Lockheed

service news

A SERVICE PUBLICATION OF LOCKHEED-GEORGIA COMPANY, A DIVISION OF LOCKHEED CORPORATION

VOL. 11, NO. 1, JANUARY–MARCH 1984

Hartman Contactors

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LOCKHEED CORPORATION

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Vol. 11, No. 1, January-March 1984

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Cover: **A** Royal Australian Air **Force** C-130 visiting Indonesia is mirrored by runoff from a tropical downpour. RAAF C-130s are also featured inside the back cover, flying in formation over Sydney. In 1983 Australia celebrated 25 years with the Hercules aircraft (see page 17).

Focal Point

ALEX H. LORCH

A Distinctive Difference

Twenty-five years ago the Royal Australian Air Force became the first overseas customer for the C-130 Hercules aircraft. Since that initial purchase. Australia has twice added updated. new models to its fleet. The RAAF has compiled a truly superb operations record in those two and a half decades, as the article on page 17 clearly shows.

Why does a discriminating customer such as the RAAF specify the Hercules aircraft? We like to think it is because both the product and the people who stand behind it are special.

The unique capabilities of the Hercules aircraft place it in a class by itself - one aircraft for the short, medium, and long haul; one aircraft for missions as diverse as cargo hauling and maritime patrol. Its quality sets it apart in applications where dependability, durability, and all-around toughness are not only demanded, but absolutely essential.

But that is only half of the story; we know that customers like the RAAF choose the Hercules aircraft because they know that Lockheed stands behind its products. We support our products in a special way that is distinctly and uniquely Lockheed.

What is it that puts Lockheed support in a class by itself? We think that the key word is commitment. It begins with the production personnel who make sure that quality is the prime ingredient of every step of the assembly process, and carries right on through to our Field Service Representatives, who make it their special responsibility to see that Hercules aircraft customers get all of the value from their airplanes that we build into them. It also show up in ongoing programs that assist the customer with his own support effort, such as Service News magazine.

Our commitment in support of our products goes well beyond the here and now Factory support is not only assured for current, long-range production programs like the C-130, hut also for airplanes we no longer build, such as the C-141 StarLifter and JetStar. Today we are also strengthening our product support capability for future needs. To give just one example, the Hercules Flight Training Center, a state-of-the-art facility now under construction, will enable us to significantly expand our already broad course offerings in flight operations training and related fields.

Despite many superficial differences, doing business in the world of high technology is much like any other arena where people and products come together. In the final analysis, the success of any product is largely a measure of the character of those who build it and stand behind it. That is where the special commitment of Lockheed people to the satisfaction and success of the people who use our products makes a difference. We think it is a difference that is distinctive.

Sincerely,

Alex H. Lorch
Executive Vice President

PRODUCT SUPPORT

LOCKHEED-GEORGIA COMPANY
MARIETTA, GEORGIA 30063

T. J. **Cleland** **Director**

CUSTOMER SERVICE	INTEGRATED LOGISTICS SUPPORT	CUSTOMER SUPPLY
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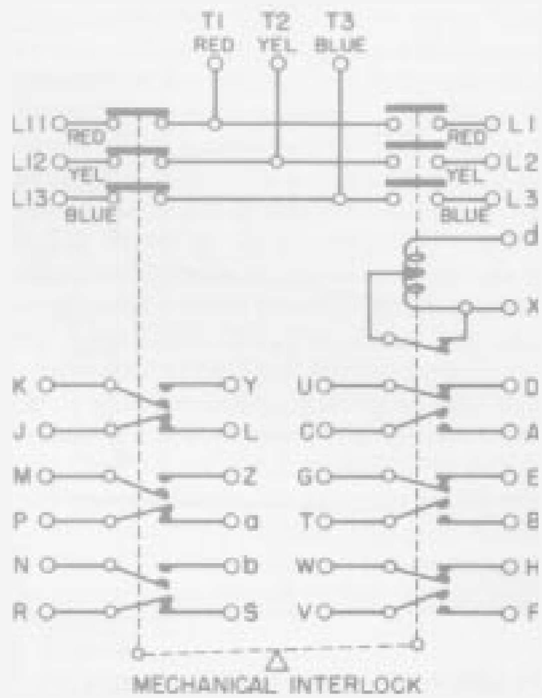
Checking and Adjusting

B-1235 Hartman Contactors



There appears to be a problem being experienced by some of our Hercules aircraft operators which could, in most instances, be avoided with a little preventive maintenance. We continue to receive service trouble reports from our service representatives about generator control/protective panels and frequency sensitive relays that are being damaged because of misadjusted or defective economizing (auxiliary) switches in B-123J contactors. The majority of generator control/protective panel (GCP/GPP) and frequency sensitive relay (FSR) malfunctions could be eliminated by performing a relatively simple check of the economizing switch.

Application

All Hercules aircraft except A-models have at least nine B-123J contactors (relays): five are called generator line contactors (GLCs) and four are called bus tie contactors (BTCs). The generator line contactors and bus tie contactors automatically connect the operating generators to the four AC buses. These contactors are located on the aft side of the upper main AC distribution panel at the fuselage station 245 bulkhead (Figure 1). In addition, some Hercules aircraft have a tenth B-123J contactor, which is used when the aircraft is on the ground as a bus tie to connect power from the APU-driven generator to the main AC bus. This contactor is located on the aft side of the lower main AC distribution panel (Figure 2), which is directly beneath the upper main AC distribution panel.

Another contactor, labeled “EXT AC PWR CONTACTOR” in Figure 2, is located next to the APU-to-main bus contactor. This contactor appears to be identical to the B-123J contactor, but is not. It has the part number B-123K and has a different contact arrangement than the B-123J contactor. Its function is similar to the B-123J contactor, but since there are some differences, the following discussion will only pertain to the B-123J contactor.

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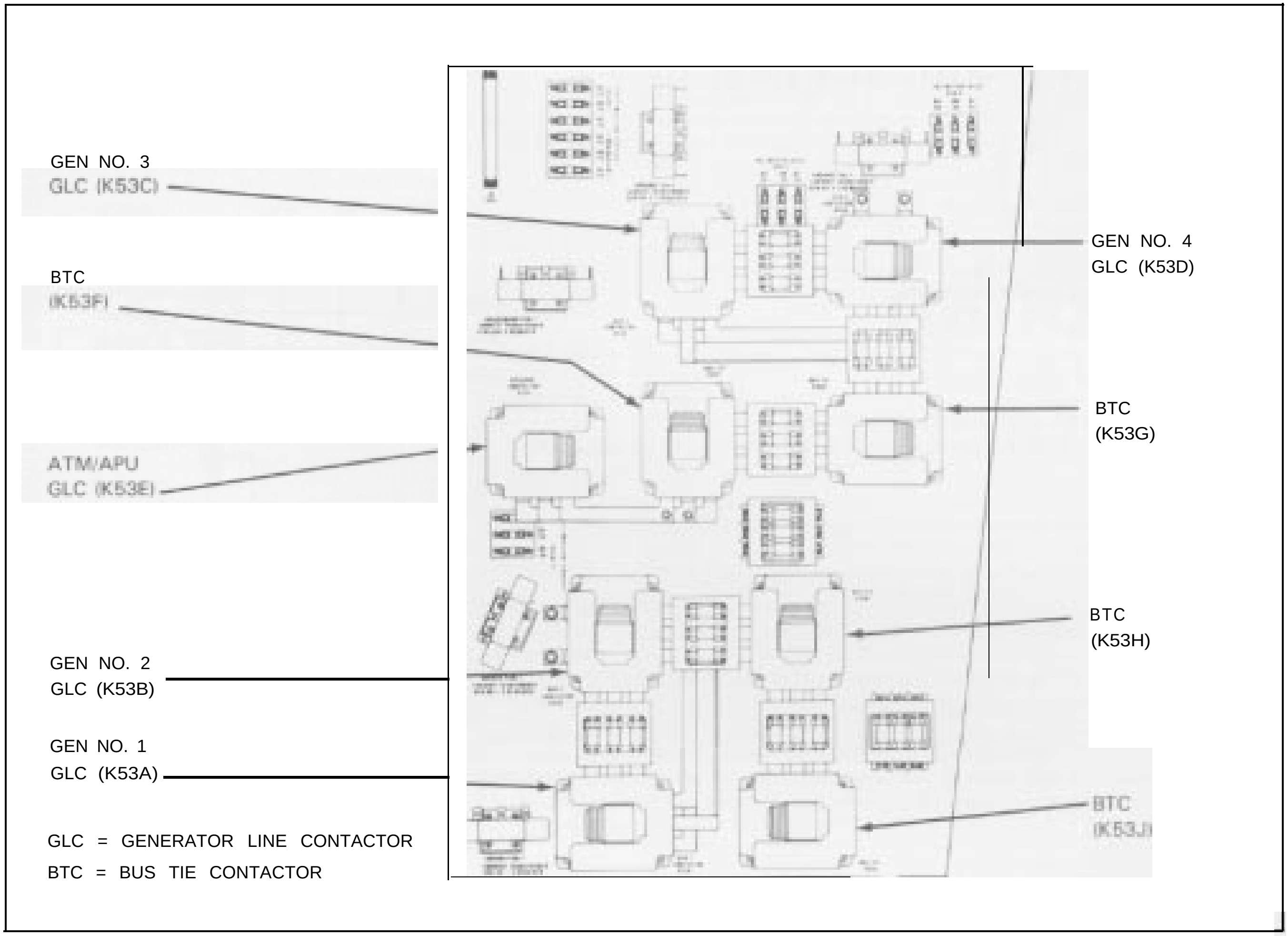
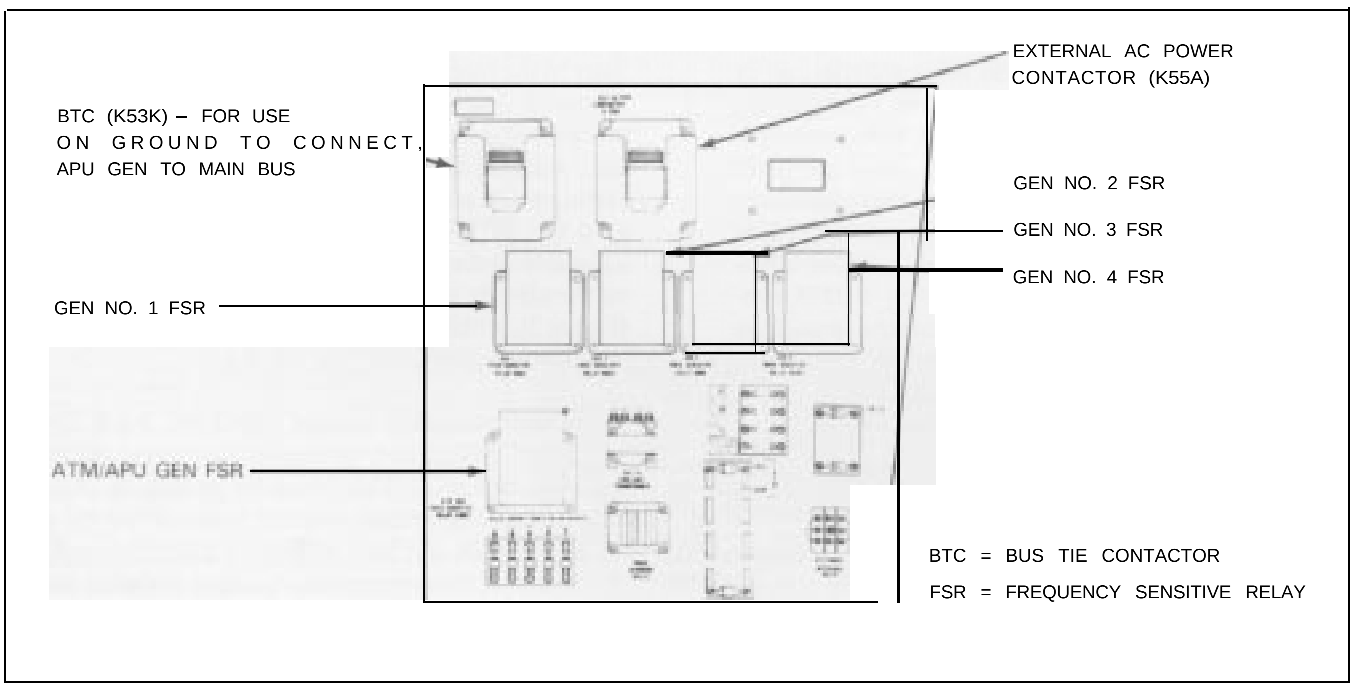


Figure 1. **Aft side of the upper main AC distribution panel.**

Figure **2. Aft side of the lower main AC distribution panel.**



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Contactor Function

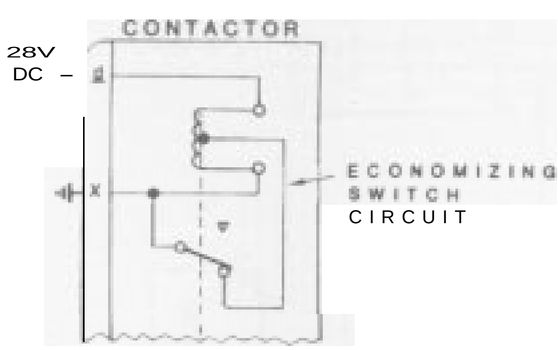
Each contactor has a set of heavy-duty contacts which carry the bus load. There is an economizing switch (also called auxiliary switch) and several smaller contacts in each contactor which control the contactor switching and interlock circuits. The economizing switch is designed so that when 28 VDC power is first applied to the contactor control circuit to "pull in" the relay contacts, two of the four coils in the contactor are bypassed by the economizing switch circuit (Figure 3). This allows increased current flow, which provides fast, positive action for pulling in the relay. Once the contactor has energized, the current decreases in the control circuit because the economizing switch opens, which allows the current to flow through all four coils of the contactor.

If, after power is initially applied to the contactor, the economizing switch does not open, high current flow will continue in the contactor control circuit. This causes a heat build-up in the control circuit components and can eventually cause damage to the generator control/protective panel, the frequency sensitive relay, the contactor itself, or a combination of these components, depending on whether it is a GLC or a BTC economizing switch that is malfunctioning. Let us look at the contactor control circuit more closely to see how these components can be damaged when an economizing switch malfunctions.

Typical Operation

Power to energize the generator line contactors is controlled by frequency sensitive relays. There are five frequency sensitive relays: one for each engine-driven generator and one for the APU-driven generator. They are located on the lower main AC distribution panel (Figure 2). Each frequency sensitive relay controls a generator line contactor as a function of frequency. Figures 4 through 9 illustrate how the system works. These figures are only partial wiring diagrams which show the control network for the GLC and BTCs that are normally controlled by generator number 1. As phase C generator output increases from zero during an engine start, the DC control circuit to the generator line contactor is open because the frequency sensitive relay switch is positioned to LO (Figure 4). As the frequency reaches a point somewhere between 362 Hz and 387 Hz, the frequency sensitive relay switch moves to the HI position, closing the circuit to the GLC. For convenience sake, we will use the value of 380 Hz as the frequency that the circuit closes when the frequency increases from zero (Figure 5). Initially, approximately 7 amps flows through the contactor control circuit to pull in the relay contacts. Almost immediately, the amperage in the circuit drops to between 0.3 and 0.6 amp. This drop in amperage is a result of the economizing switch opening and allowing current to go through all four coils in the contactor (Figure 6).

Figure 3. **B-I 23J** contactor **coil and economizing switch circuit schematic.**



Once the generator No. 1 GLC is energized, the control circuit for bus tie contactor K53F is completed through the switching and interlock contacts of the GLC and a normally closed contact of the external AC power contactor. This allows 28 VDC from the GCP/GPP to energize the bus tie contactor. Also, power is supplied to the LH AC buses through BTC K53H as soon as any other generator line contactor is energized (Figure 7).

If the economizing switch of a GLC or BTC is misadjusted or defective and fails to open (Figures 8 and 9), high current flow will continue in the contactor control circuit. Figure 8 illustrates a defective GLC economizing switch and Figure 9 illustrates a defective BTC economizing switch. High current in the GLC control circuit can damage GLC coils, the FSR, or the transformer-rectifier in the GCP/GPP. High current flow in a BTC control circuit can only damage the contactor coils or the transformer-rectifier.

To protect the components in GLC and BTC control circuits, Lockheed has started incorporating a 2.5 amp circuit breaker in each control circuit on production Hercules aircraft starting with LAC 4947 (Figure 10). The circuit breakers are installed on the forward side of the upper main AC distribution panel (Figure 11). Retrofit installation of the control circuit protection circuit breakers is considered feasible, but at this time, no service bulletins or TCTOs have been issued to incorporate them.

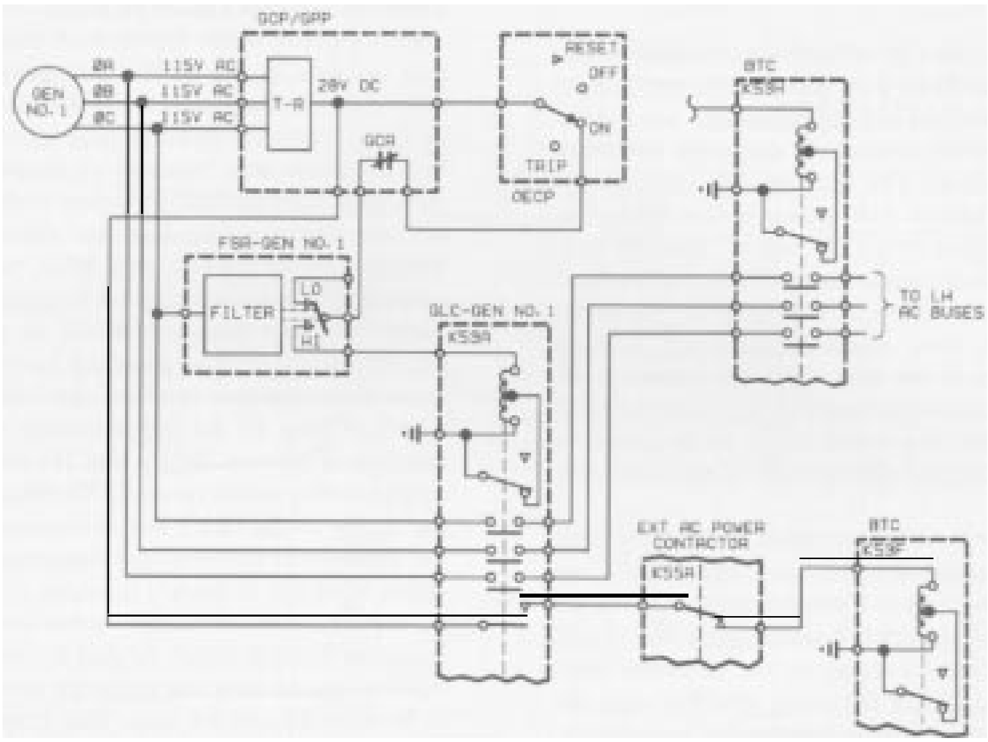
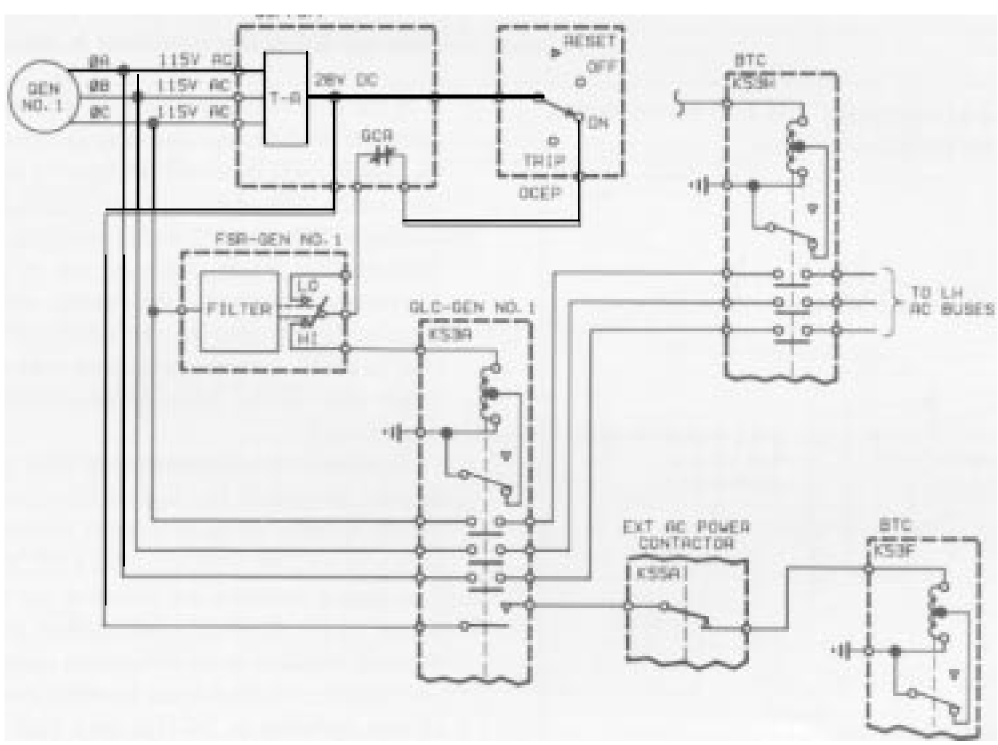


Figure 4. *No. 1* GLC and BTC control circuit-generator frequency less than 380 Hz.

Figure 5. Generator No. 1 frequency at 380 Hz. The FSR-GEN NO. 1 switch moves to HI.



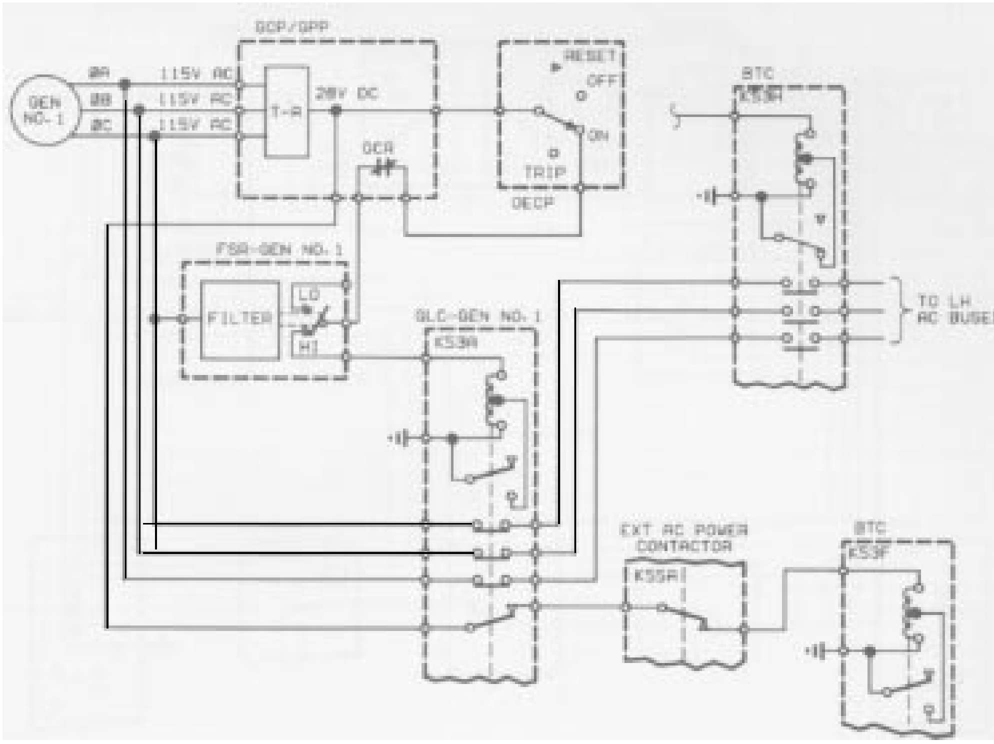
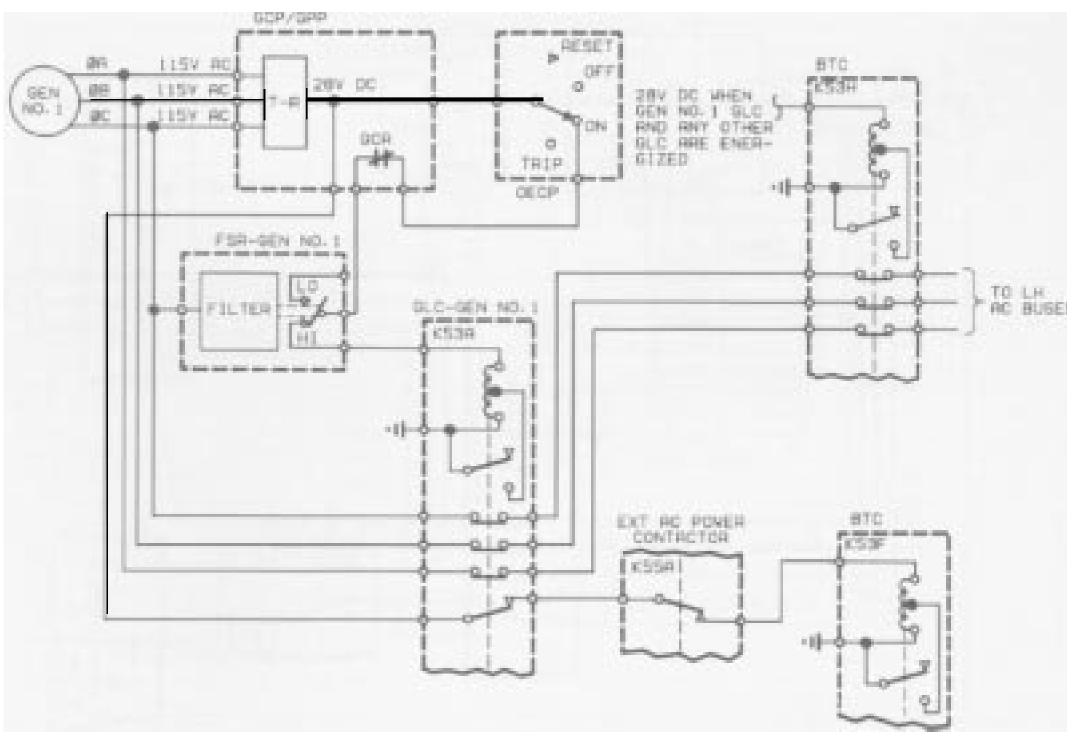


Figure 6. GLC-GEN NO. 1 (K53A) pulled in; economizing switch has opened.

Figure 7. Power from generator No. 1 is supplied to the LH AC buses as soon as another GLC is energized.



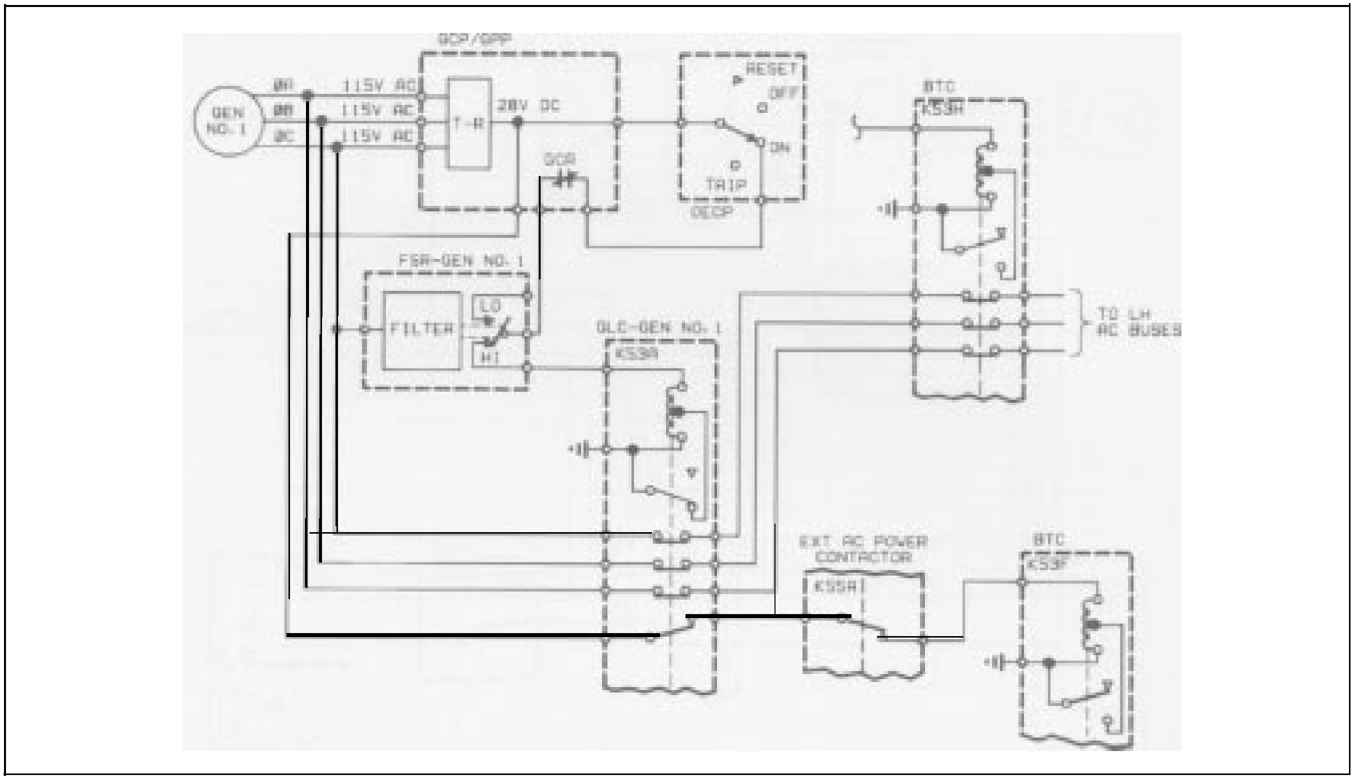
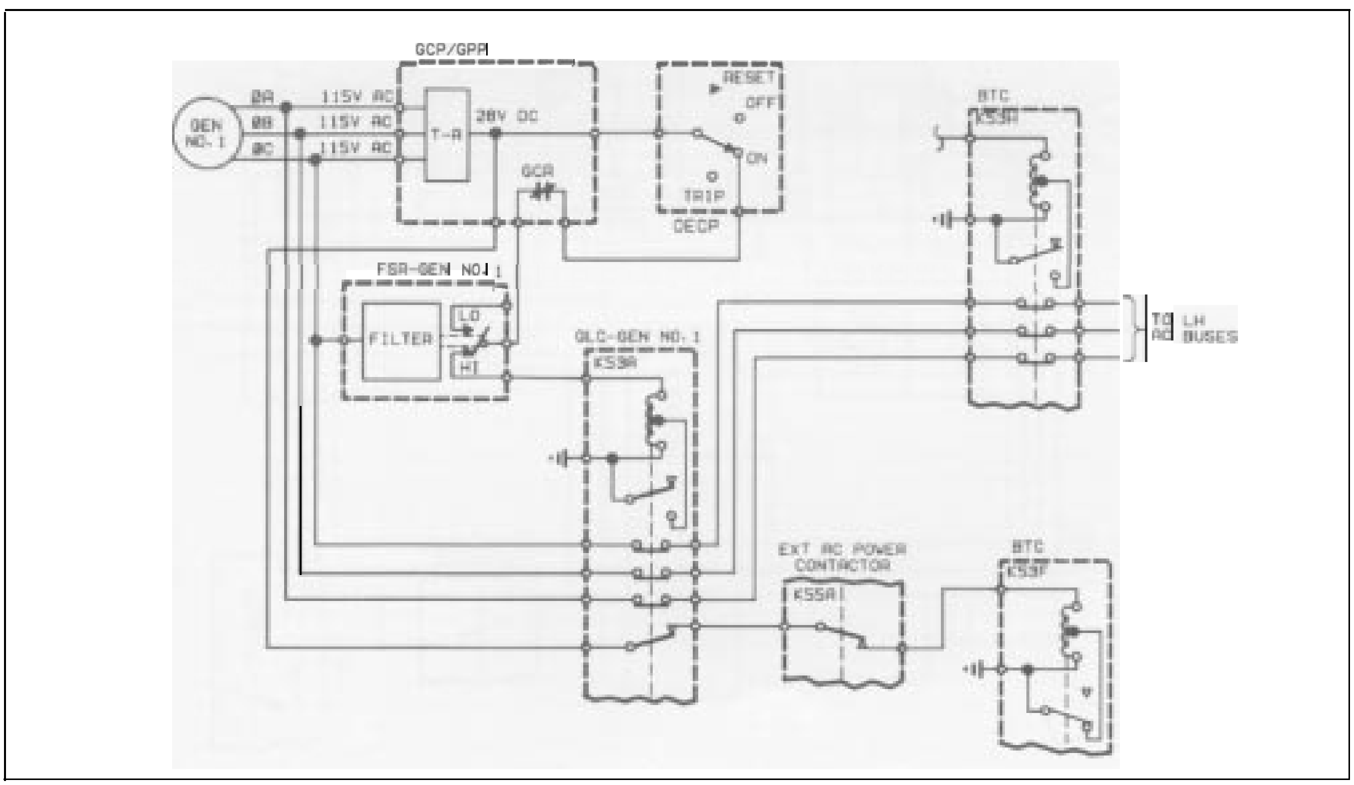


Figure 8. A defective or misadjusted GLC economizing switch causes high current flow in the GLC control circuit.

Figure 9. **A defective or misadjusted BTC economizing switch causes high current flow in the BTC control circuit.**



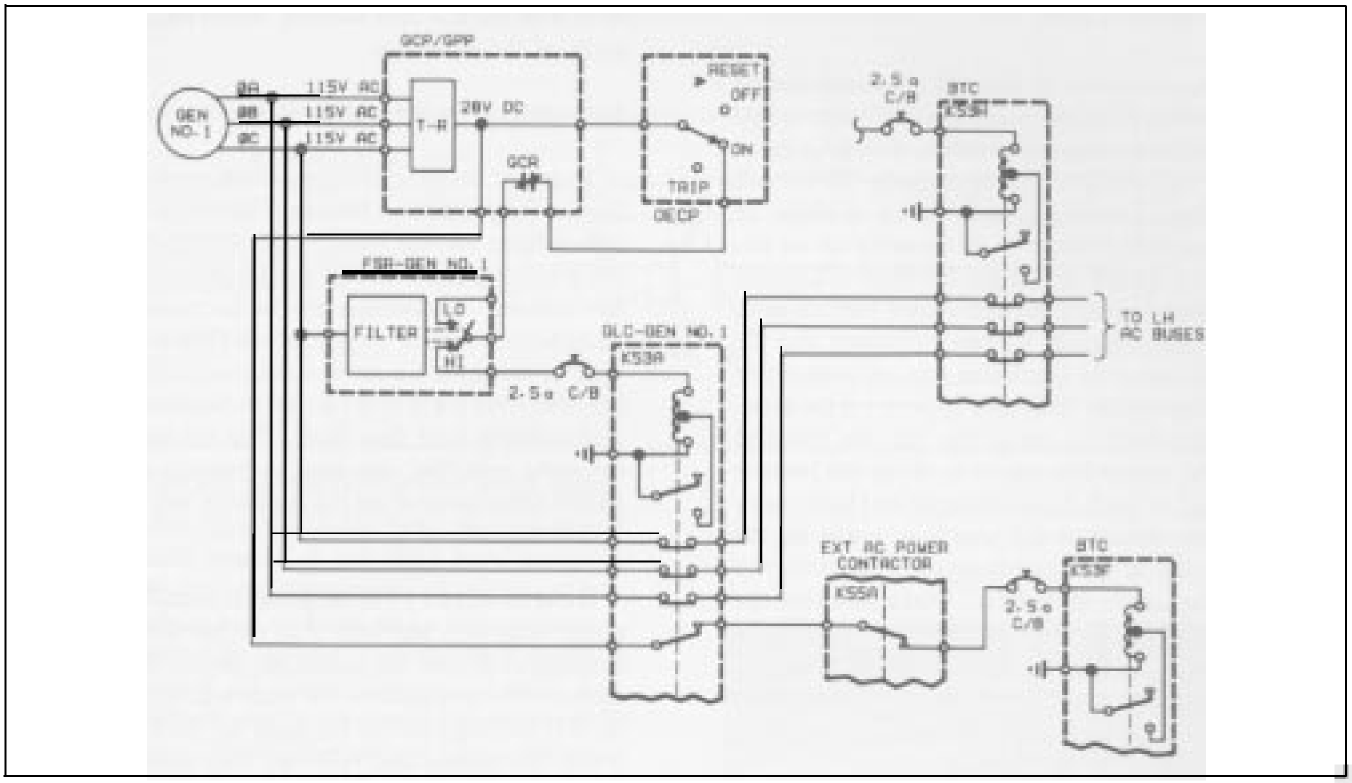
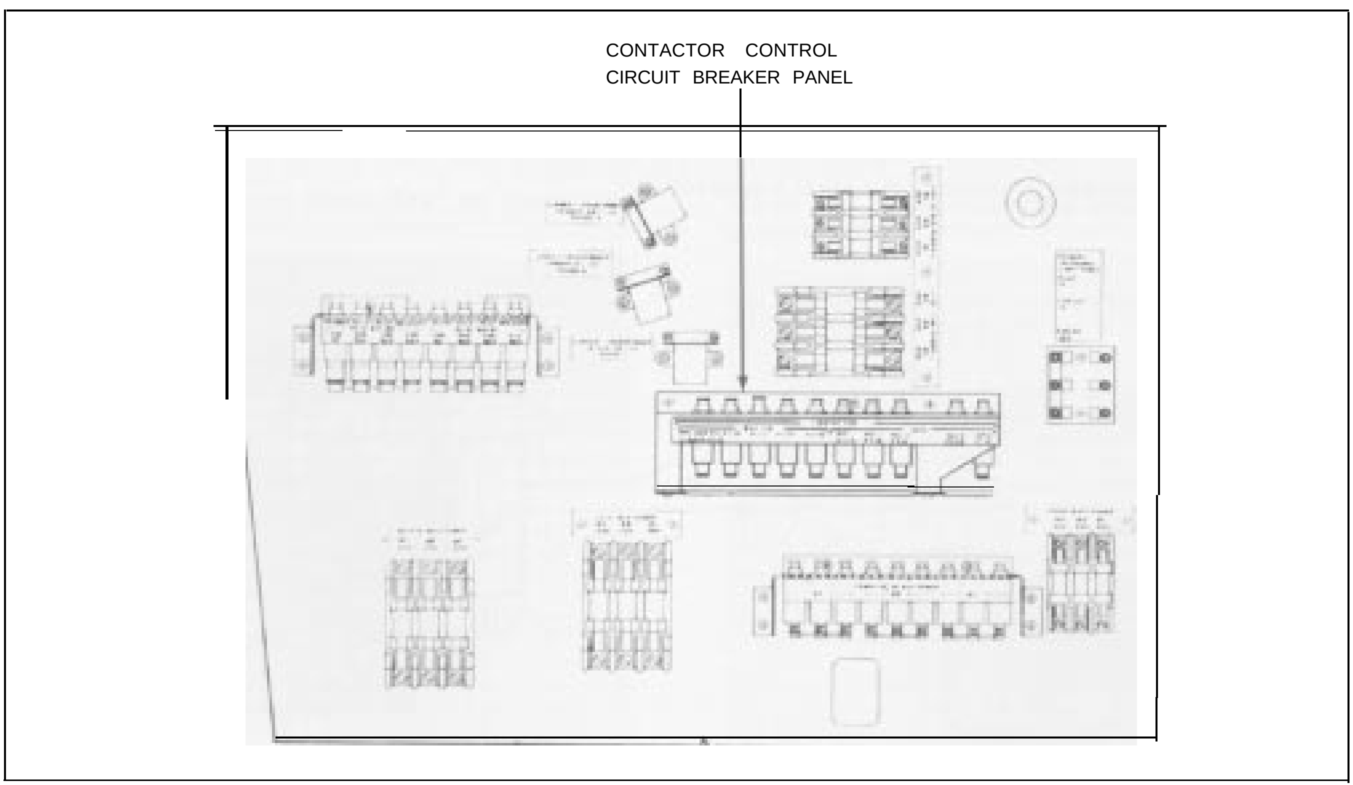


Figure JO. Lockheed incorporated 2.5 amp circuit breakers in GLC and BTC control circuits starting with LAC 4947.

Figure 11 Forward side of the upper main AC distribution panel.



Economizing Switch Check

To reduce the possibility of damaging the components in contactor control circuits because of misadjusted or malfunctioning economizing switches, a check can be done to see if they are functioning properly. This check can be done for contactors already on the airplane, or one in the shop that is about to be installed on an airplane. All that is needed to perform the check is a source of 28 VDC and a locally manufactured test harness. Figure 12 illustrates the test harness schematic and the two pins of the contactor connector that are used to test the economizing switch. To be able to perform the economizing switch check on contactors that are installed on the airplane, ensure that the wires of the test harness are long enough to reach from the upper and lower main AC distribution panels to the iron lung outlet on the right forward side of the cargo compartment, since this is a convenient source of 28 VDC. Make sure that the 28 VDC used to test an aircraft-mounted contactor is from an external DC power supply and not from the AC power supply through the T-R units. No AC power should be on the airplane when performing this check.

To check a contactor economizing switch, whether the contactor is installed on an airplane or in the shop on a workbench, simply connect the test harness to the contactor and a source of 28 VDC. Ensure that the test harness switch is open before making the connections. Once the test harness is connected to the contactor and the power source, close the test harness switch and read the ammeter. If it reads from 0.3 to 0.6 amp, the economizing switch is working normally. If the ammeter reads around 7 amps, the economizing switch should be adjusted in the shop, using the following procedure. If the ammeter reads 10 amps or greater, the contactor coils have been burned and shorted, which requires replacement of the contactor.

Economizing Switch Adjustment Procedure

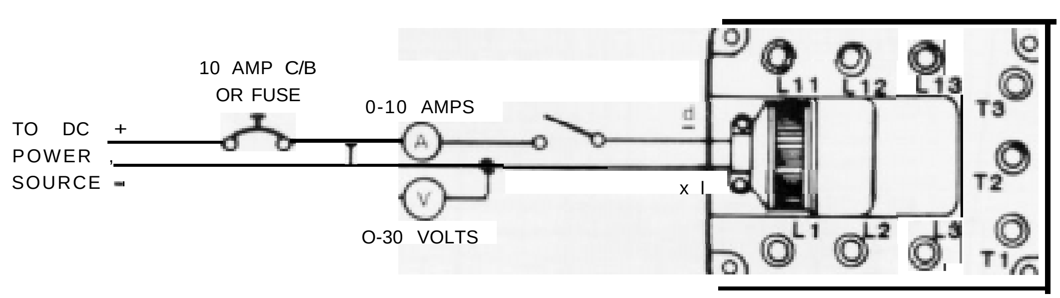
To adjust an economizing switch, several things are needed: a suitable workbench with a 15 to 20 amp variable voltage 28 VDC maximum regulated power supply available, eight locally manufactured shims, and a test harness. The shims are to be manufactured in accordance with the specifications shown in Figure 13. Four of the shims are to be made from 0.008-inch stainless steel shim stock and four are to be made from 0.010-inch stainless steel shim stock. The test harness can be the same one that was used to test the economizing switch adjustment when the contactor was still installed on the airplane (Figure 12).

If the contactor to be adjusted is installed on an airplane, remove it and take it to the workbench. Before starting to remove the contactor, ensure that all applicable safety precautions are observed. Make sure that there is no power on the airplane; i.e., the battery switch is off, the engines and APU are shut down, and external power is disconnected.

To adjust a contactor economizing switch, the contactor has to be partially disassembled. If the contactor came directly from supply, begin disassembly by removing the terminal shield (Figure 14). A contactor that was removed from an airplane should already have the terminal shield removed.

Next, remove the cover. The cover is held on by a total of ten screws; six are accessible from one side and four from the other. Start by removing the four cover plate

Figure 12. Test harness schematic (for local manufacture).



Note: The adjustment shims should be made from 0.008" and 0.010" stainless steel shim stock. A part number should be indelibly stamped on each shim as shown: the 0.008" shim part number is 32997-1 and the 0.010" shim part number is 32997-2.

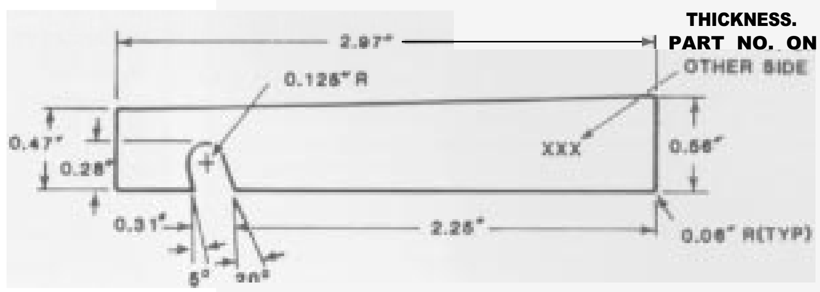


Figure 13. Details of locally manufactured shims.

nuts and washers that secure the base cover plate and base cover plate spacer to the main base assembly (Figure 15). To facilitate the removal of the cover plate nuts, it will help to heat each nut with a 250-watt soldering gun for about 20 seconds and then let it cool for 5 seconds. This will soften the epoxy applied to the nuts by the manufacturer and prevent possible damage to the main base studs. Lift off the plate and spacer to expose the six screws on this side of the contactor that must be removed in order to take off the cover (Figure 16). After the screws are removed, turn the contactor over so that it is resting on the receptacle housing. Remove the four screws on this side of the contactor (Figure 17) and lift off the cover. Check the cover with a straightedge to ensure that the upper surface is flat (Figure 18). If it is either concave or convex, straighten it before reassembly.

During the remainder of this procedure, we will be referring to the front and rear of the contactor. Figure 19 illustrates the directions that will be referenced during the adjustment procedure.

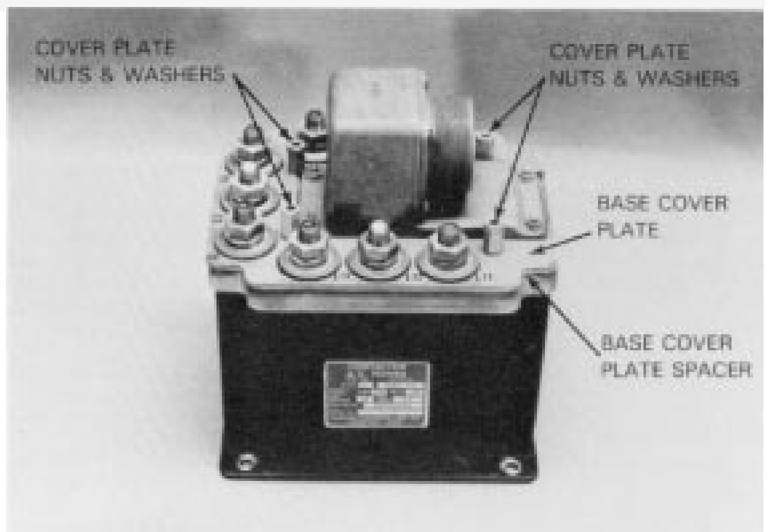


Figure 15. Remove cover plate nuts; then base cover plate and spacer.

Figure 14. Adjustment steps: Start by removing terminal shield.

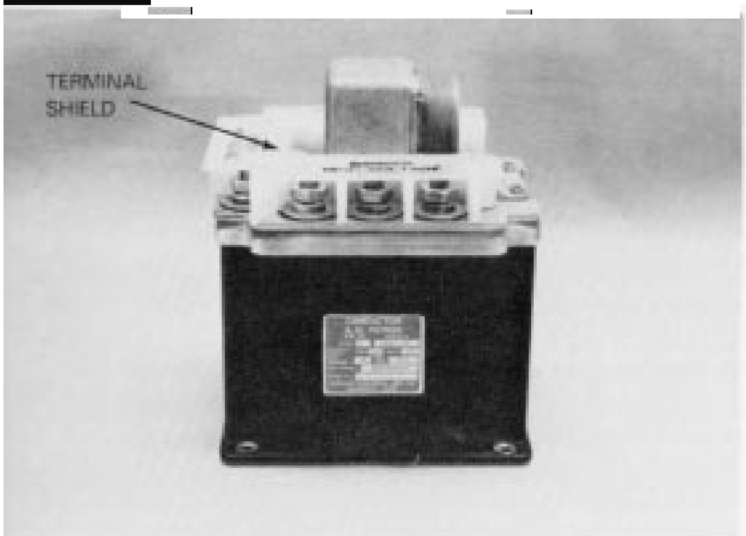
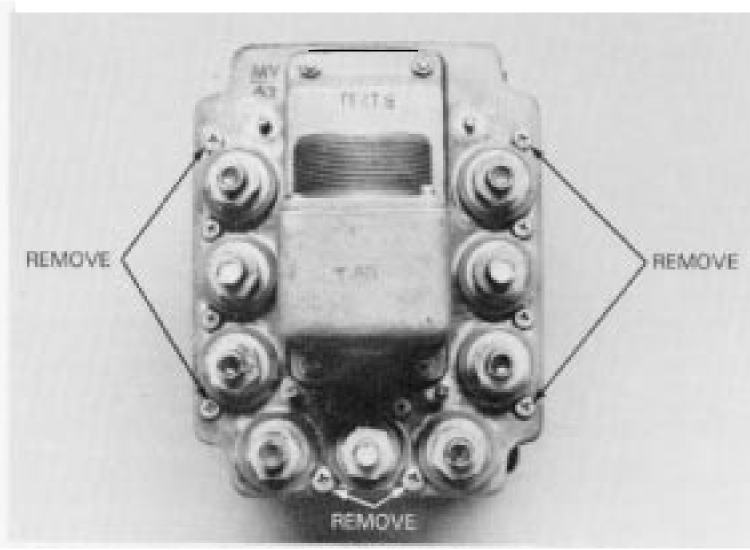


Figure 16. Remove six screws on this side, as shown.



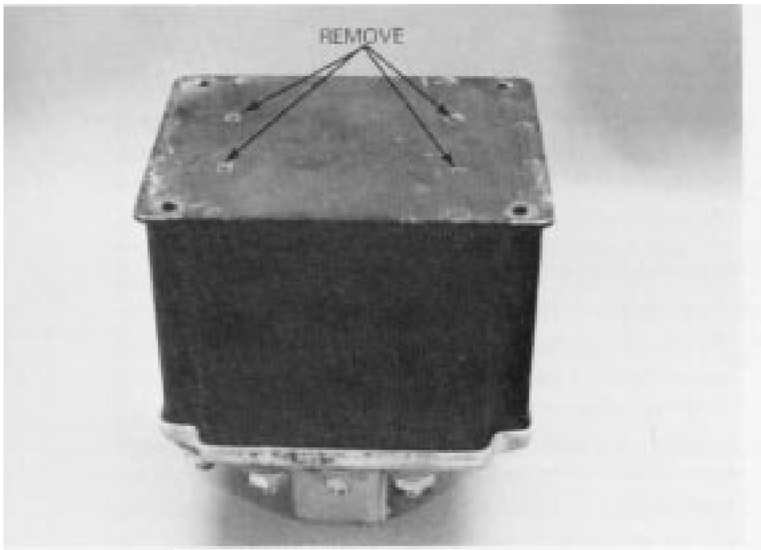


Figure 17 ▲. Then remove the four screws indicated on other side.

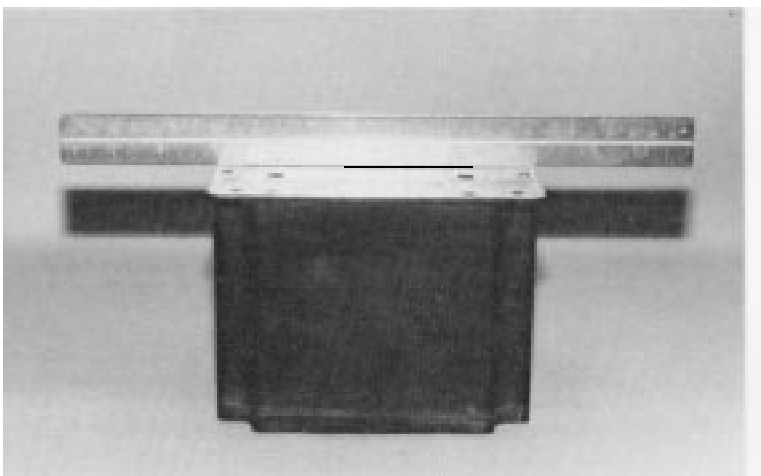
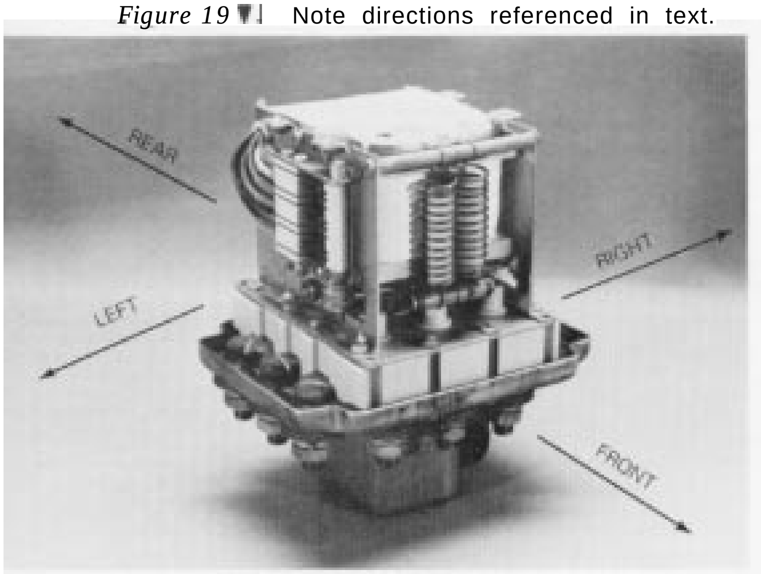


Figure 18 ▲. Check cover for flatness.

Figure 19 ▼. Note directions referenced in text.



Connect the test harness to the contactor receptacle and the 28 VDC power source, but do not close the test harness switch just yet. First install the four 0.008-inch shims between each stator assembly and armature. Figure 20 indicates where the shims are to be installed at the front and rear of the contactor. The notch in the shim slips around the exposed shaft of the stator assembly. After the shims are in place, energize the contactor coils by closing the test harness switch and adjusting the voltage to 27.5 VDC. The ammeter in the test harness should read 7 (+/- 2) amps.

Within three minutes of the time the coils are first energized, bend the economizing switch arm (Figure 21) in small increments until the economizing switch is actuated. When the economizing switch is actuated, the amperage in the circuit should drop to between 0.3 and 0.6 amp, as indicated on the test harness ammeter. If this adjustment is not finished within the three-minute time limit, open the test harness switch and allow the contactor coils to cool. If the contactor coils are not allowed to cool, damage will occur.

When the contactor coils are energized, the 0.008-inch shims should be snug. If they are not, turn the contactor so that the rear of it is facing you and place a number 10 screw or similar object on the contact plate cover to use as a fulcrum. Gently pry up the motor tail pin on each side of the center, normally closed, contact with a screwdriver until the shims are snug (Figure 22). Cycle the contactor six to twelve times by opening and closing the test harness switch and then recheck for a snug fit of the shims.

After adjustment with the 0.008-inch shims, remove the shims and allow the contactor coils to cool for a minimum of five minutes. After the coils have cooled, energize them again to 27.5 volts and then slowly reduce the voltage. Record the drop-out voltage (the voltage at which the contactor deenergizes as registered by the voltmeter in the test harness). The drop-out voltage should be 5 volts or less.

Next, install the four 0.010-inch shims where the 0.008-inch shims were removed. While watching the test harness ammeter, energize the coils. With the thicker shims installed, the economizing switch should not be actuated and the ammeter should read 7 (+/- 2) amps. If the ammeter reads 0.3 to 0.6 amp, the economizing switch has actuated and the switch arm needs to be readjusted. Bend the economizing switch arm just enough to deactuate the switch. The ammeter reading should go back to about 7 amps when the economizing switch is deactuated. If it was necessary to readjust the economizing switch arm, recheck to make sure that the economizing switch will still be actuated with the 0.008-inch shims installed. When the economizing switch arm is

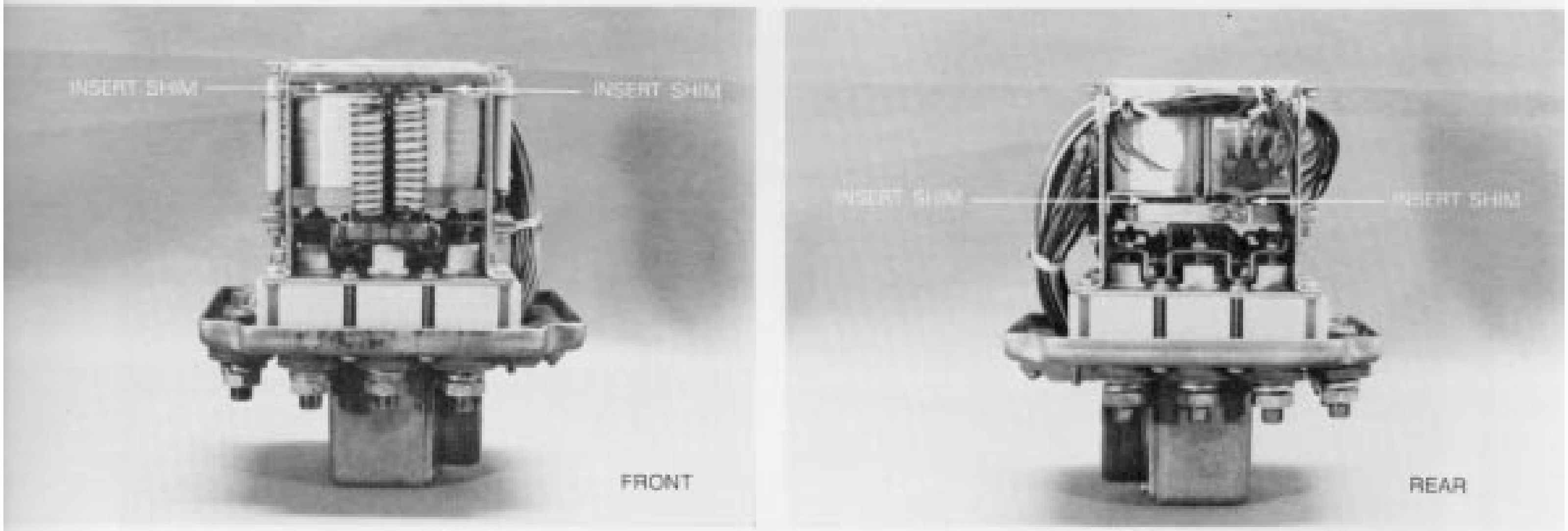


Figure 20 ▲ **Insert shims at the front and rear of contactor.**

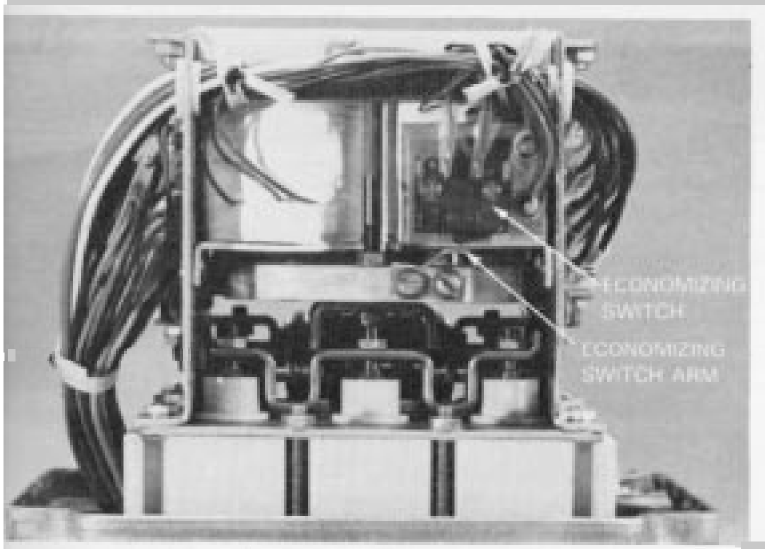
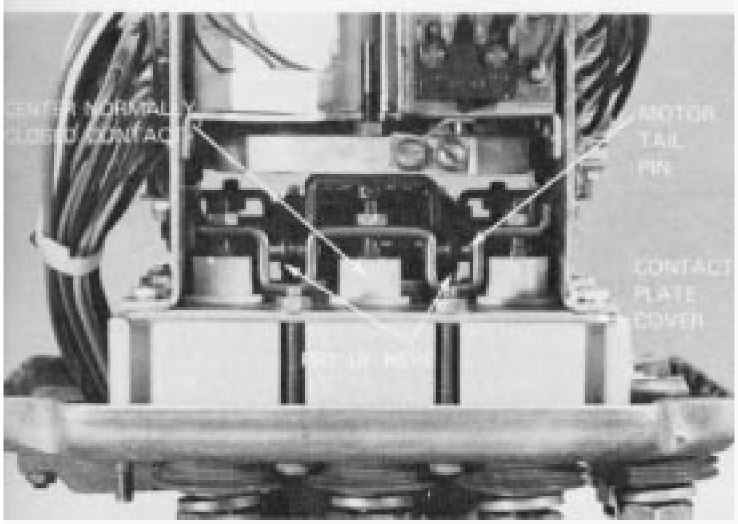


Figure **21 A. Bend economizing switch arm to adjust.**

Figure 22 ▼ **Pry up on motor tail pin to tighten shims.**



adjusted so that it will actuate the economizing switch with the 0.00%inch shims installed, but not with the 0.010-inch shims installed, adjustment is complete and it is time to reinstall the contactor cover.

With power removed from the contactor, install the cover and secure it with the four screws that were previously removed. Tighten the four screws in a diagonal pattern to ensure proper seating. Now energize the coils to 27.5 volts and ensure that the economizing switch is still operating properly. When the test harness switch is first closed, the ammeter reading should be 7 (+/- 2) amps; it should then immediately drop to 0.3 to 0.6 amp if the economizing switch is functioning properly.

Next, slowly reduce the voltage and note the drop-out voltage on the test harness voltmeter. The drop-out voltage should not differ more than 1 volt from the value recorded earlier when the cover was off. If there is more than a 1 volt difference, check the cover again for flatness. If the cover base is straight, remove the cover again and check to see if the 0.008-inch shims are snug when the contactor is energized. Readjust the economizing switch arm and pry up on the motor tail pin as necessary if the shims are not tight.

If the drop-out voltage is within 1 volt of the previously recorded value, cover the four screws with an electrical insulating varnish such as Genera1 Electric Company's Red Glyptal No. 1201, or an equivalent. Now, turn the contactor back over so that it is resting on its cover and reinstall the six screws that were previously removed from this side. Finish the reassembly by installing the base cover plate and spacer and the four cover plate nuts and washers. With the contactor completely reassembled, apply 27.5 volts one more time to ensure that the economizing switch is working properly. If it is, the contactor is ready to be put into service. **SN**

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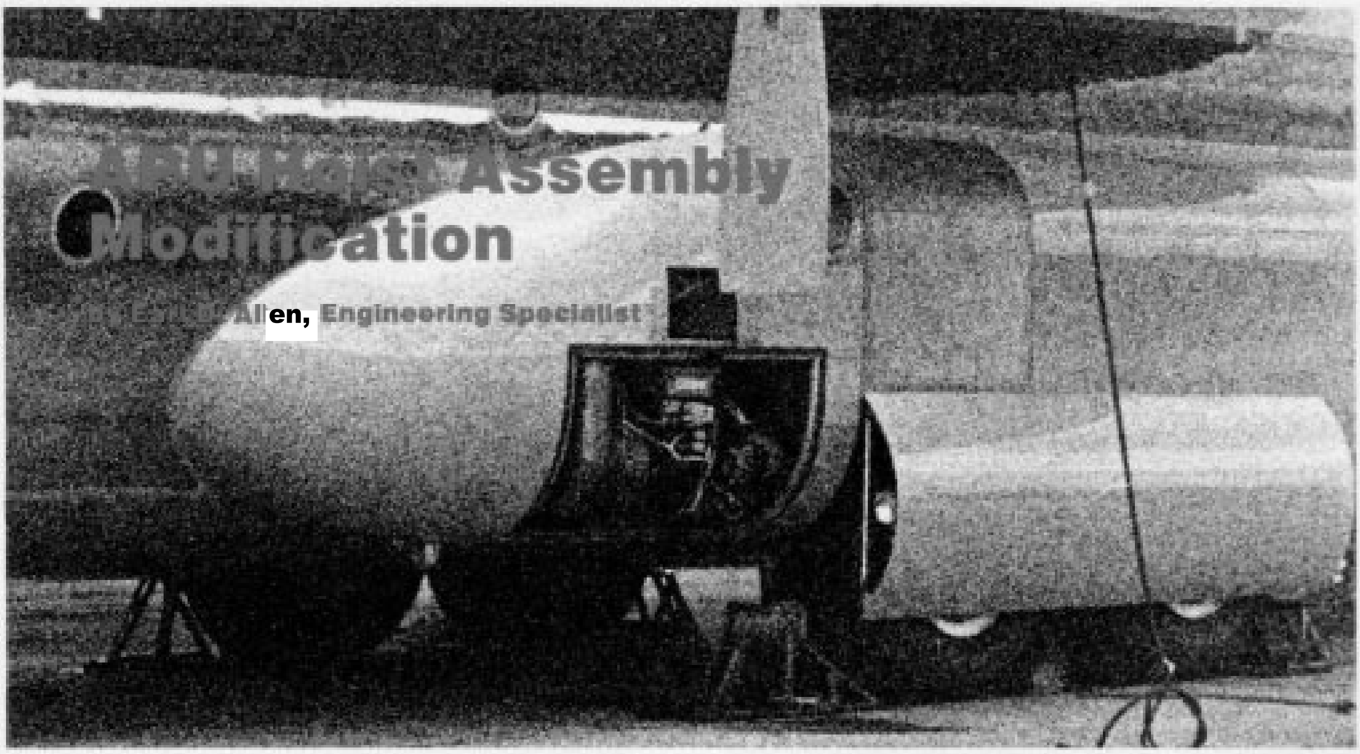


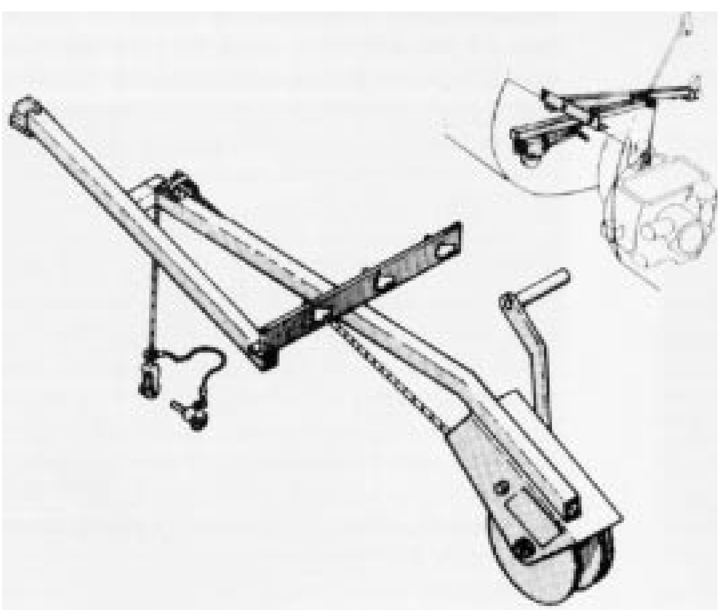
APU Hoist Assembly Modification

Allen, Engineering Specialist

The P/N 34022461 auxiliary power unit (APU) hoist assembly is used to remove and install the AiResearch Model GTCP 85-180L APU on Hercules aircraft LAC 4580 and up (Figure 1). It has come to our attention that occasionally the hoist assembly has been damaged during removal of an APU because an overzealous maintenance technician has attempted to raise the hoist with the APU still bolted to the aircraft. With the APU still attached to the aircraft, enough force can be applied to the pulley pin to bend it. With the pulley pin bent, the hoist cable can slip off the pulley during a hoisting operation.

To prevent the pulley pin from bending and allowing the cable to slip off, Lockheed has designed a brace assembly, P/N 3402246-47, which is to be welded to the hoist assembly (Figure 2). The addition of the brace assembly and a slightly longer pulley pin will prevent the pulley pin from bending if too much force is inadvertently applied to the hoist assembly.

Figure 1. Unmodified P/N 3402246-l hoist assembly.



The 3402246-47 brace assembly and the slightly longer pulley pin, P/N MS20392-4C73, can be ordered from Lockheed and installed on a 3402246-l APU hoist assembly using the following instructions.

Remove the cotter pin, washers, pulley pin, and pulley from the end of the hoist beam. Position the 3402246-47 brace assembly against the end of the beam so that there is a 0.7-inch gap as shown in Figure 3 and clamp the brace in position. Ensure that the pulley can turn freely when it is positioned between the brace and the hoist beam. If the pulley turns freely, weld the brace assembly in place. Next, drill a 5/16-inch hole in the brace assembly in line with the two existing holes in the beam.

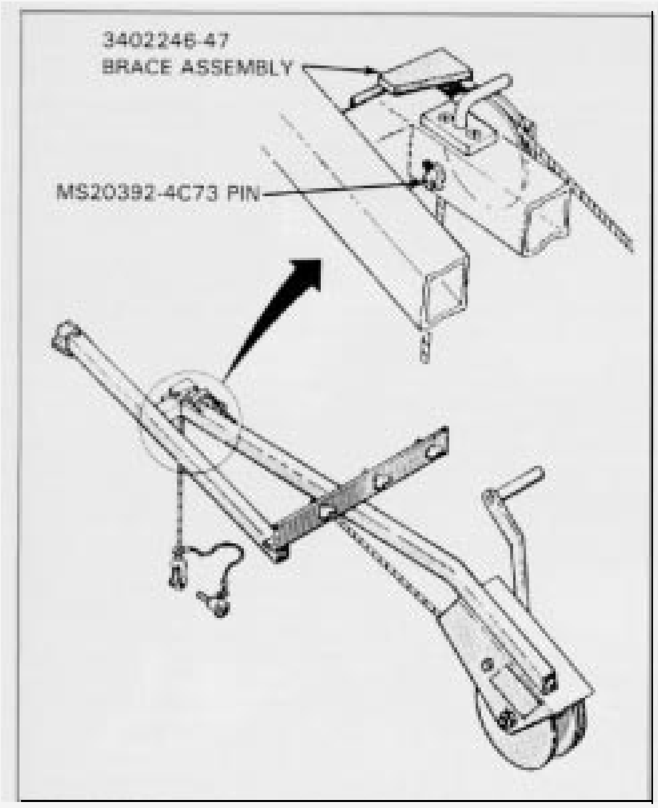
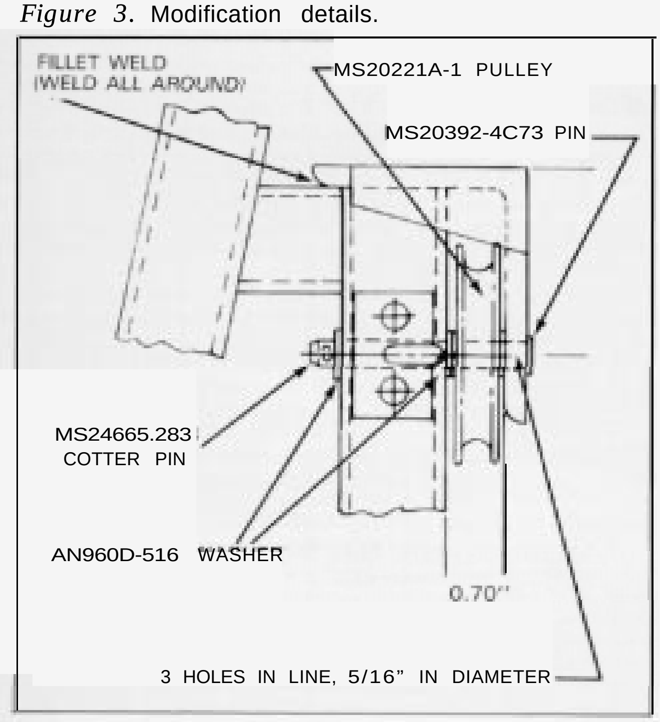


Figure 2. Modified P/N 3402246-l hoist assembly.

Figure 3. Modification details.



Place the hoist cable over the pulley and install the pulley with one washer between the pulley and the hoist beam, using the longer MS20392-4C73 pulley pin as shown in Figure 3. Then install the second washer and secure everything with a cotter pin. The hoist assembly is now ready for use.

Figure 4 shows the construction details of the -47 brace assembly. It consists of a plate and an angle that are welded together. The P/N 340224649 angle is made from low-carbon, hot-rolled steel angle stock (3"x2-1/2"x1/4"x2"); the P/N 3402246-51 plate is made from low-carbon, hot-rolled steel sheet (l"x2"x3/16").

We would like to emphasize that if proper procedures are followed when using the APU hoist assembly, no problem should be experienced even without the brace assembly. However, Lockheed recommends adding the brace assembly; it is a worthwhile safety precaution.

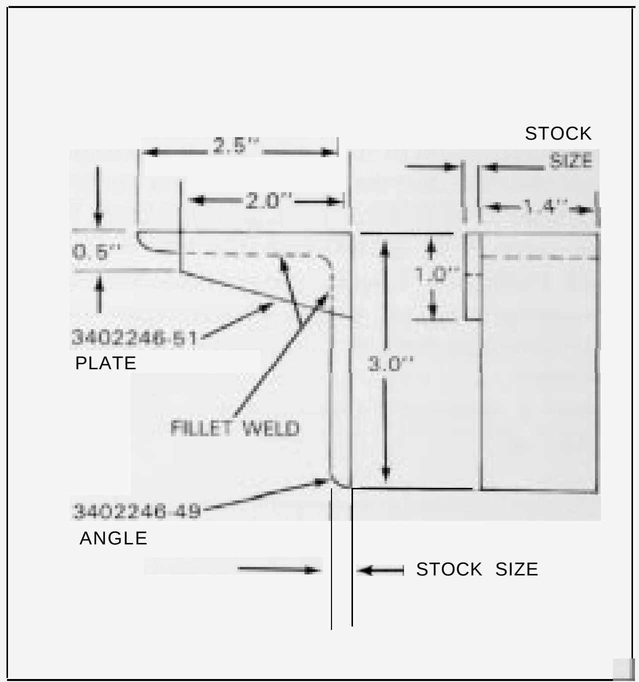


Figure 4. Construction details of the P/N 3402246-47 brace assembly.

How Safe Are Safety Solvents?

During manufacturing and maintaining aerospace equipment, “safety solvents” are used extensively for cleaning and degreasing of parts and assemblies. They are specified primarily because of their nonflammable characteristics, but in some cases the term “safety” solvent may give the user a false sense of security. Two important factors should always be kept in mind:

-Simply because a solvent initially has no flash point does not guarantee that it will not develop one during prolonged use.

-Even though the fire hazard may be reduced, the chemical toxicity of many safety solvents can still present a significant health problem.

Safety solvents are usually mixtures of halogenated organic solvents and petroleum hydrocarbons. With the proper combination of these products, it is possible to raise or even eliminate the liquids flash point (the lowest temperature at which a liquid will give off enough flammable vapor to be ignited) and thus reduce the fire hazard. During use, however, the nonflammable vapor tends to evaporate first, leaving a higher concentration of the flammable portion. Ultimately, it is possible for a condition to be reached where the remaining liquid develops a flash point and becomes a potential fire hazard.

It is also important to keep in mind that the term “safety solvent” applies only to a reduction in fire hazard, and not to the possible toxicity of these substances. For example, one safety solvent used extensively is 1 ,l ,I-trichloroethane. It is often supplied in 55-gallon drums, marketed under many trade names. When handled and used properly, this solvent is safe for its intended purposes. However, inhaling, swallowing, or prolonged skin contact with this product is dangerous. Furthermore, toxic products result when the fumes of l,l,l-trichloroethane are drawn through a high heat source such as welding or cigarettes; therefore, the use of this solvent — and all others — should be avoided where these conditions exist.

The key to safety with safety solvents is to treat them like any other potentially hazardous material. The following items deserve particular mention:

-Use these solvents only in areas where there is good general ventilation.

-Use face and body protection whenever and wherever the solvents may contact face, body, or hand areas.

-Use the correct respirator when working around solvents in all situations requiring respirator usage. If used in a confined space, additional precautions are necessary. Consult the applicable technical manuals for detailed information.

■ Do not smoke, weld, or use any other high heat source in areas where l,l, I-trichloroethane or other solvents are being used.

■ Keep solvents in proper, and correctly labeled, containers.

muse a safety solvent from a safety can. This reduces the chances of splashing and spilling, and minimizes evaporation.

Safety solvents do a fine job and save a lot of time when they are used properly. But like any other tool, they can be dangerous if abused. Be sure you know how to use them correctly. Give them the care and respect they deserve.

service news

Australia Celebrates

25 Years with **the C-130**

In November of 1983, the Royal Australian Air Force marked a quarter century of C-130 Hercules aircraft operations.

The silver anniversary celebration, which was held at the transport fleet's operating base at Richmond, New South Wales, included dignitaries from industry and government, as well as current and former members of RAAF C-130 air and ground personnel.

During the RAAF Base Richmond ceremonies, Lockheed-Georgia Company Vice President for Marketing Charlie Ray presented a commemorative plaque recognizing the RAAF's superb record with the Hercules aircraft, both in terms of its service to the nation and the world, and for its unexcelled achievement in the area of air safety. Also representing Lockheed at the festivities was Ed Harrison, the company's regional sales manager for Australia.

Air Commodore S.S.N. "Tex" Watson, Officer Commanding at the RAAF Richmond facility, praised the role of the aircraft and the outstanding performance by the aircrew of Number 36 and Number 37 Squadrons, ably supported by the maintenance effort of the Number 486 Squadron: "The C-130Hercules is a valued aircraft in our RAAF inventory. It providesa capability and mobility to the Australian Defence Force which would bedifficult to achieve without this fine aircraft. We look forward to many more years of association with the Lockheed C-130."

Australia was the first nation after the U.S. to put the Lockheed C-130 into service. It was on November 6, 1958, at the Lockheed-Georgia production facility in Marietta that Australia took delivery of the first of its 12 C-l30As. Over the past 25 years, the RAAF has flown a total of 36 C-130s – I2 C-l30As (now retired), I2 C-130Es, and I2 of the current-model C-l30Hs. Their Hercules fleet has accumulated nearly 331,000 accident-free flight hours and flown over 96 million nautical miles, the equivalent of more than three times the distance to the planet Mars.

One particularly impressive event held during Australia's 25th year with the Hercules was a flyby in which all 24 aircraft presently in the active inventory were scheduled to fly over Sydney in formation. When the day came, however, only 23 actually took part. One airplane was called away at the last moment to search for an overturned yacht and its crew of four. Fittingly, both the flyby and the rescue mission were resounding successes. While most of the fleet was putting the RAAF's airlift power on display over Australia's largest city, the sole C-130 that missed the show directed surface craft to the stricken vessel in time for its entire crew to be saved.

All of us at Lockheed extend our warmest congratulations to the RAAF on the occasion of its twenty-fifth anniversary with the Hercules aircraft. Australia has established a truly outstanding record of C-130 operations – one in which we can all take pride. We are confident that our good friends from down under will continue to set new standards of achievement and safety with this remarkable airlifter in the years ahead.

Three generations of RAAF C-130s – A-model (foreground), E-model, and H-model -pass in review,

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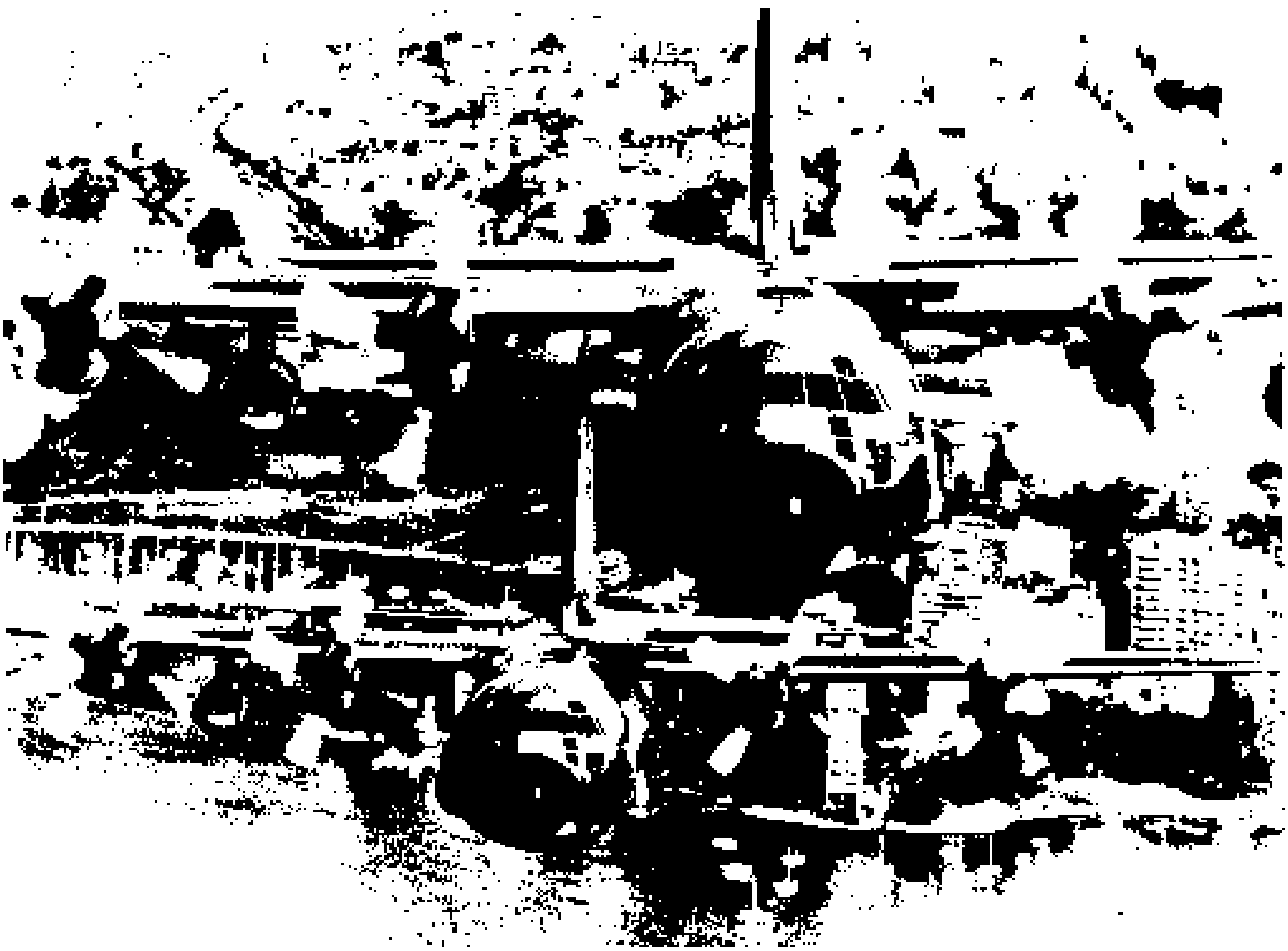

Lockheed-Georgia Company

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