5
Trim systems - 5	Tach - 5	Oil temp/press - 5
		Door seal pump - 5



= 5 amp circuit breaker symbol

Basic wiring schematic

Figure 32:B:1



C. LANDING GEAR WIRING

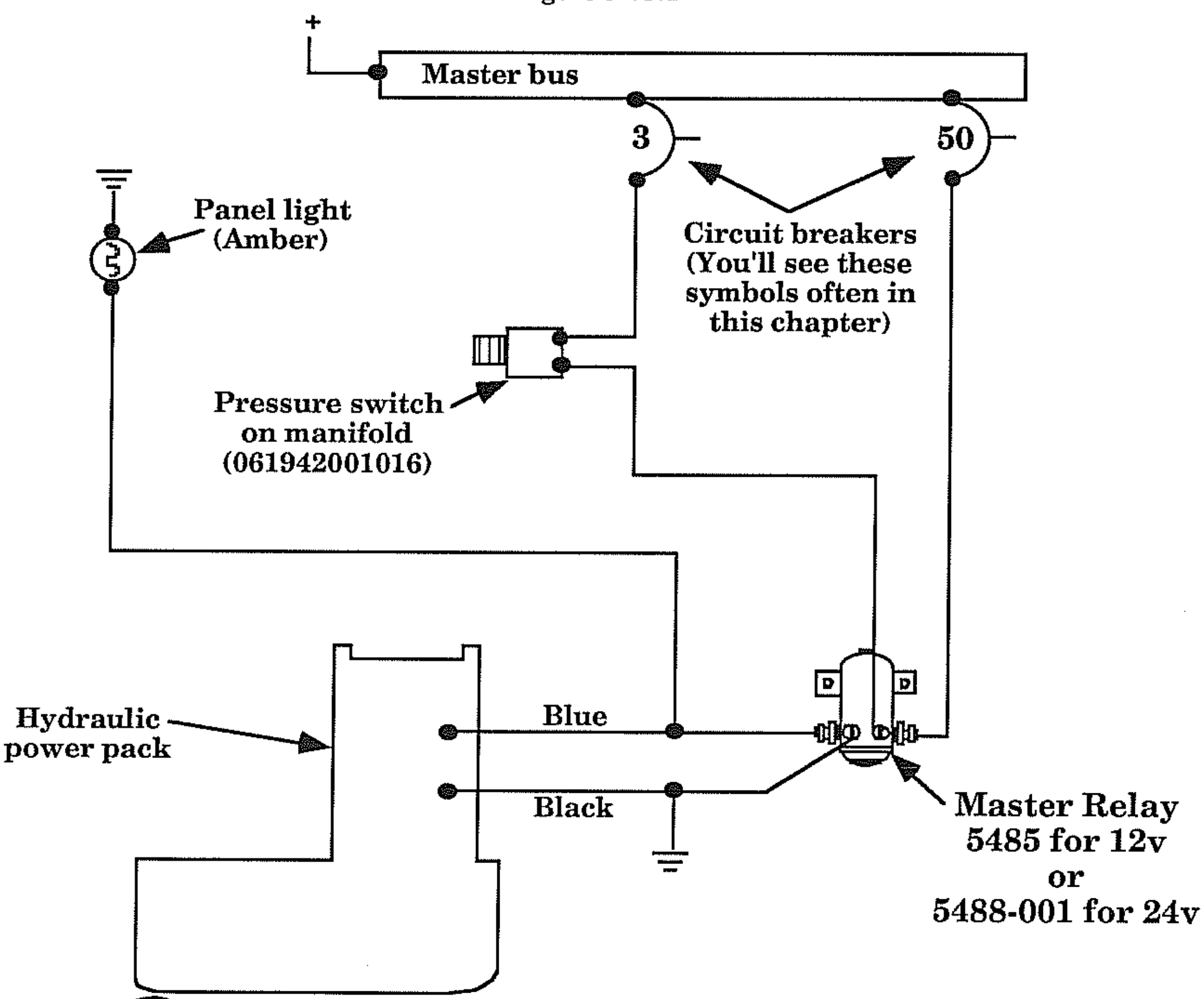
The landing gear wiring consists of three main systems, hydraulic pump, gear indicator lights, and the safety lock on the control quadrant.

The hydraulic pump (or power pack) keeps the hydraulic system pressurized between 1100 and 900 lbs. When the pressure in the system falls below 900 lbs., a pressure switch on the manifold activates the pump, then shuts it off again at 1100 lbs. The system can lose pressure by running the gear up and down, or extending the flaps. Both gear and flap systems are routed through the manifold so the switch can sense their pressure.

Because the hydraulic pump draws a lot of current when running, it is activated by a relay. You wouldn't want to run too much current through the pressure switch, so the pressure switch's only task is to activate the relay. The high current then passes through the relay, not the pressure switch.

Hydraulic Pump Wiring

Figure 32:C:1



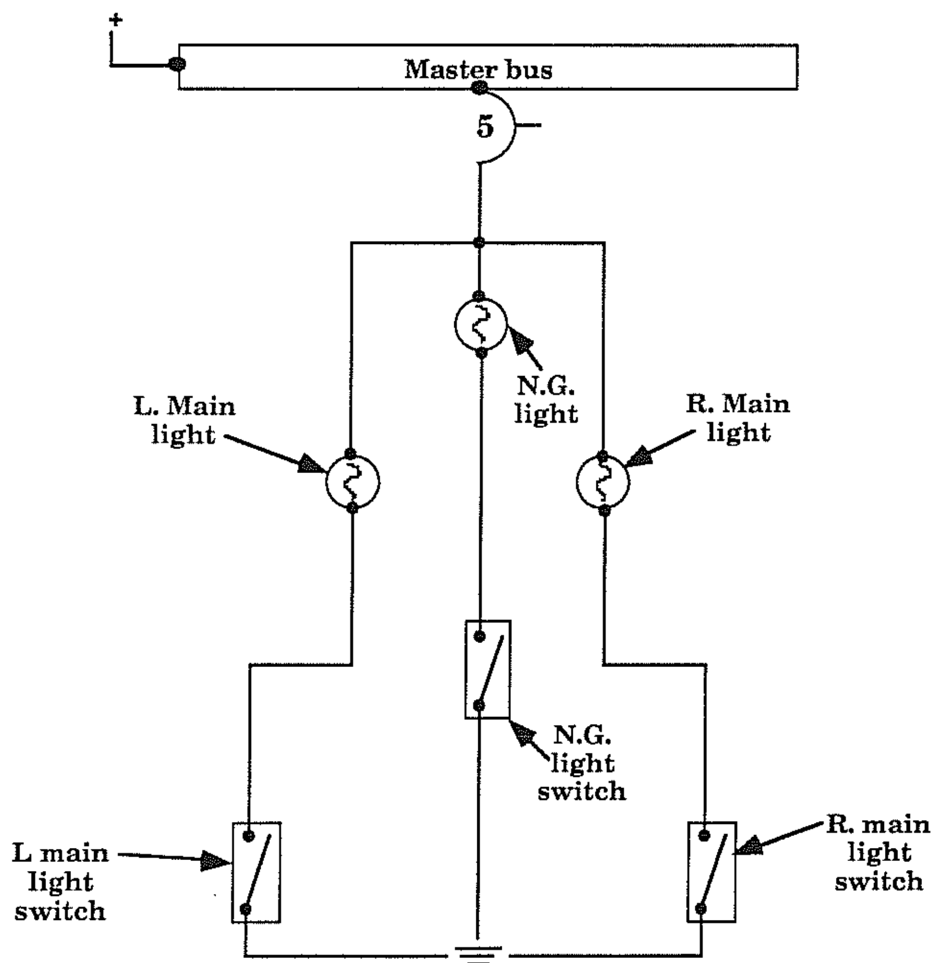
The landing gear indicator lights work through the micro switches you have already installed on the main gear and nose gear. This circuit is as simple as it gets. When the micro switch at each gear location is grounded out, the indicator light on the instrument panel illuminates.

Mount the indicator lights on the top of the instrument panel to take advantage of the shade provided by the glare shield. As with any light, it is hard to see if it is lit or not if the sun is shining on it. The indicator lights are usually mounted in a triangular pattern, with the nose gear indicator above the two mains.

Next to the gear position indicators, mount the hydraulic pump indicator, which is amber in color. This light will show illuminate when the hydraulic pump is running, like when the gear is cycling, or when hydraulic system pressure falls off.

Landing gear indicator lights

Figure 32:C:2



To avoid accidental retraction of the landing gear on the ground, a solenoid on the control quadrant locks the gear lever in the "down" position. An air pressure switch is mounted in the pitot line, and when the airspeed is gauged to be over 65 knots, the pressure switch disengages the gear safety, allowing the gear handle to be moved into the "up" positon. This three wire "squat" switch is also used to activate the cabin control valve. See Figure 32:H:7 at the end of the chapter.

D. LIGHTS

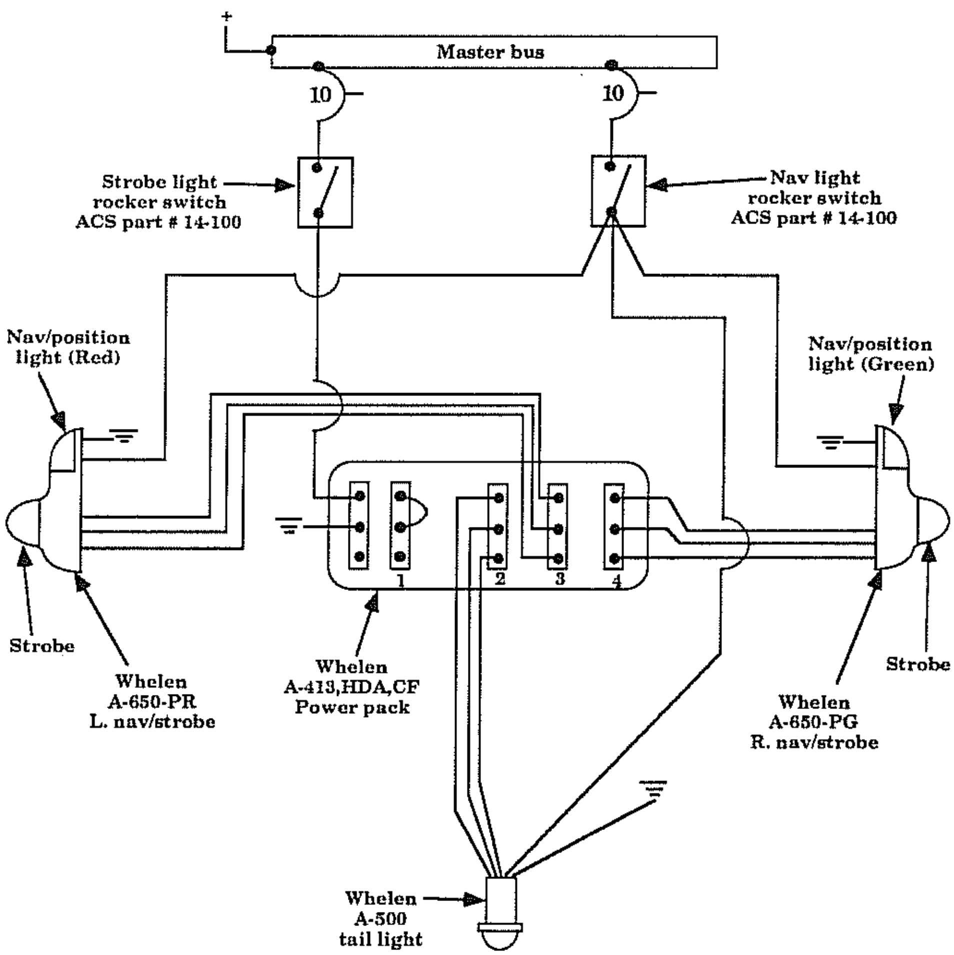
Exterior lighting on the Lancair IV consists of wingtip position/strobe light, a tail position/strobe light, and a landing light. There are variations, of course, but this section will stick to the basics.

Inside the cockpit, instrument lights, or post lights, illuminate the panel for night flying. A cabin light is also sometimes installed. A schematic is given for the simple instrument wiring, but not for the cabin light.

The following schematic shows the wiring of the position/stobe lights. A more complete explanation of this system is provided in the HD-60 installation kit commonly purchased along with the lights and power pack. Basically the are two wires coming out of each light unit for the red/green/white position lights. The other three wires out of each unit are used for the strobes.

Position/strobe light schematic

Figure 32:D:1

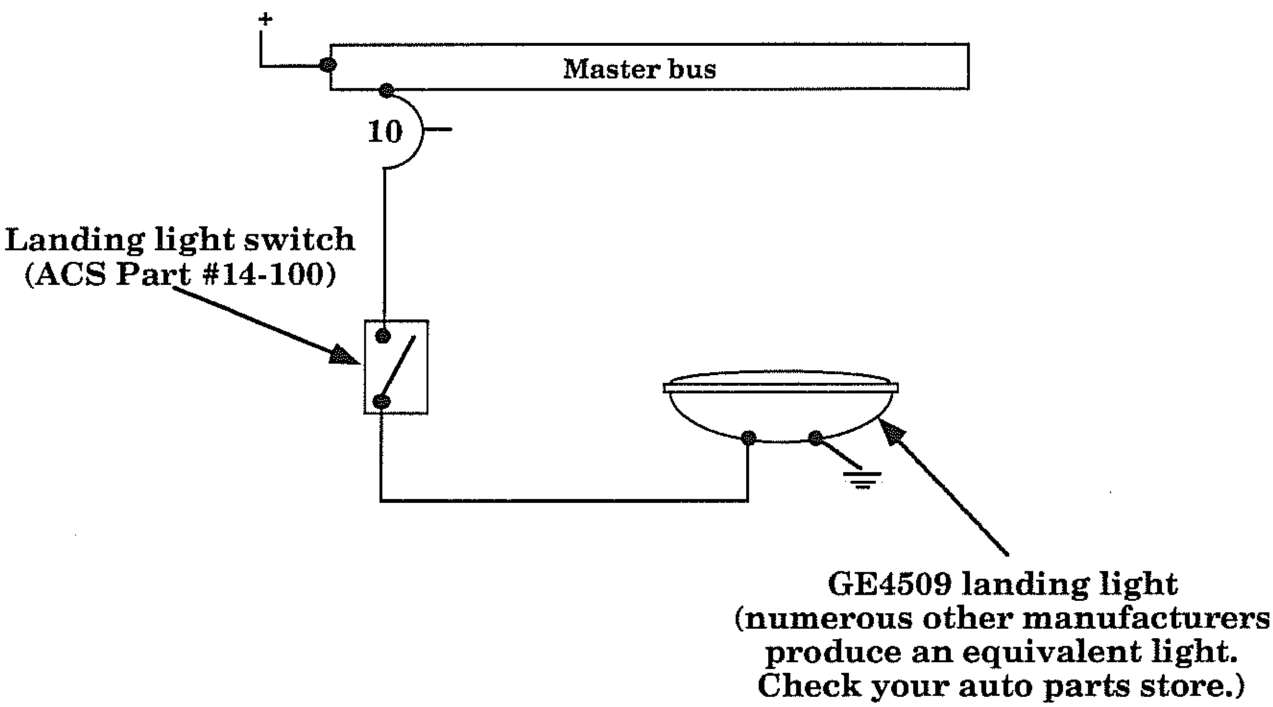


The typical landing light installation on the Lancair IV uses a G.E. 4509 bulb. This is an excellent light and is produced by a number of manufacturers. They can even be found in many auto parts stores.

The cowling is an excellent location for the landing light, although this is likely to be argued mong builders who want the light in their wings. We're not saying the wing location is not good, but you can avoid cutting into the wing structure, simplify the plastic lens, and shorten the wire length by mounting it in the cowling.

Landing light wiring

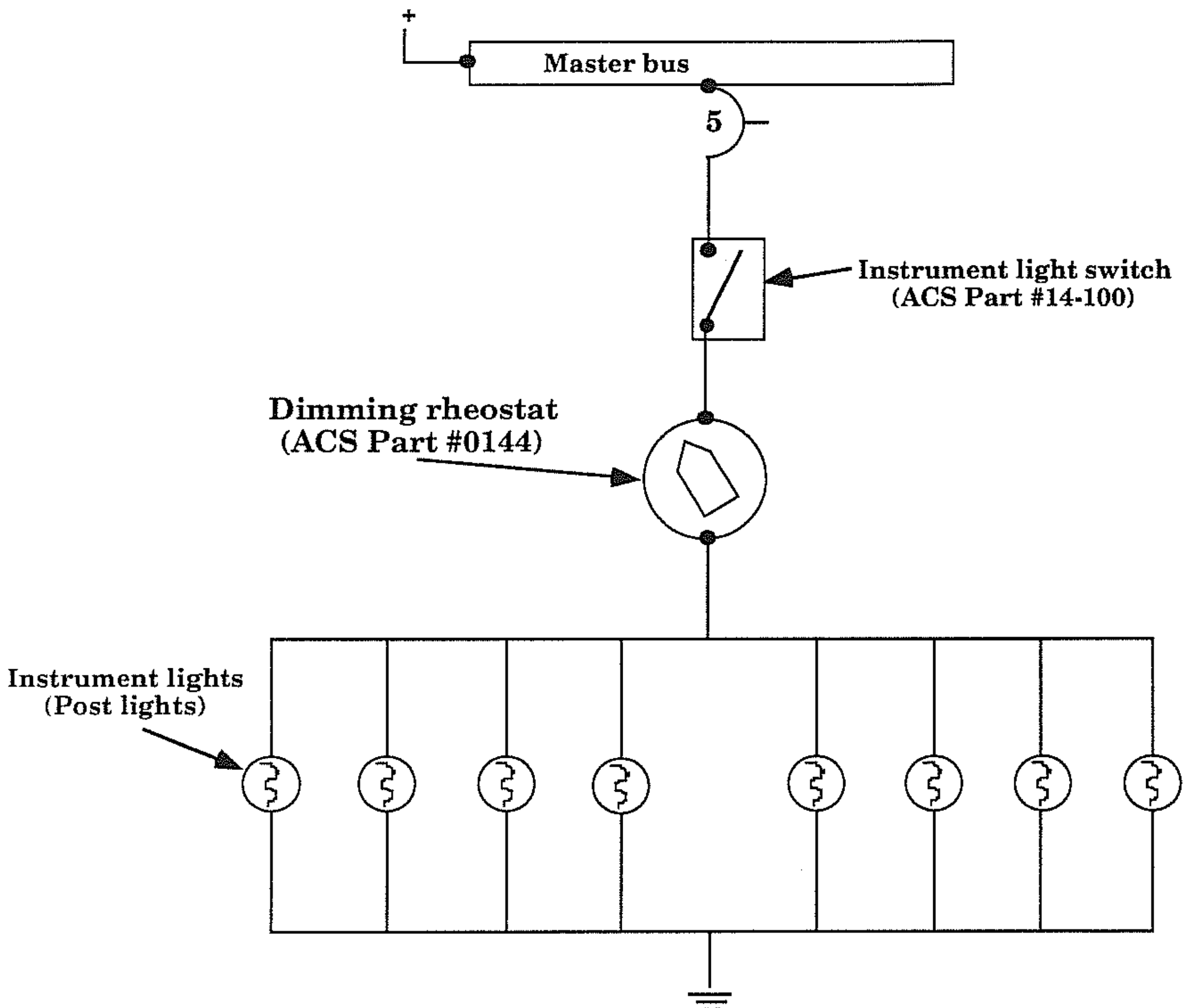
Figure 32:D:2



There are an increasing number of instrument lighting methods. The old standby, postlights mounted adjacent to every instrument are giving way to internally lit instruments and lighted instrument covers. Whichever method you choose, most likely they will be wired similarly to the schematic below.

Instrument light schematic

Figure 32:D:3



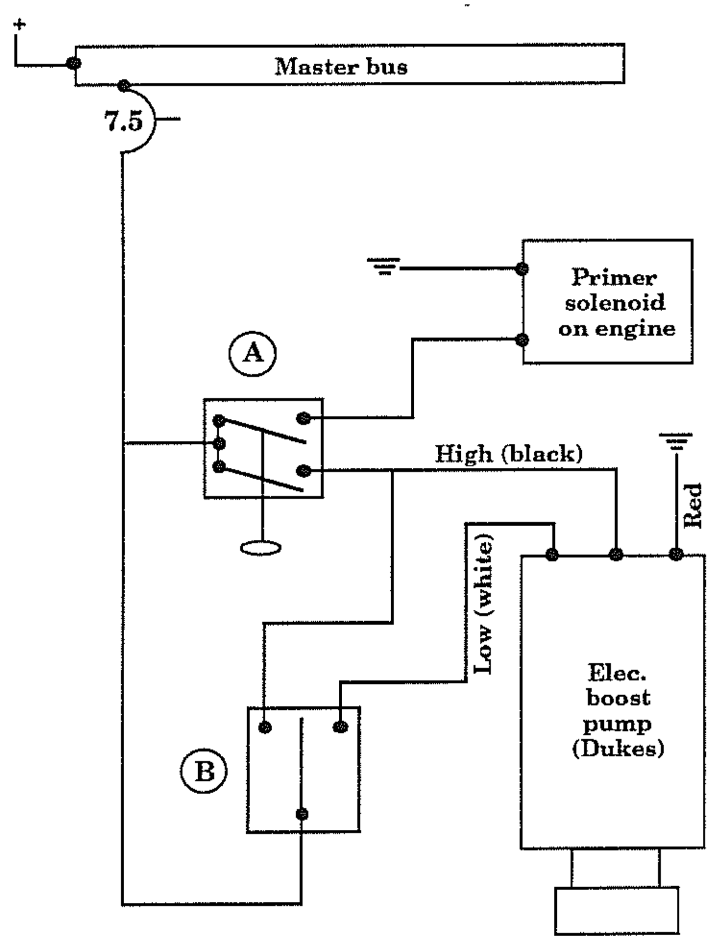
E. FUEL PUMP/PRIMER WIRING

The electric fuel pump mounted next to the copilot's leg does double duty as the engine primer. When the primmer button is pushed, it both activates the high pressure circuit of the electric fuel pump and opens a primer solenoid on the engine manifold. The primer solenoid allows the high pressure fuel to shoot into the manifold unobstructed.

The electric fuel pump can be run in the high or low position. Above 10-12,000 feet, the fuel pump should be left on in the low position to provide a constant fuel pressure to the engine. High pressure is only for starting or emergency use (such as a failed engine driven pump).

Fuel pump/primer schematic

Figure 32:E:1



(A) - Primer switch, SPDT, MOM On, Push button

(B) - Boost pump rocker switch, SPDT, Center Off, Hi/Off/Low

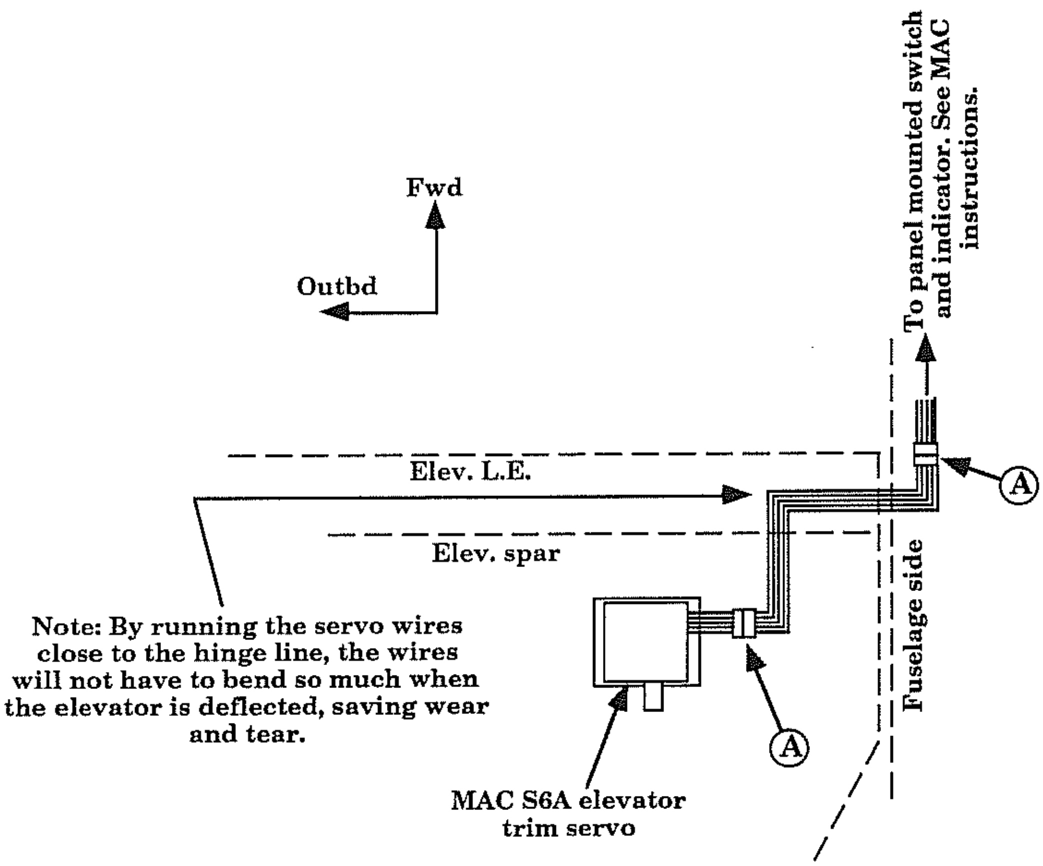
F. TRIM SYSTEM WIRING

Wiring instructions are included with your trim systems. The following diagrams suggest wire routing and plug locations so you can remove the servo alone by simply unplugging it, or you can remove the entire control surface by unplugging the servo outside the surface.

For wiring the five wire servos (4A or 6A), an excellent 5 pin connector plug is available from MAC Inc. (actually the plug has six pins, just don't use one). For wiring the S9 aileron servo (two wires), you can use an AMP connector, available at electronic supply stores or from us.

Elevator trim servo wire routing

Figure 32:F:1

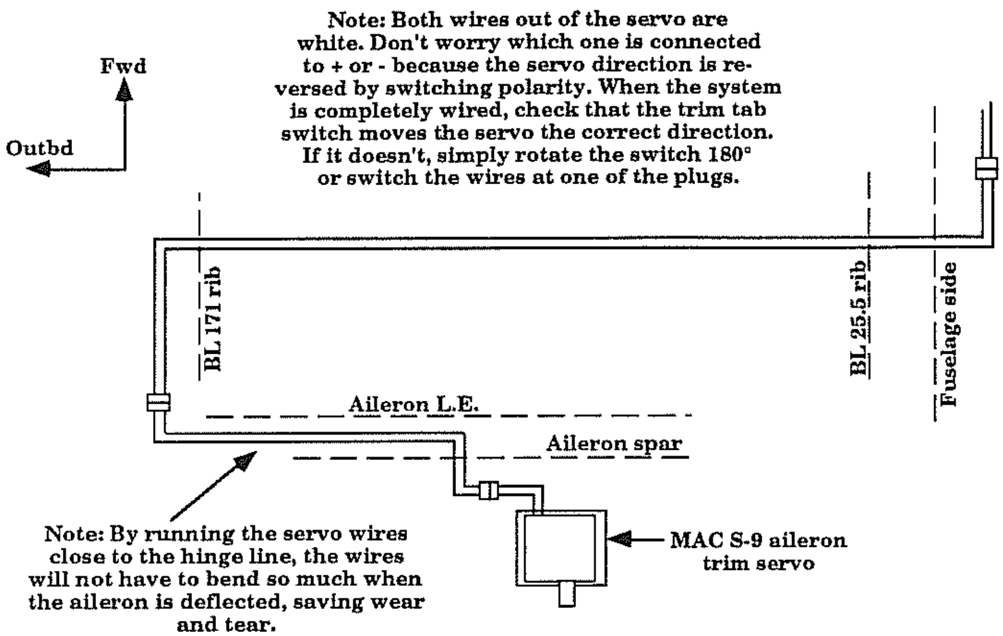


Ⓐ = 5 pin connector, available from MAC Inc.

Note: MAC Inc. also sells a color coordinated 5 wire harness, which is easier to install than stringing five individual wires.

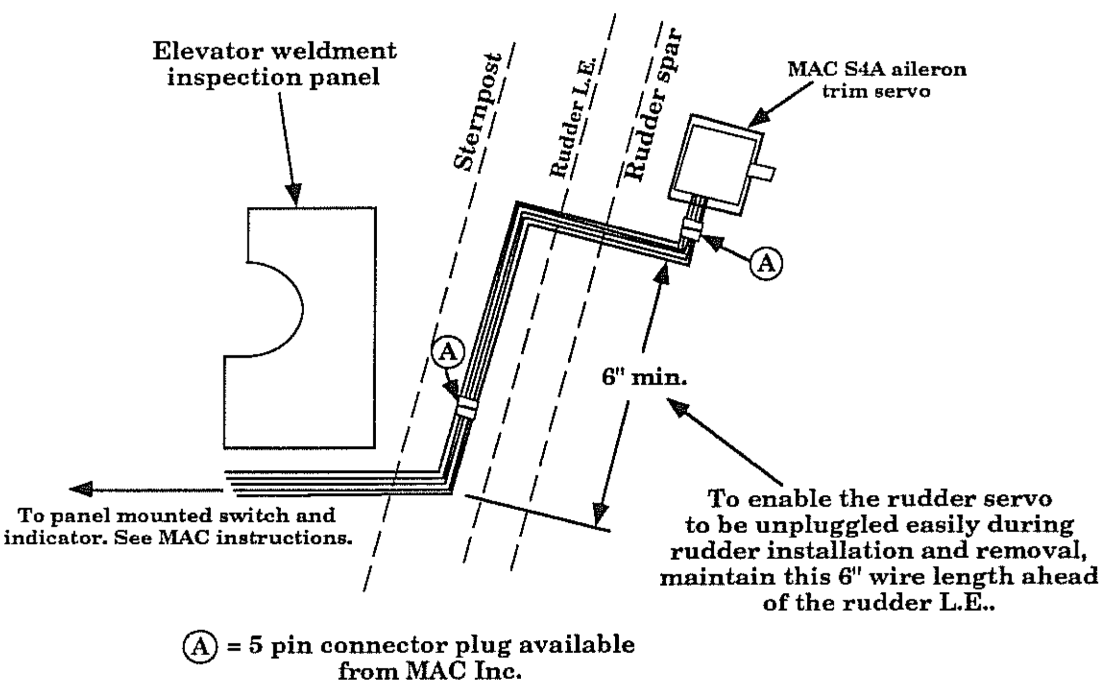
Aileron trim servo wire routing

Figure 32:F:2



Rudder trim servo wire routing

Figure 32:F:3



NOTE: MAC Inc. also sells a color coordinated five wire harness which is easier than stringing five individual wires.

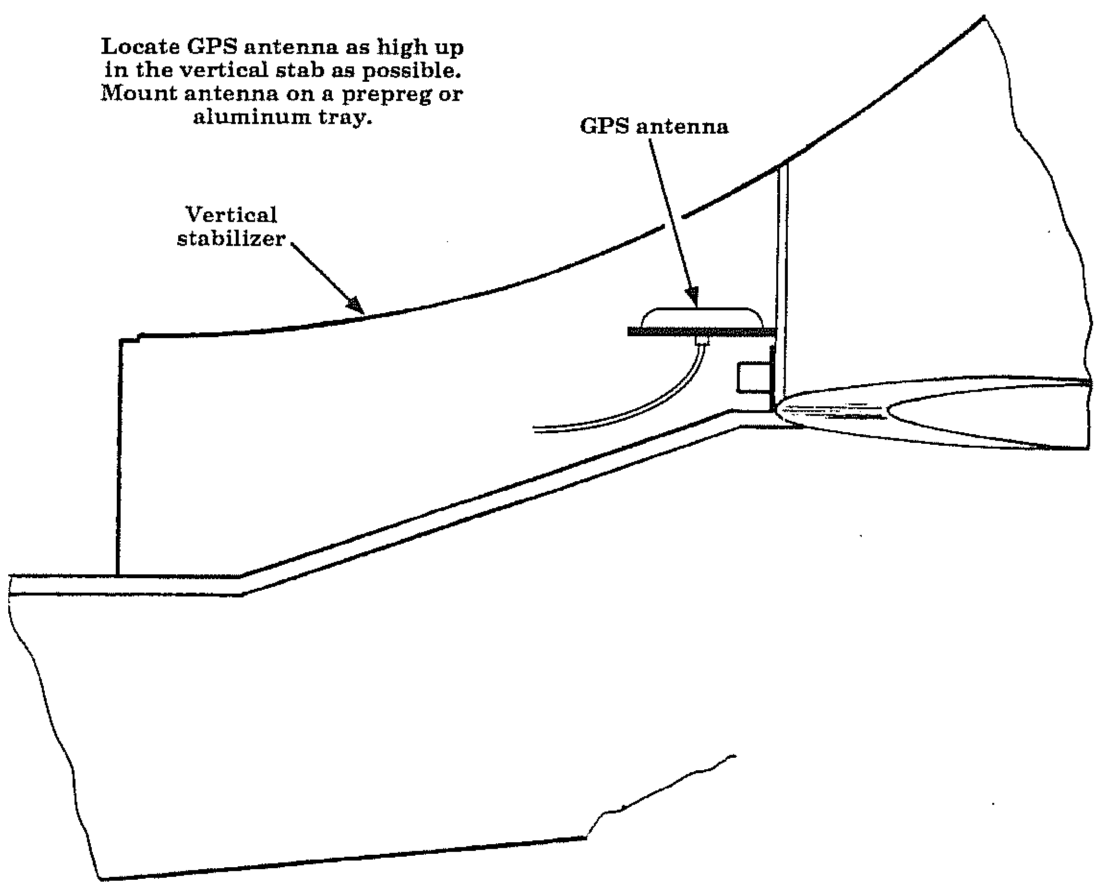
G. ANTENNA PLACEMENT

In the constantly changing world of avionics, what you read in this section may be outdated in a year. A perfect example is the Loran antenna installation described in the vertical stabilizer chapter. Loran was still the "IN" form of navigation at that time, but since then, GPS had arrived in a BIG way! Now a much better choice of antenna for installation in the base of the vertical stab is the GPS antenna.

The most common GPS antenna is shaped like a disc. Make a shelf inside the vertical stabilizer to position the GPS antenna as high as possible, usually just above the fresh air hose flange on the fwd stab bulkhead. Make the shelf from prepreg or aluminum and be sure you can access the antenna and cable from the aft fuselage access panel (no this isn't much fun, but some access is better than none).

GPS antenna installation

Figure 32:G:1



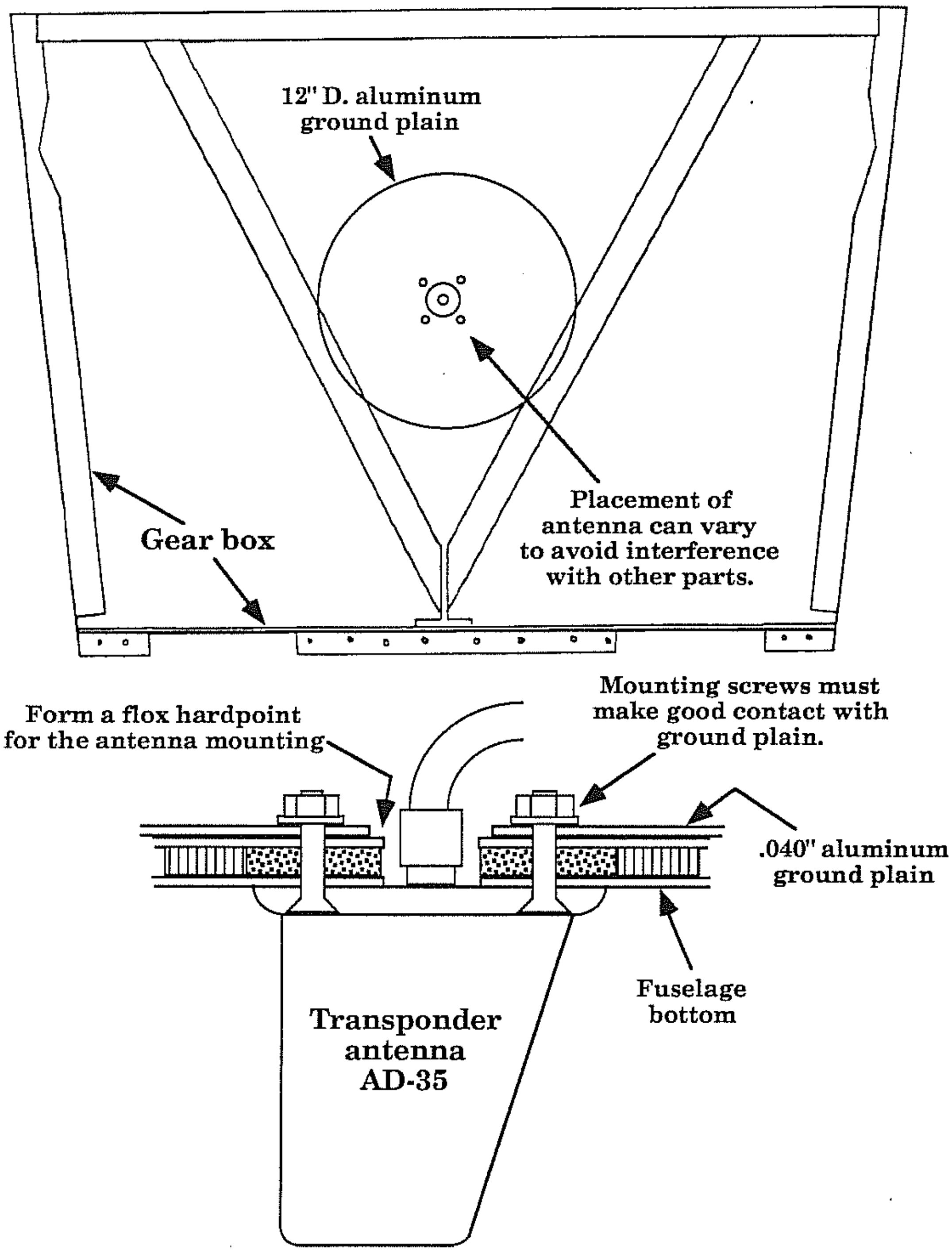
Although we hate putting external antennas onto our clean Lancairs, the transponder and DME antennas are best located on the bottom of the fuselage. Using the mini-blade antennas (AD-35), they really don't look that bad and certainly cause little or no speed loss.

The transponder blade antenna is located underneath the gear box as shown in Figure 32:G:2. This keeps it away from the passenger's feet and out of the pressurized cabin (on pressurized versions, of course). You can change the location of the antenna to avoid interference with other assemblies. Radio specialists all agree that a ground plain is required for both DME and transponder, but they also all disagree on the exact size and shape of the ground planes. From the information we have gathered, it seems that the bigger the ground plane, the better, and if you must have a squarish ground plane shape, it is best to at least round the corners. Ask you local expert about this subject (if you dare).

Where the DME and transponder antennas are mounted, form hardpoints by removing the honeycomb core material and replacing it with epoxy/flox. Mount the antennas with screws and nutplates or locknuts.

Transpoder antenna installation

Figure 32:G:2

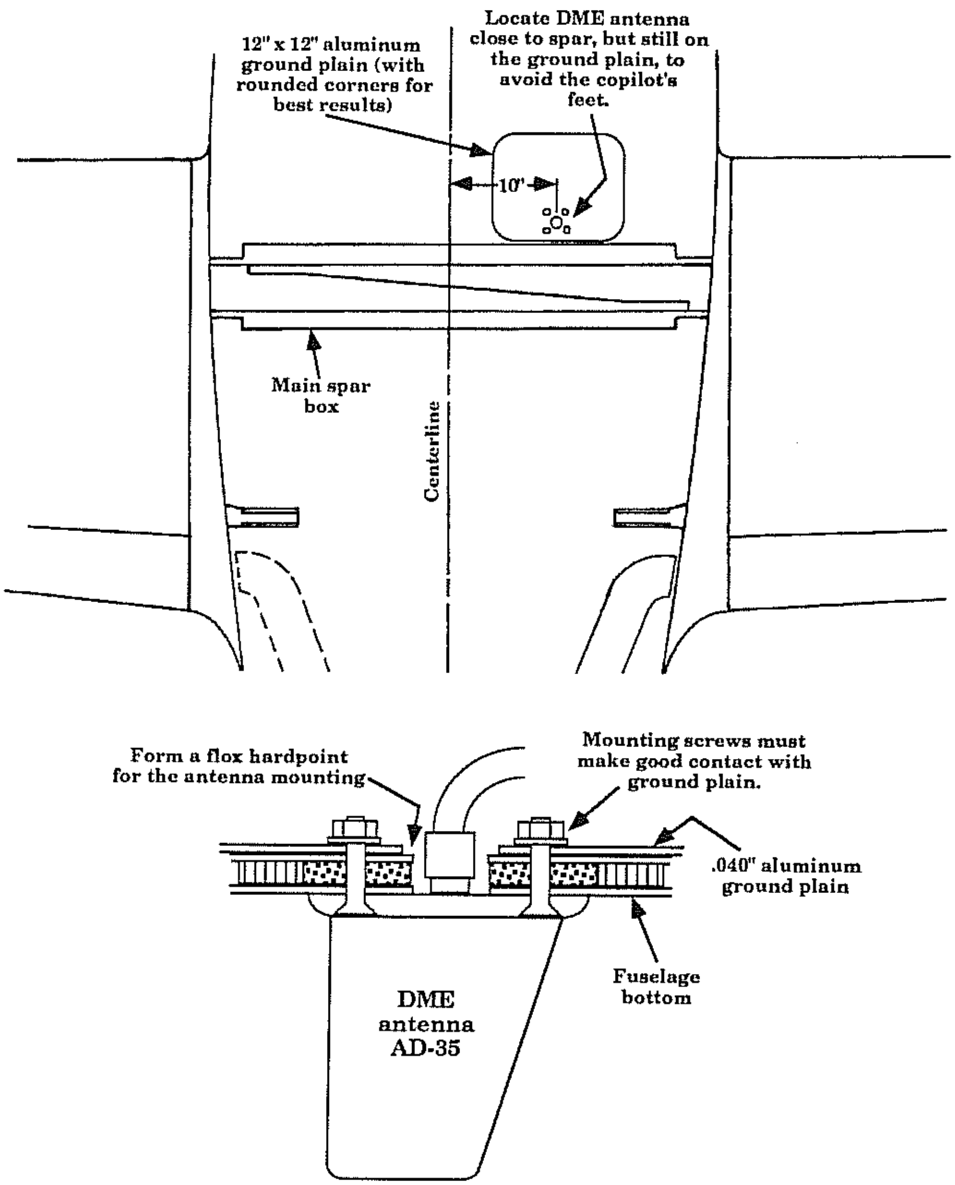


The DME antenna must be spaced at least 24" away from the transponder antenna. On of the better locations we have found is under the copilot's legs, close to the main spar. Although the DME antenna probably won't be centered under your ground plain, performance should still be adequate.

Like the transponder antenna, form a flox hardpoint for mounting the DME antenna. This is especially important with pressurized models, as is keeping all the necessary holes(like for the antenna cable connection) as small as possible.

DME antenna installation

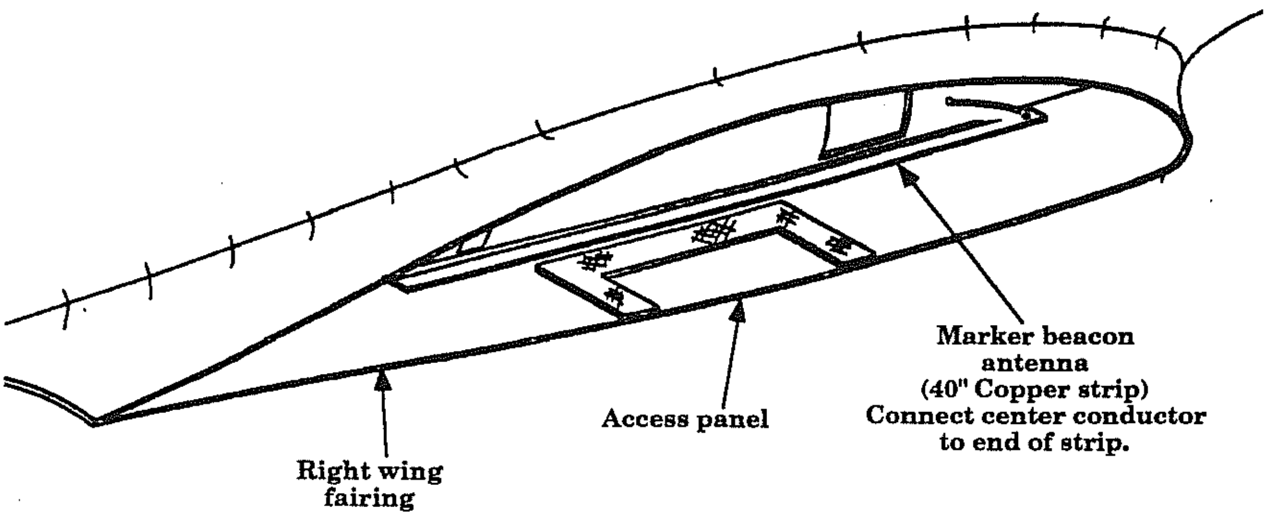
Figure 32:G:3



The marker beacon antenna needs to look downward. The fiberglass wing fairings are excellent for this application. Install the copper strip marker beacon antenna inside the right wing fairing as shown in Figure 32:G:4. Few dabs of silicon or epoxy/flox will secure the copper strip to the fiberglass. Don't install the marker beacon antenna in the left wing fairing, especially if you want to install the retractable step.

Marker beacon antenna

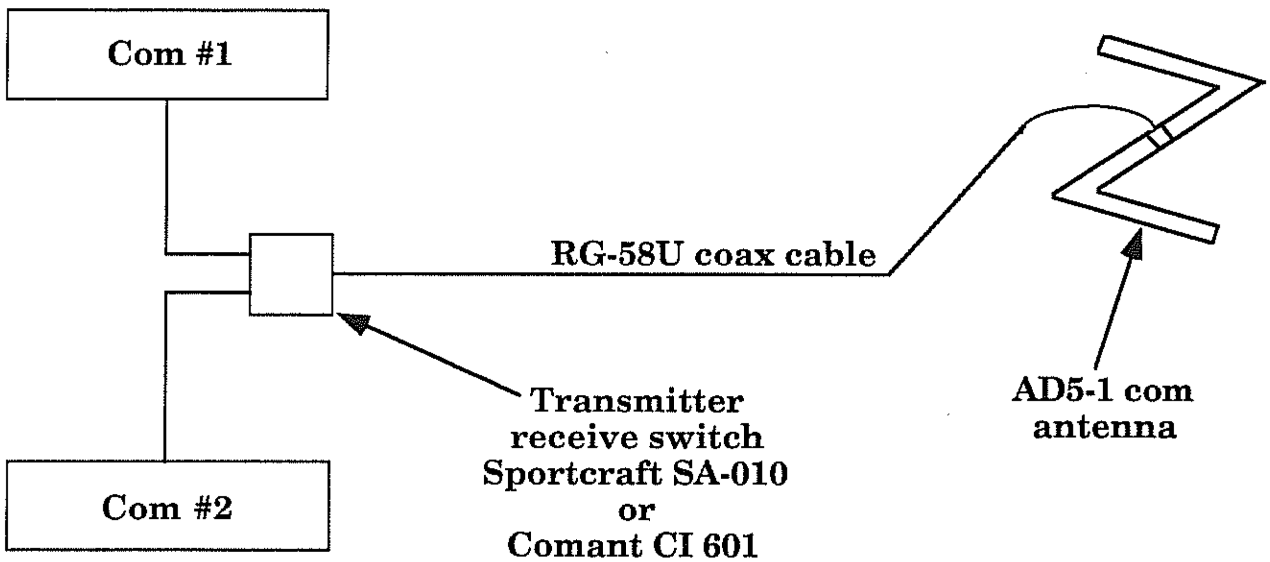
Figure 32:G:4



Because we use one communication antenna in the vertical stab for two com radios, a splitter is needed in the antenna cable. While there can be some signal loss, this arrangement has performed adequately in our prototypes. The only other location for a com antenna would be external.

Com antenna sharing

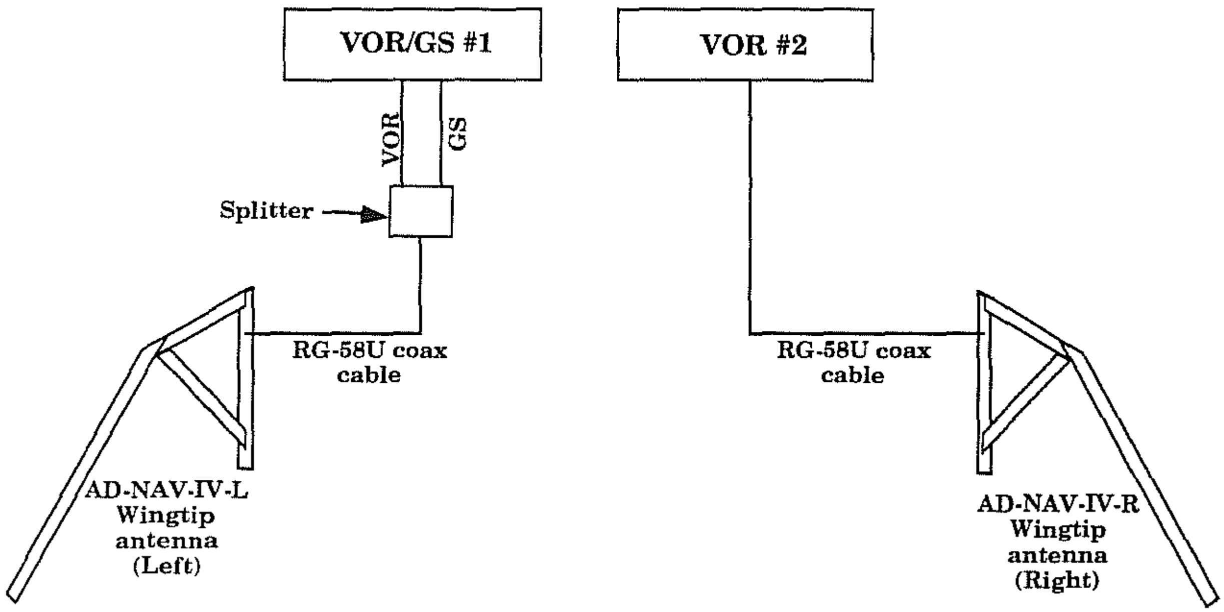
Figure 32:G:5



The latest and greatest theory for optimum VOR antenna performance is to use only one antenna per radio. We have set up our wingtip VOR antennas so the left antenna drives the #1 VOR with a glideslope. A splitter is needed in this line to separate the VOR and glideslope signal to the radio. The right antenna drives the #2 VOR with no glideslope.

VOR antenna routing

Figure 32:G:6



H. PRESSURIZATION SYSTEM WIRING and INSTALLATION

It is recommended that the testing as described in this section be performed at a pressurization testing facility. Prior to pressurizing the aircraft in flight, the aircraft must be pressurized using a pressure test apparatus available at a pressurization testing facility.

WARNING

PROPER INSTALLATION AND TESTING OF THE PRESSURIZATION IS ESSENTIAL FOR THE SAFE OPERATION OF THE PRESSURIZED LANCAIR IV. LANCAIR CONSIDERS IT MANDATORY THAT THE AIRCRAFT BE TESTED AT A PRESSURIZATION TESTING FACILITY. FAILURE OF THE PRESSURIZED CABIN ENVIRONMENT MAY INCAPACITATE THE PILOT AND/OR CAUSE THE LOSS OF AIRCRAFT CONTROL.

Refer to Chapter 29, Section K for the installation of the outflow valve. Wiring and the basics of testing are included in this section. At the end of this is a "Technical Symposium for the Lancair IV-P Cabin Pressurization Control System" by Dukes Inc. This provides all the operating procedures and details of the system.

There are four main components of the pressurization system that require wiring; the cabin pressure controller mounted on the instrument panel, the outflow valve mounted in the gear box, squat switch, and the cabin door seal pump.

The cabin pressure controller basically tells the outflow valve what to do in order to maintain proper cabin pressure. This instrument is internally lighted (Bezel light). The light can be wired and controlled through the dimming rheostat shown in Figure 32:D:3.

Note: The only difference between the 12 and 24V systems is the outflow valve and the bulbs in the controller. The part number for the 12V system is 5024-10 and part #5024-11 for the 24V system.

H1. Before getting started on the pressurization, re-check the cabin door. The cabin door must close correctly for the safe operation of the pressurization. Check the cabin door handles for smooth operation.
Check that all the latches go all the way over center. The required strength of the latches is only achieved in an over-center condition. Adjust the latches as necessary.

Due to revisons, this page has been removed.

H2. Wire the system as shown in Figure 32:H:7 at the end of the section.

Optional Wiring Harness Part Numbers (Strongly recommended!!)

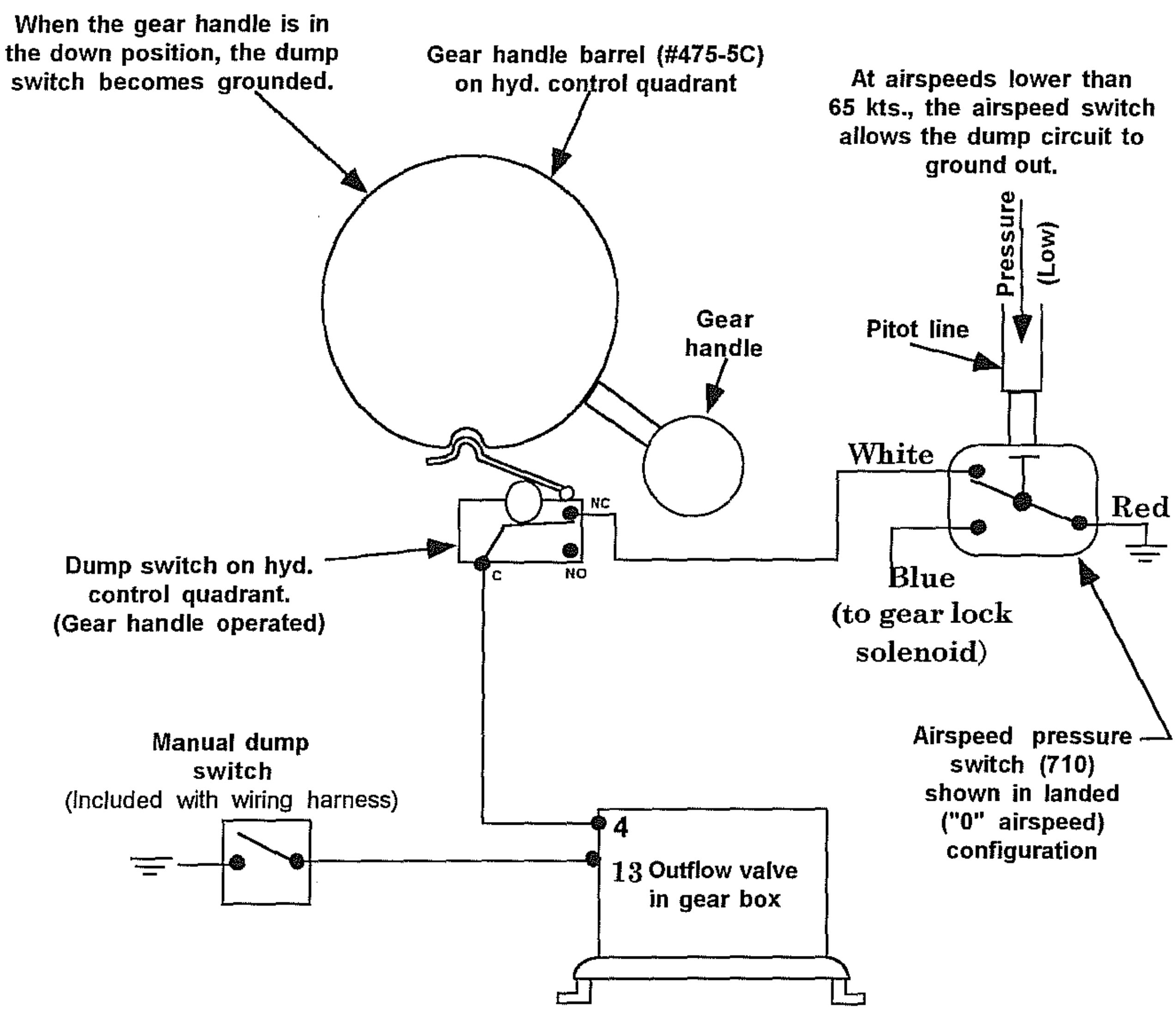
12V system: P/N 725
24V system: P/N 725-28V

If you choose to make your own wiring harness, these are the connectors and tools you will need:
(2) MS27473E10A35S Connector Bodies
(1) MS27506A10-2 back shell, straight
(1) M85049/47N10, 90° Backshell
(1) M22520/2-01 crimp tool w/ insert M22520/2-01 "K41"
(1) MTL 106D Cabin dump switch

greater than outside. There is double redundancy built into this pressure dump system. When the airspeed falls below 65 knots, AND the gear handle is placed in the down position, the outflow valve will open, dumping cabin pressure (Performing stalls in the landing configuration at 20,000 feet is not recommended because the cabin pressure will dump. More on operational limits later). There is also a manual dump switch for use in case the airspeed switch ices up in the "above 65 knot".

Pressure Dump Systems

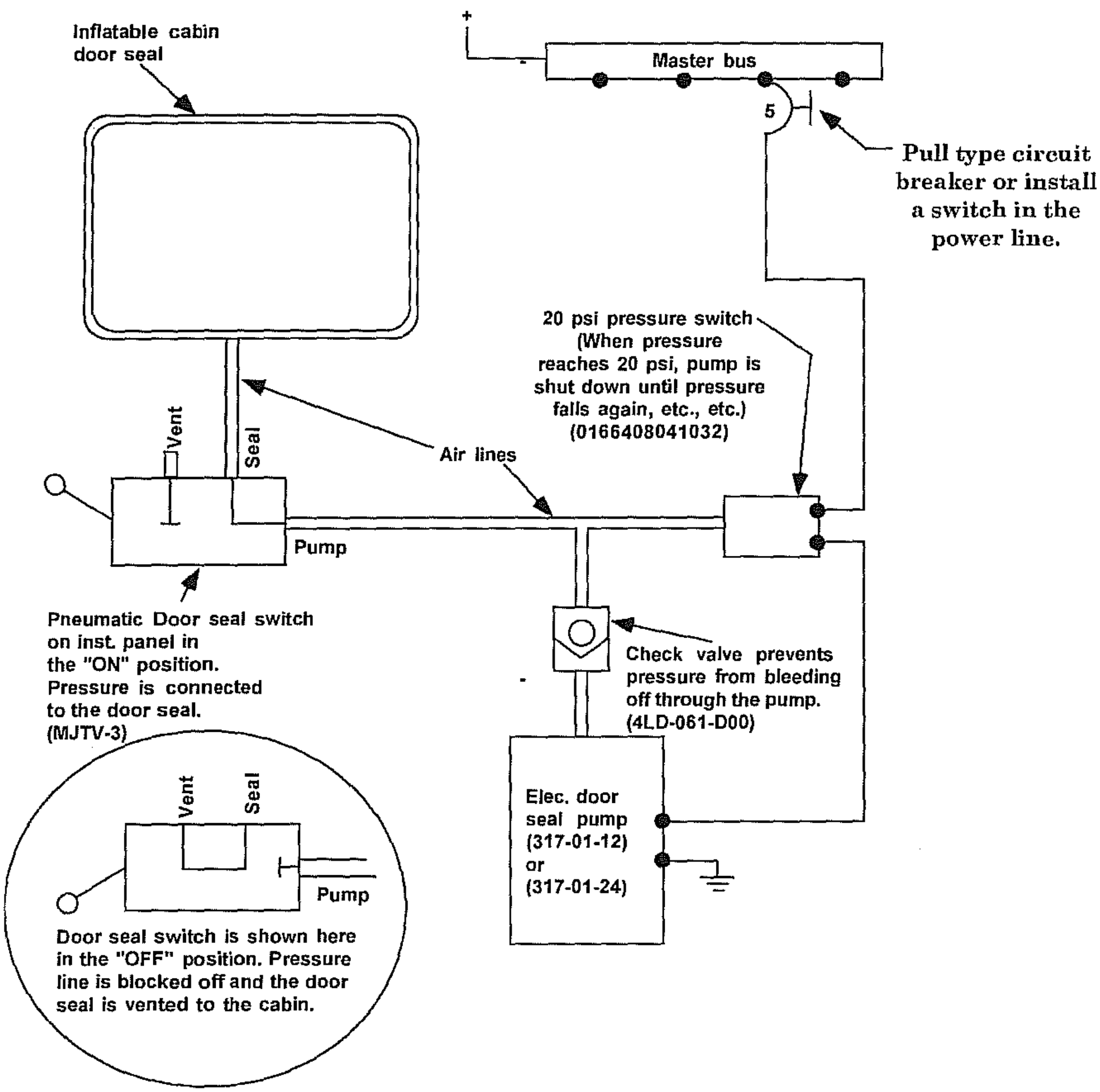
Figure 32:H:3



The inflatable door seal is kept at 20 psi by a remotely mounted air pump. In this system, a pressure switch activates the pump when the seal pressure falls below 20 psi. When the pump is turned off, the pressure in the door seal will vent out through the panel mounted on/off switch.

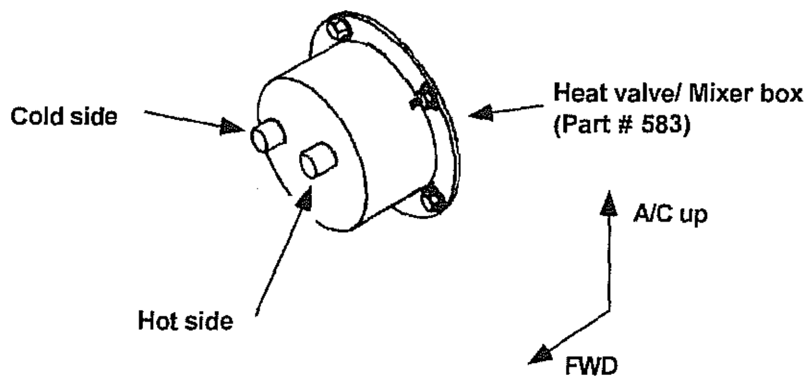
Door Seal Pump Wiring

Figure 32:H:4

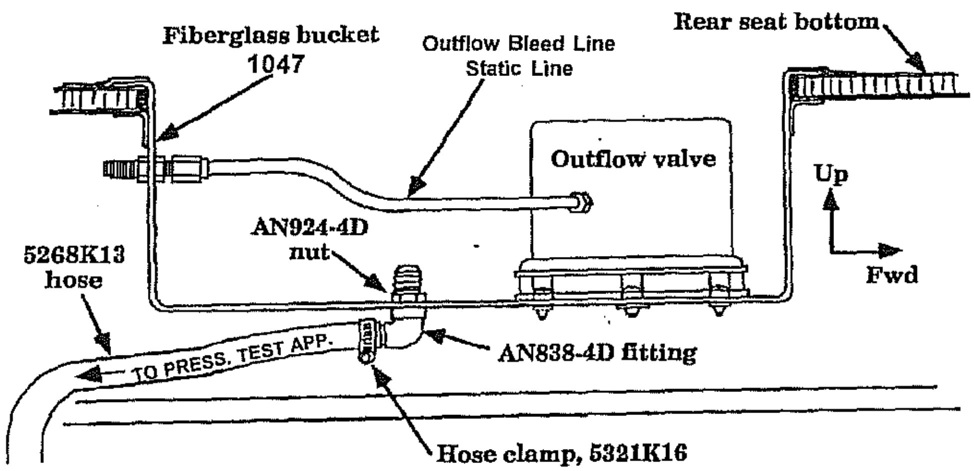


Hooking up the Pressure Test Apparatus

Figure 32:H:5



If you pump the pressurized air through the "hot side", pull the cable to shut off the "cold" side, and vice versa if you pump through the "cold" side.



Disconnect the hose from the elevator compensator . Connect to pressure test apparatus.

H3. Connect your source of pressurized air to the heat valve/mixer box. You can hook up to either the "cold" side or the "hot" side. If you use the "hot side", you must close off the "cold side" by pushing the lever. The reverse applies if you hook up to the "cold side". The O.D. of the nipple of the heat valve/mixer box is 1 1/4".

H4. A source of cabin air pressure must be provided to the pressurization testing equipment in order to read the cabin pressure. The easiest is perhaps to disconnect the pressurized air going to the elevator compensator. Hook this line up to the pressurization test apparatus to read cabin pressure.

H5. Prior to pressurizing the aircraft on the ground, study the notes from Dukes in the following pages to learn how the equipment functions.

Attempt to detect leaks prior to taking the aircraft to the pressurization test facility. It may be inconvenient to spend a lot of time (and money) working on sealing leaks in the pressurization testing facility. Most leaks can be detected by using a common shop compressor or a larger blower. Even the blower of a large shop vacuum (clean the filter) works. Use a respirator!

Methods of Operating the Door Seal while pressurizing the aircraft on the ground:

- Perhaps the easiest method is to enlist a helper to sit inside the aircraft and operate the switch. It is recommended that your helper wear safety goggles and ear muffs just in case...

- Another method is simply to run a set of wires outside (through the door seal) to a power source. Or if you happen to have a remote control (for R/C), you could simply use this to operate the switch from the outside!

Note: As you achieve higher cabin pressures during the leak detection and seal program by getting rid of all the small leaks you will hear a lot of small crackels and pops. Do not be alarmed as this is quite normal. Remember to breathe normally during this process! The fuselage will expand to its final shape and all the snapping and popping will subside.

WARNING: It is recommended that you install a safety net around the door in case it blows. If somebody is inside the aircraft, the net must be easily removable!

Hints on Detecting Leaks:

- Remove the springs of the main gear doors. This makes inspecting for leaks in this area easier!

- The most common sources of leaks are through the firewall, pressure bulkhead, and around the aileron boots. If your cabin will not retain any air, these areas should be your first suspicion.

- Leaks can often be heard. Simply walk around the aircraft and listen for leaks! A leak can also be felt by placing your hand over the suspected source of a leak Another method is to emit some sort of visible smoke inside the cabin and watch where the smoke drifts and gets sucked through. We have had good luck with talcum powder. Or light up a big fat cigar, sit back, and watch where the smoke drifts (if you try this method, be sure you cleaned up all spills of flammable liquids!). It is easiest to see the smoke movement if you are inside the cabin.

- Another method is to brush soapy water on the area where a leak is suspected. The soapy water will "bubble" where there is a leak.

H6. Once the cabin has been sealed satisfactorily, the following procedure for testing the structure is recommended:

Pressure testing the aircraft should be done in two phases: First pressure test with the outflow valve closed. This can be achieved by simply disconnecting the overboard bleed line. The system should not be energized. Be aware that in this configuration the outflow valve will not regulate the cabin pressure; the cabin pressure will only be controlled by the input or the pressure test apparatus.

The second phase is the testing using the aircraft pressurization system. This should first be done on the ground using the pressure test apparatus, then in flight.

On the ground:

- You must overide the airspeed switch to pressurize the aircraft (see page 32-28). Connect a hose to the pitot tube and very gently blow into the hose (about 1/2 psi will give you 100 kts to simulate flight).

- Set the pressure controller as low as possible (turn the knob counter clockwise)

Note: You will not be able to test the aircraft to high pressure differentials but it will allow you to check the general operation of the system. If you put your air on the outflow valve you will hear the motor run as you change the controller settings.

PRESSURE TESTING

1) Pressurize the cabin slowly up to 6.5 psi differential. During the pressurization process watch the cabin area carefully. Don't be alarmed by "popping" noises the first time. You will also see a bulge around the pressure bulkhead. This is normal. Keep at 6.5 psi for a few minutes the first cycle. Release the pressure and look over the structure. Inspect the firewall, pressure bulkhead, engine, and the upper/lower fuselage seam. The safety valve will open between 5.5 to 6.5 psi. If the safety valve hinders the cabin pressurization to 6.5 psi, simply cap it off for the ground testing. **If any of the popping noises cause a rapid depressurization, inspect carefully for damage as separation of laminates may have occured.**

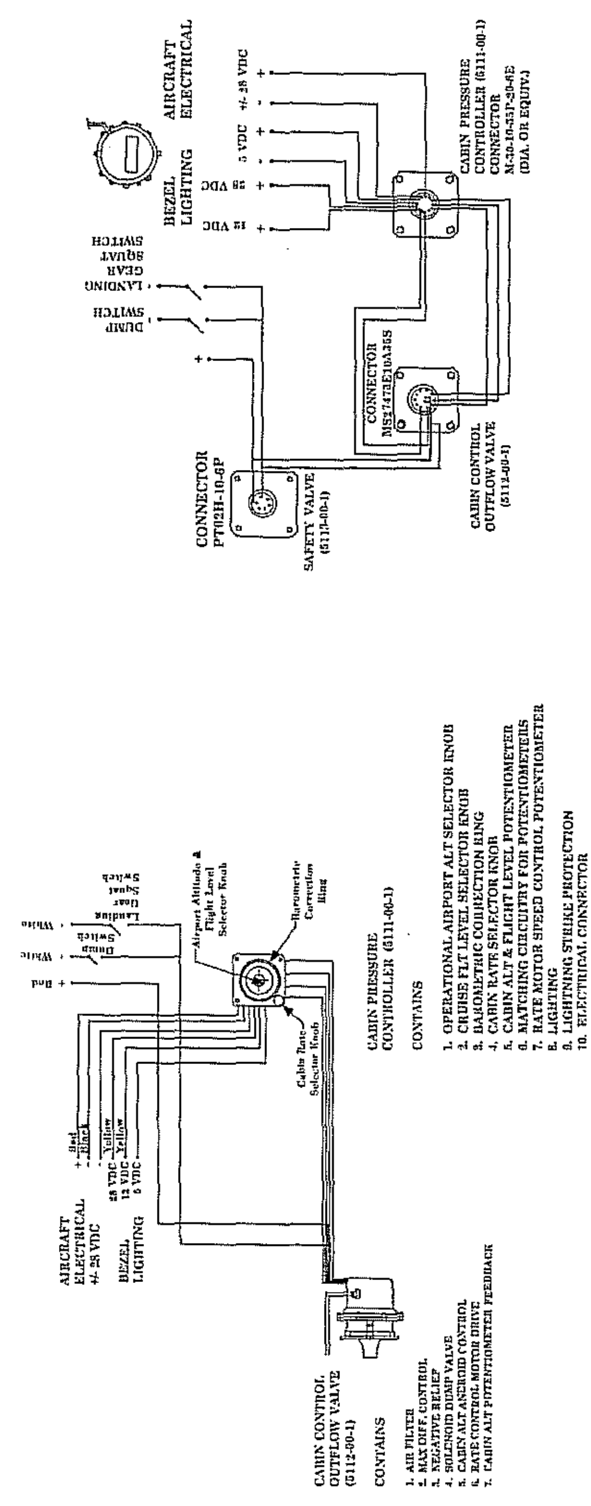
2) Pressurize the cabin 4 more times to a 6.5 psi differential. Each time hold the pressure for ten minutes. After each cycle, inspect the aircraft

Pressurization Testing Log

Cycle No.	Press. Diff.	Time Held	Observations:
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Cabin Pressure Control System Schematic

Figure 32:H:6



Specify 12 or 24 Volt when ordering wiring harness option. Yellow wire lighting (voltage determined at time of cable fabrication.)

14/28 Pressurization Harness

Figure 32:H:7