

INSTALLATION MANUAL

for

GEAR ALERT SYSTEM

P/N 2037

SPECIFICATION M-1

REV. F

07-14-03



Approved

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I. INTRODUCTION

This manual provides information for installing the P/N 2037 Gear Alert Warning System on a general aviation aircraft. All installation work is to be performed in accordance with this manual and applicable sections of AC 43.13-1B.

II. BASIC OPERATION

The Gear Alert System is an electronic device which provides the pilot of the aircraft with an easily recognizable audible voice warning if he attempts to make a landing without extending his landing gear. The system consists of three subassemblies, a ground sensing transducer module which attaches to the belly of the aircraft, an electronic module which is mounted inside the aircraft, and a test switch and light which mounts on the instrument panel. The unit is interconnected to the existing landing gear position indicating light system and the existing gear warning horn. The system also connects to the existing stall warning system and provides a voice message whenever the existing stall horn sounds. The system functions as follows: The transducer assembly is mounted to the bottom of the aircraft. When the aircraft is flying, the transducer emits a microwave signal which the system uses to sense the presence of the ground. If the electronics determine that the aircraft is 100 to 150 feet above the ground (more or less), and the landing gear down light is not illuminated, an audible voice message will be heard in the pilots headset and through the built in speaker. Depending on the aircraft model, the system may also produce the voice warning when the throttle is retarded, and the wheels are up, similar to the function of the existing throttle activated warning system. Anytime the existing stall horn sounds, the pilot will also hear a stall warning voice message directly in his headset.

The system also incorporates a pushbutton switch which allows the pilot to test the electronics at any time. Momentarily pushing the switch initiates a self test sequence and activates a voice message if the system is O.K. Holding the switch steady for approximately three sec. disengages the ground sensing transducer. The amber light in the switch will then flash indicating that the ground sensing feature of the system is disengaged. Momentarily pushing the switch again reactivates the ground sensor and turns the flashing light off.

WARNING: THE GEAR ALERT IS AN ADVISORY SYSTEM ONLY. THE PILOT SHOULD NOT UTILIZE IT TO PROVIDE PRIMARY GEAR POSITION INDICATION, BUT SHOULD CONTINUE TO UTILIZE THE NORMAL OPERATING PROCEDURES, CHECKLISTS, LIGHTS, ETC. AS DEFINED IN THE AIRCRAFT OPERATING PROCEDURES AS THE PRIMARY INDICATION OF LANDING GEAR POSITION.

III. APPLICABILITY

The following is a listing of aircraft approved for installation of the Gear Alert system:

1. Aerostar

a. Aerostar, 600, 601, 601P, 602P, 700P (PiperPA-60-600, PA-60-601, PA-60-601P, PA-60-602P, PA-60-700P)

2. Beechcraft

a. Beech Bonanza 35-33, 35-A33, 35-B33, 35-C33, 35-C33A, E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC, 35, A35, B35, C35, D35, E35, F35, G35, 35R.

b. Beech Baron E55, B95A, 56TC, 58, 58P, D95A, 58TC, E95, 95-55, 95-A55, 95-B55, 95-B55A, 95-B55B, 95-C55, 95-C55A, D55, D55A, E55A, A56TC, 58A, 95, B95, 58PA, 58TCA.

c. Beech Twin Bonanza 50, B50, C50, D50, D50A, D50B, D50C, D50E, D50E-5990, E50, F50, G50, H50, J50.

d. Beech King Air 65-90, 65-A90, B90, C90, C90A, E90, F90, H90, 100, A100, A100A, A100C, B100, 200, 200C, 200CT, A200, A200C, B200, B200C, B200CT, B200T, 200T, A200CT, 99, 99A, A99, A99A, B99, C99.

3. Cessna

a. Cessna 210 - 210, 210A, 210B, 210C, 210D, 210E, 210F, T210F, 210G, T210G, 210H, T210H, 210J, T210J, 210K, T210K, 210L, T210L, 210M, T210M, 210N, P210N, T210N, P210R, T210R.

b. Cardinal - 177RG

c. Cessna 182 - R182, TR182.

d. Cessna 400 - 401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425.

e. Cessna Skymaster - 337, 337A, 337B, M337B, T337B, 337C, T337C, 337D, T337D, 337E, T337E, 337F, T337F, 337G, T337G, 337H, P337H, T337H, T337H-SP.

f. Cessna 310 - 310, 310A, 310B, 310C, 310D, 310E, 310F, 310G, 310H, E310H, 310I, 310J, 310J-1, 310K, 310L, 310N, 310P, T310P, 310Q, T310Q, 310R, T310R.

4. Mooney

a. M-20, M-20A, M-20B, M-20C, M-20D, M-20E, M-20F, M-20G, M-20J, M-20K, M-20L, M-20M, M-20R, M-20S.

5. Piper

a. PA-23 Series - PA-23, PA-23-160, PA-23-235, PA-23-250.

b. PA-24 Series - PA-24, PA-24-180, PA-24-250, PA-24-260, PA-24-400.

c. PA-31 Series - PA-31, PA-31-300, PA-31-325, PA-31-350, PA-31T, PA-31T1, PA-31-T2, PA-31-T3, PA-31P, PA-31P-350.

d. PA-34 Series - PA-34-200, PA-34-200T, PA-34-220T.

e. PA-44 Series - PA-44-180, PA-44-180T.

f. PA-30 Series - PA-30, PA-39, PA-40.

g. PA-32 Series - PA-32R-300, PA-32RT-300T, PA-32R-301T, PA-32RT-300, PA-32R-301.

h. PA-28 Series - PA-28R-180, PA-28R-200, PA-28R-201, PA-28R-201T, PA-28-RT-201, PA-28RT-201T.

6. Commander Aircraft

a. 112, 112B, 112TC, 112TCA, 114A, 114B, 114TC

IV. INSTALLATION INFORMATION

The P/N 2037 Gear Alert System has been approved for installation in a variety of aircraft. Although the same components are used in all of these installations, the wiring in these aircraft require the use of different cable assemblies and installation schematics. Supplemental installation procedures have been prepared for each of the different aircraft types to provide detailed information on the installation requirements for each aircraft. These supplemental procedures provide information considered to be part of this STC. The following is a table of the installation requirements:

<u>Aircraft</u>	<u>Cable Assembly</u>	<u>Schematic</u>	<u>Supplemental Procedure</u>
1. Aerostar	2037-1 Item 10	Fig 5A	M-3
2. Beech Bonanza	See Supplemental Procedure		BB-2
3. Beech Baron	See Supplemental Procedure		BB-1
4. Beech Twin Bonanza	2037-1 Item 12	Fig 5C	TB-1
5. Beech King Air	See Supplemental Procedure		KA-1
6. Cessna 210	2037-1 Item 11	Fig 5B	C210
7. Cessna 177RG	2037-1 Item 12	Fig 5C	C177
8. Cessna 182	2037-1 Item 12	Fig 5C	C182
9. Cessna 400 Series	2037-1 Item 12	Fig 5C	C414
10. Cessna 337	2037-1 Item 10	Fig 5A	M 1 6
11. Cessna 310	See Supplemental Procedure		C310
12. Mooney	2037-1 Item 10	Fig 5A	MA-1
13. Piper PA-23	2037-1 Item 12	Fig 5C	PA23
14. Piper PA-24	See Supplemental Procedure		PA-24
15. Piper PA-28	2037-1 Item 10	Fig 5A	M-5
16. Piper PA-30/39	2037-1 Item 12	Fig 5C	M-2
17. Piper PA-31	2037-1 Item 10	Fig 5A	PA31

18. Piper PA-32	2037-1 Item 10	Fig 5A	PA32
19. Piper PA-34	2037-1 Item 10	Fig 5A	PA34
20. Piper PA-44	2037-1 Item 10	Fig 5A	M-4
21 Commander Aircraft	2037-1 Item 12	Fig 5C	2037CA-1

V. CABLE ASSEMBLY MODIFICATION

All cable assemblies shipped with the P/N 2037 Gear Alert System are P/N 2037-1, Item 10 assemblies. If the aircraft installation requires a different cable assembly, it can be made by modifying the Item 10 cable assembly into any of the other assemblies as follows:

1. The four cable assemblies (Item 10, Item 11, Item 12, Item 13) can be made from the Item 10 cable by adding jumpers between Pins 2, 3, and 4 in the cable connector with the following information.
2. Remove the grey plastic cover from the end of the cable assembly. Locate Pin 1 on the connector (the red wire). The next pin in line, Pin 2, will be empty, followed by Pin 3 with a black wire soldered in it and Pin 4 which will be empty. Jumpers will be added as follows.
3. If the installation requires an Item 11 cable assembly, solder a jumper from Pin 2 to Pin 3.
4. If the installation requires an Item 12 cable assembly, solder a jumper from Pin 4 to Pin 3.
5. If the installation requires an Item 13 cable assembly, solder a jumper from Pin 2 to Pin 3 and a jumper from Pin 3 to Pin 4.
6. Inspect the modification to insure there are no solder shorts between the Pins and that the connections are good.
7. Reassemble the plastic cover on the end of the cable.

VI. TRANSDUCER INSTALLATION

The transducer is attached to the outer surface of the belly section of the aircraft with the bottom surface parallel to the ground. Select a location in the area close to the trailing edge of the wing. The transducer must be mounted to a metal structure. Do not drill mounting holes through stringers or other structural members. Do not mount within 12 inches of other transmitting antennas or closer than 12 inches to any devices which may cause large magnetic fields (motors, pumps, etc.) The sloping surface (cable end) of the transducer must mount forward. Verify that there is a least 1.5 inches clearance space above the aircraft skin in the location selected for cable access. On pressurized aircraft, mount outside the pressure boundary. Do not mount to a pressure boundary surface.

1. Refer to Fig 1 and 2 for information on mounting the transducer.
2. Use the P/N 2037-9 doubler provided as a template, drill the four mounting holes, and the clearance hole for the cable in the aircraft skin. Verify that there is sufficient bolt clearance so that the transducer can float on its rubber mount.
3. Place the doubler inside the aircraft skin. Attach the transducer and the doubler to the aircraft using the #8-32 self-locking AN hardware, washers, and rubber vibration mounts provided. Refer to Fig 2 for installation information. Do not over tighten the mounting nuts, as the transducer is shock mounted.
4. The installer is responsible for any added structural modifications outside those that are specified by this STC.

VII. ELECTRONIC MODULE INSTALLATION

1. Refer to Fig 1 and 3 for installation formation. The electronic module should mount to a rigid structure in the cabin. The best position would be in front of the pilot as the box has a built in speaker.
2. Use the information provided on Fig 5 to drill the mounting holes. Mount the electronic module using the #8 AN mounting hardware, washers and self-locking nuts provided. Refer to Fig 3 for installation information.

VIII. TEST SWITCH AND INDICATION LIGHT INSTALLATION

1. Select a spot on the instrument panel for installing the test switch with indicator light. The preferred location is in front of the pilot and close to the existing gear down light or gear activating switch.
2. Verify that there is clearance behind the location chosen for the components and wiring.

3. Refer to Fig 4 for installation information. Install the switch using the retaining nut provided. Install the panel label provided under the switch. Fig 4 also show an alternate arrangement for installations with a false panel face.

IX. ELECTRICAL HOOKUP

A. Gear Warning Section

The Gear Alert System can operate in both 12V or 24V aircraft systems. Select the proper wiring schematic for the installation as defined in Section IV, Installation Information, and the supplemental document for the aircraft.

1. The Gear Alert system should be installed on its own separate circuit breaker or fuse. The system does not contain an on/off switch. This prevents accidental shut off by the pilot.
2. Install an electrical lead from the DC power bus to the circuit breaker and then to the red wire in the cable. Power wiring and installation must meet the requirements of AC 43.13 - 1B Chapter 11.
3. Install a system ground wire and attach it to a good aircraft ground point. Ground wires and bonding must meet the requirements of AC 43.13 - 1B Chapter 11.
4. Wire the test switch with indicator light as shown on the schematic. The color codes on the pre-wired switch match the colors of the main cable assembly.
5. A 600 ohm audio output is provided (white wire Pin 13). The audio output must be hooked in to the aircraft audio system in a way that the pilot cannot accidentally turn the audio off. If the aircraft has an audio panel that has an un-switched audio input, the Gear Alert audio output can be hooked to this point. This will provide a voice warning directly into the pilots headset and through the cabin speaker.
6. If the aircraft does not have an audio panel with an un-switched input, the white wire should be wired directly to the pilots headset jack.
7. The system interconnects to the gear down indicating light. Refer to the schematics in the supplemental document for your aircraft and the installation figure for the correct location to attach the brown wire to the existing aircraft wiring.
8. The system interconnects to the existing throttle activated gear warning system. Refer to the schematic in the Supplemental Document for your aircraft and the installation figure for the correct location to connect the blue wire to the existing aircraft wiring.
10. In a very small number of installations false triggering of the Gear Alert can occur due to interference from the aircraft transmitters. An optional muting circuit has been incorporated to prevent this.

This circuit mutes the signal from the transducer and prevents the voice from sounding whenever the microphone is keyed. Once the key is released, the system returns to normal operation. The muting (if installed) affects the ground sensing transducer only, it does not prevent the throttle switch warning from activating. Hook up this option only if flight testing indicates it is needed. The mute option is activated by hooking a wire from Pin 10 of the connector to the key terminal of the aircraft microphone jack (normally the tip connection). Check the voltage at the point where the wire is to be attached. This point must read aircraft voltage, and when the push-to-talk switch is activated, the voltage must go to zero (ground).

11. Route the shielded cable to the transducer module. Cut to length, secure the cable in place, and verify that it does not interfere with moving parts, linkages, etc. Attach the connector to the end of the cable as shown on the schematic.

12. Attach the cable to the transducer module. Secure the connector to prevent loosening.

13. Attach the grey DB-15 connector to the electronic module and secure it with its mounting screws.

B. Hookup of Stall Warning Interface

1. Locate the stall horn in the aircraft. Using a meter, measure the voltage on both sides of the stall horn when the horn is both sounding and silent. The voltage on one of the connections at the stall horn will change between aircraft voltage and ground as the horn activates. This is the point where the VIOLET wire will connect. Refer to appropriate installation drawing, Fig A, B, C, or D. The actual aircraft stall system may be wired so that the wing mounted switch provides a ground to activate it, or it may be wired so that the stall switch applies power to the horn. The stall voice installation is the same for both aircraft wiring configurations.

2. On aircraft that use an electronic dual warning unit, hook the VIOLET wire to the stall warning terminal on the electronic dual warning unit.

3. Bundle and secure all wiring in accordance with AC 43.13 - 1B.

4. Check the aircraft current load with the Gear Alert installed (an additional 300ma) to verify that the new current load is within limits.

5. This completes the installation.

X. SYSTEM CHECKOUT AND OPERATION

A. Initial Power up

1. Apply power to the system. With the gear down, there should be no activation of the unit. If the gear is up, push the throttle in slightly to prevent throttle switch activation.

2. Check the test function as follows: If the wheels are down it will be necessary to wait 15 sec. after power up for the microprocessor to start. Then push the test switch momentarily and release it. The voice warning "TEST O.K." should be heard over the built in speaker, the aircraft speaker if used, and the headset simultaneously. The electronic module can be tested at any time in flight or on the ground by pushing the test switch. If the wheels are up it will be necessary to wait 45 sec. after power is applied before the system is active.

NOTE: The test switch tests the electronic module only. A complete functional test of the system can only be performed by flight testing.

3. If the landing gear is up, pull the throttle back to idle. Depending on the aircraft model, the voice message "CHECK LANDING GEAR" should be heard in the headset, the built in speaker and the cabin speaker, if used.

B. GROUND TEST

1. Apply power to the system. Verify that the voice does not activate and that the panel light does not come on.

2. Manually activate the wing mounted stall switch. When the existing stall warning horn sounds, the voice warning should also be heard through the built in speaker and through the pilots headset.

2. Start the aircraft engine(s). Push the test switch momentarily and release it. The test voice should be heard through the headset, the built in speaker, and the cabin speaker if used. It should activate one cycle then stop.

3. Push the test switch and hold it for about 2 sec. and release it. The amber light in the switch should now flash, indicating that the system has gone into the disengage mode and the ground sensing transducer is disengaged. Push the test switch again. The light should stop flashing indicating that the ground sensor has re-engaged.

4. Perform a test to verify there is no interaction between the Gear Alert or any other electrical device in the aircraft. Individually turn on each electrical item in the aircraft and verify that the Gear Alert does not affect the operation of the device, and that the device does not cause triggering of the Gear Alert. Use the checklist attached to this procedure as a guide for this test.

5. Taxi the aircraft, verify that the Gear Alert and the stall warning do not activate while taxiing.

C. FLIGHT TEST

1. Make a normal takeoff, retract the gear in the normal manner, and climb to an altitude greater than 200 feet within 45 sec. The Gear Alert should not activate if the climb is accomplished within the prescribed time.

2. Wait the necessary 45 sec. and push the test switch. The test voice should be heard. Verify that the volume is adequate to be heard over other aircraft sounds. The headset voice volume can be adjusted by turning a volume control accessible through the front cover of the electronic module. This control adjusts the volume of all the voice messages heard through the headset, but does not effect the volume of the built in speaker.

3. With the aircraft at a safe altitude, retard the throttle. Depending on the specific aircraft model, the landing gear voice warning should be heard. Open the throttle and push the test switch and hold it for 2 sec. to place the system in the disengage mode. Verify that the amber light is flashing. Retard the throttle and verify that the voice warning activates as previously, even though the ground sensing function is disengaged. Push the test switch to re-engage the ground sensing function.

4. Slow fly the aircraft with the landing gear retracted. Retard the throttle until the gear warning voice is heard. Perform an approach to a stall causing the existing stall horn to sound. When the stall horn sounds, the voice warning "STALL, STALL" should be heard in the pilots headset and through the built in speaker. When the existing stall horn stops sounding, you should hear the voice message change back to the gear warning message.

5. Make a low pass over the runway with the wheels retracted. Make this pass as close to a normal approach as possible in approach speed, (105 mph max.) and decent rate. When flying over a paved runway, the gear warning voice is normally heard at an altitude of about 100 feet above the ground. As the aircraft climbs to an altitude above 200 feet, the warning should stop. If you are unable to activate the system using this test, fly the aircraft at an altitude of 300 feet. As you cross over the approach end of the runway, start a decent down to 100 feet at a rate of 500 feet per minute. The warning voice should be heard.

6. Make a low pass over the runway with the gear extended. The voice warning should not sound.

7. During the flight test, operate every electrical device in the aircraft and verify that the Gear Alert does not adversely affect the operation of the device, and that the device does not cause triggering of the Gear Alert. Use the checklist attached to this procedure as a guide for this test.

8. A simulated ILS approach should be flown to verify no interaction between the Gear Alert and any navigational equipment prior to using the aircraft in actual instrument conditions.

IX. DOCUMENTATION

1. The installer is responsible for making all log book entries, revising weight and balance, and other documentation as required.

2. Place the aircraft flight manual supplement (AFMS) and ICA in the aircraft.

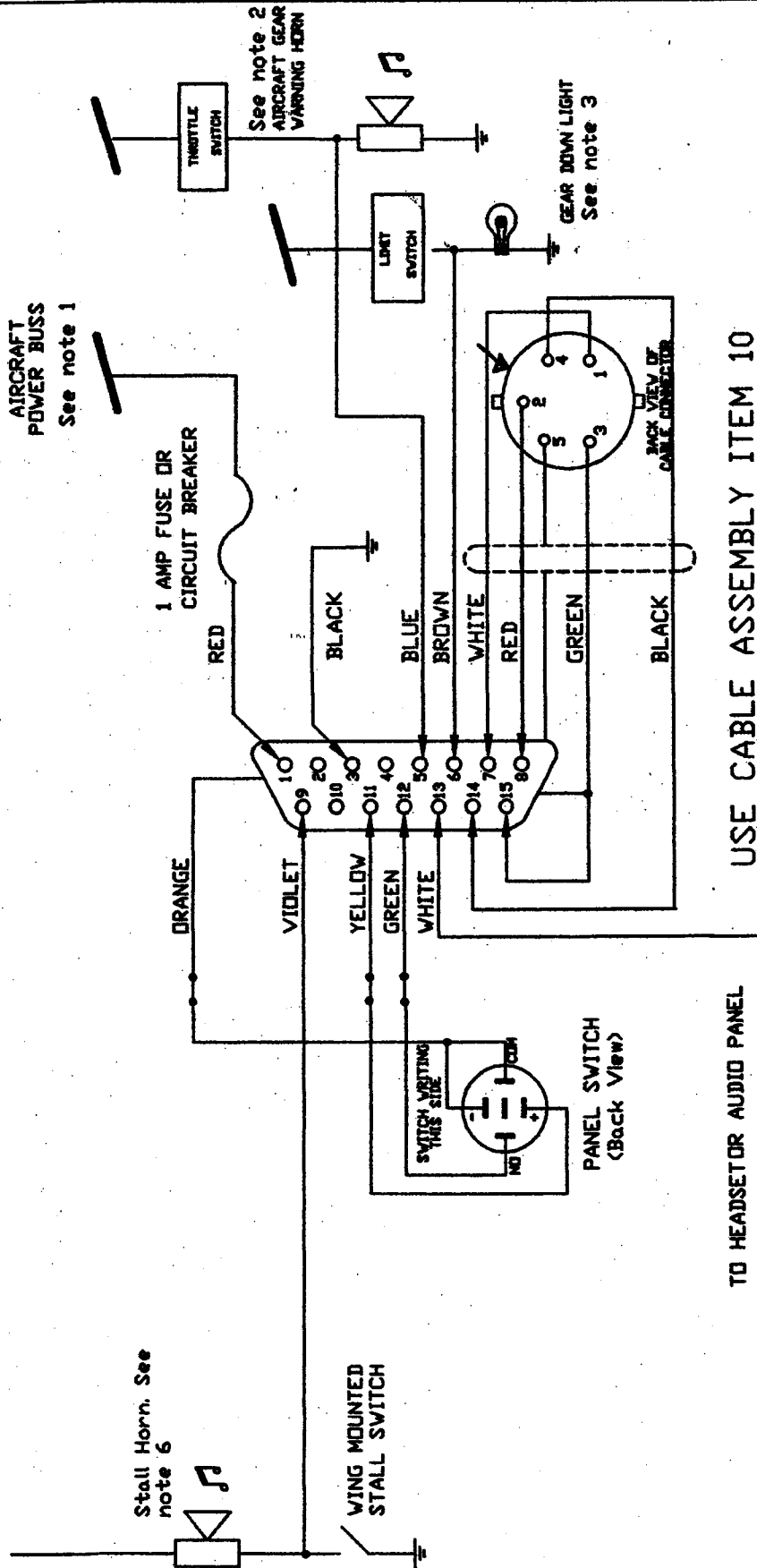
X. MATERIALS

The following materials are included in the P/N 2037-1 Gear Alert assembly. Check all parts before beginning the installation.

1. (1) transducer assembly P/N 2037-3
2. (1) electronic module assembly P/N 2037-2
3. (1) installation kit and cable assembly P/N 2037-13
4. (1) aircraft flight manual supplement
5. (1) Installation Manual
6. (1) Instructions for Continued Airworthiness
7. (1) STC

Component Parts:
 1. Electronic Module Assembly P/N 2037-1-2
 2. Transducer Assembly P/N 2037-1-3
 3. Cable Assembly 2037-1-10

REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	1	REVISED FOR HOOKUP TO STALL HORN	07-14-03



USE CABLE ASSEMBLY ITEM 10

TO HEADSET OR AUDIO PANEL

Notes:

1. Wiring to meet the requirements of AC 43.13-1B
2. Attach BLUE wire to switch side of warning horn
3. Attach BROWN wire to switch side of gear down light
4. The orange & green wires and shield are soldered to the shell
5. No Jumpers Pins 2, 4
6. See Installation Manual for details on hookup to aircraft stall horn.

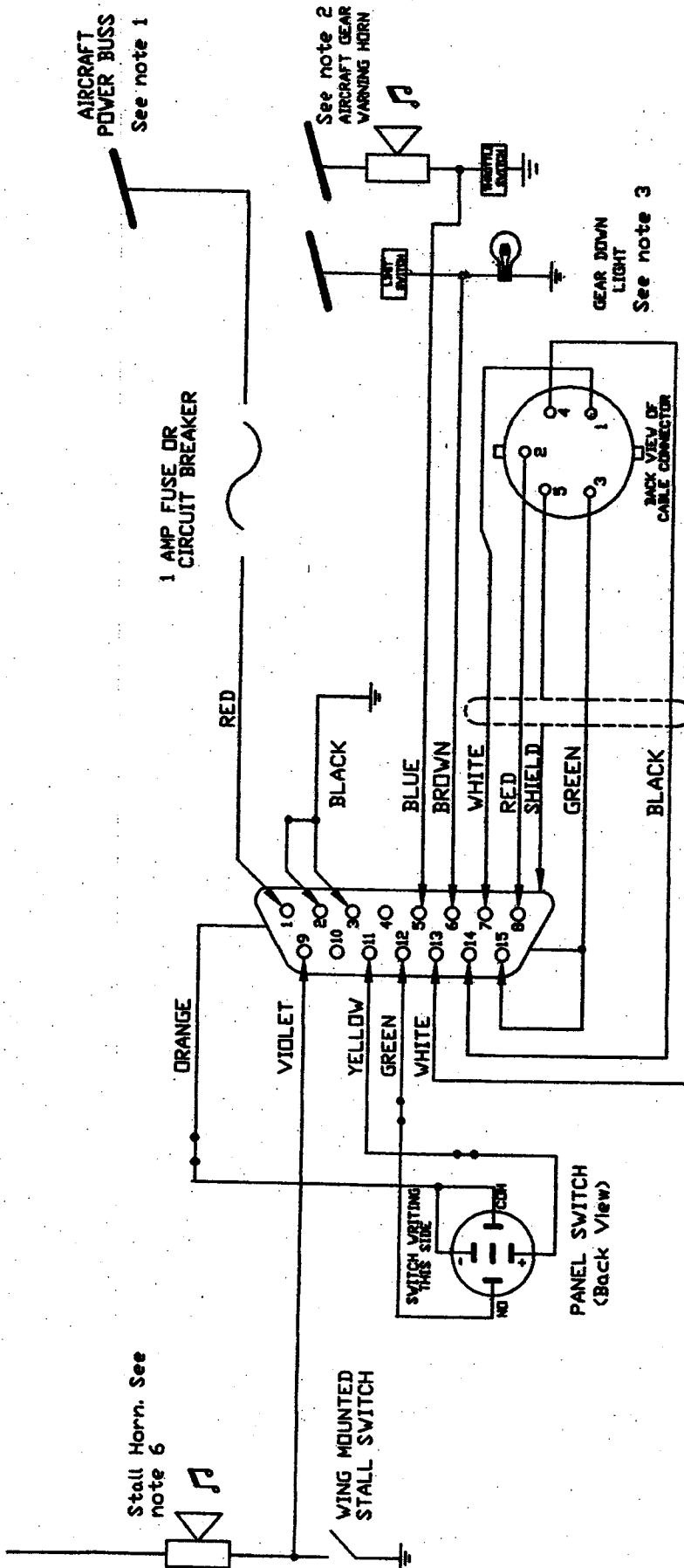
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Landing Gear Warning System
 Wiring Diagram

APPROVED	SIZE A	FSC# NO.	DWG NO.	REV 1
DATE 11-20-00	SCALE NONE	DRAWN BY J.D.G.	SHEET 1 OF 1	

- Component Parts:
1. Electronic Module Assembly P/N 2037-1-2
 2. Transducer Assembly P/N 2037-1-3
 3. Cable Assembly P/N 2037-1-11

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED FOR HOOKUP OF STALL HORN	07-14-03	



USE CABLE ASSEMBLY ITEM 11

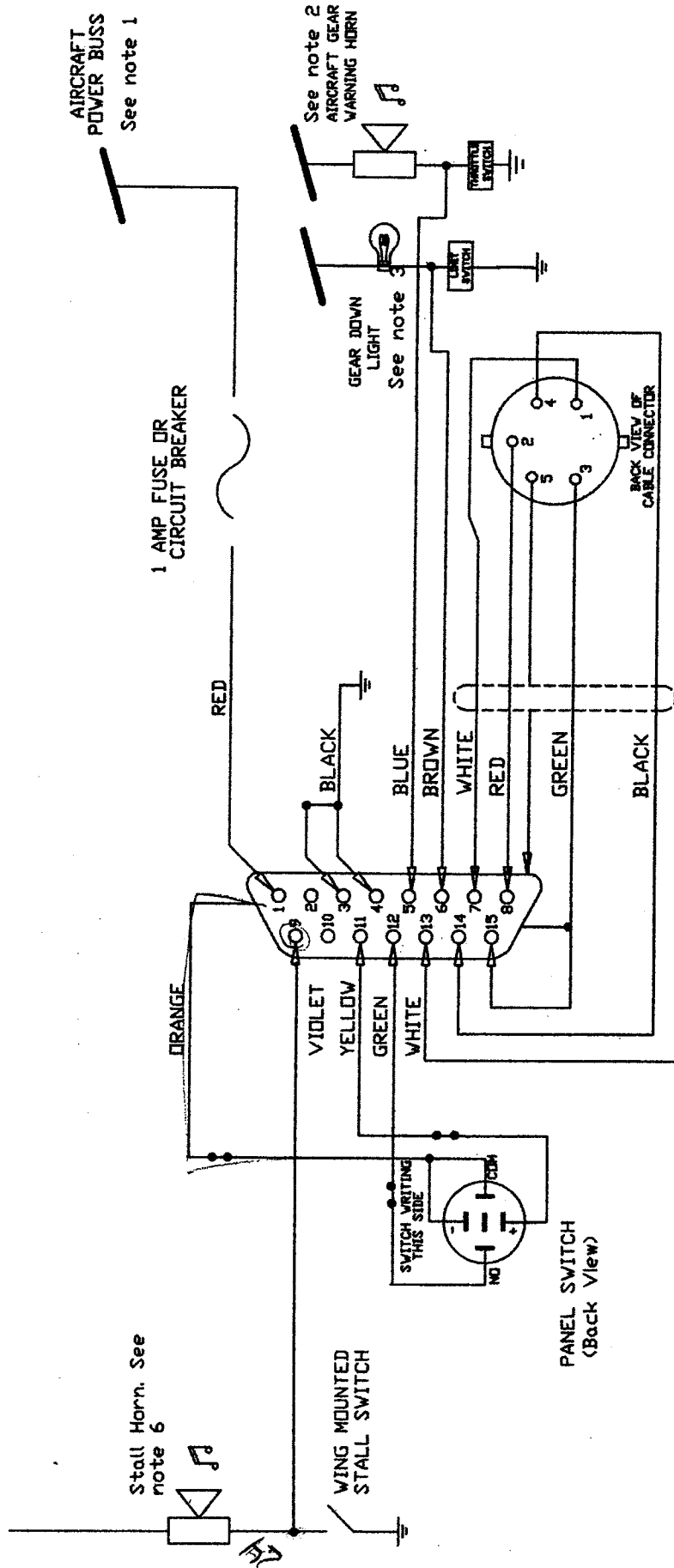
- Notes:
1. Wiring to meet the requirements of AC 43.13-1B
 2. Attach the BLUE wire to the switch side of the warning horn.
 3. Attach the BROWN wire to the switch side of the gear down light.
 4. The orange & green wires and shield are soldered to the shell.
 5. Add Jumper from pin 2 to pin 3.
 6. See installation manual for details on hookup to aircraft stall horn.

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Landing Gear Warning System Wiring Diagram	
APPROVED	DATE 11-20-00
SIZE A	SCALE NONE
FSC#	DWG NO. FIG 5B
REV 1	SHEET 1 OF 1
DRAWN BY J.D.G.	

- Component Parts:
 1. Electronic Module Assembly P/N 2037-1-2
 2. Transducer Assembly P/N 2037-1-3
 3. Cable Assembly P/N 2037-1-12

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED FOR HOOKUP TO STALL HORN	07-14-03	



TO HEADSET
OR AUDIO PANEL

USE CABLE ASSEMBLY ITEM 12

- Notes:
 1. Wiring to meet the requirements of AC 43.13-1B
 2. Attach the BLUE wire to the switch side if the warning horn
 3. Attach the BROWN wire to the switch side of the gear down light.
 4. Orange & green wires and shield are soldered to the shell.
 5. Add jumper from pin 3 to pin 4.
 6. See installation manual for details on hookup to the aircraft stall horn.

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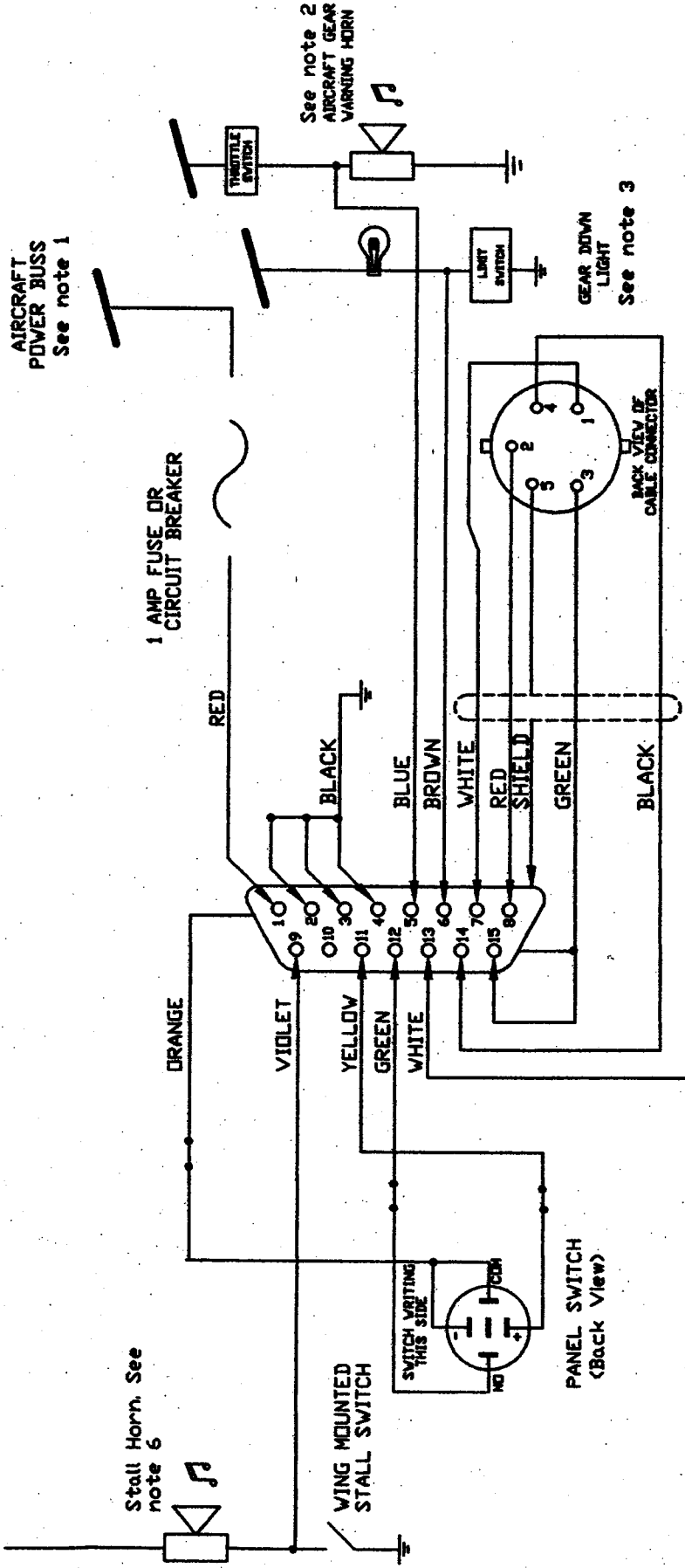
Landing Gear Warning System
Wiring Diagram

APPROVED	SIZE A	FSCM NO.	DWG NO.	REV 1
DATE 11-20-00	SCALE NONE	DRAWN BY J.D.G.		SHEET 1 OF 1

Component Parts:
 1. Electronic Module Assembly P/N 2037-1-2
 2. Transducer Assembly P/N 2037-1-3
 3. Cable Assembly P/N 2037-1-13

REVISIONS

ZONE	REV	DESCRIPTION	DATE	APPROVED
	1	REVISED FOR HOOKUP TO STALL HORN	07-14-03	



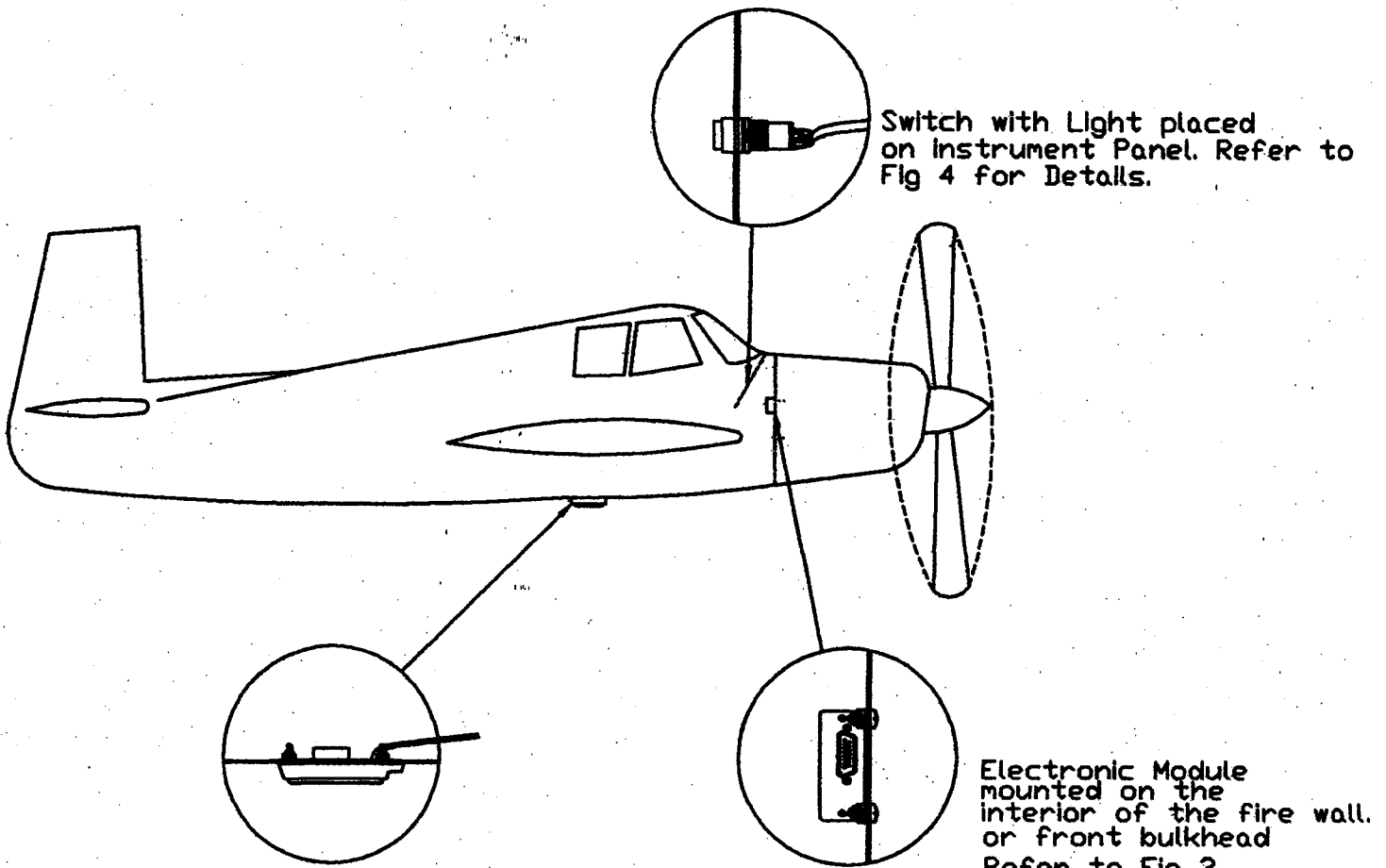
- TO HEADSET OR AUDIO PANEL
1. Wiring to meet the requirements of AC 43.13-1B
 2. Attach the BLUE wire to the switch side of the warning horn.
 3. Attach the BROWN wire to the switch side of the gear down light.
 4. The orange & green wires and shield are soldered to the shell.
 5. Add jumpers from pin 2 to pin 3, and pin 3 to pin 4.
 6. See installation manual for details on hookup to the stall horn.

CABLE ASSEMBLY P/N 2037-1 ITEM 13

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Landing Gear Warning System
 Wiring Diagram

APPROVED	SIZE A	FSC# NO.	DWG NO.	REV 1
DATE 11-20-00	SCALE NONE	DRAWN BY J.D.G.	SHEET 1 OF 1	



Transducer Mounted on the Belly. Refer to Fig 2 for Details.

For single engine aircraft, mount at trailing edge of wing or behind. Cable end to face forward

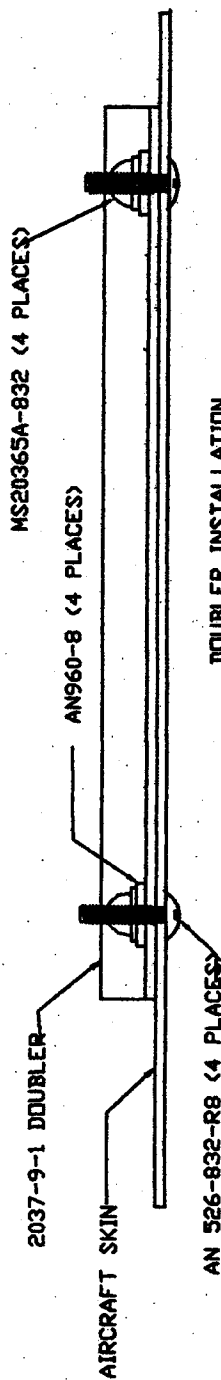
For twin engine aircraft, mount at any location on the belly that meets other requirements

INSTALLATION DRAWING

FIG 1

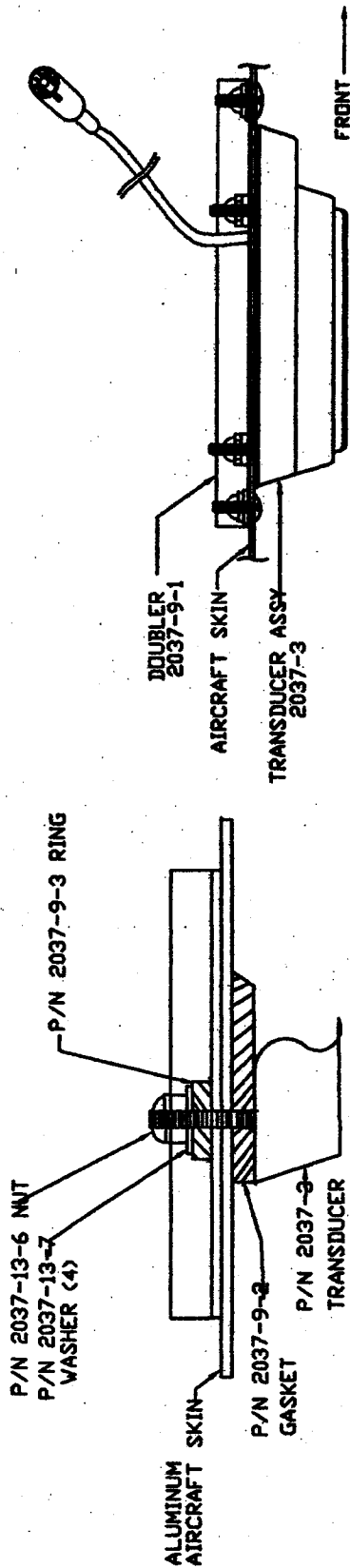
Rev. 1

Date 8-30-00



DOUBLER INSTALLATION

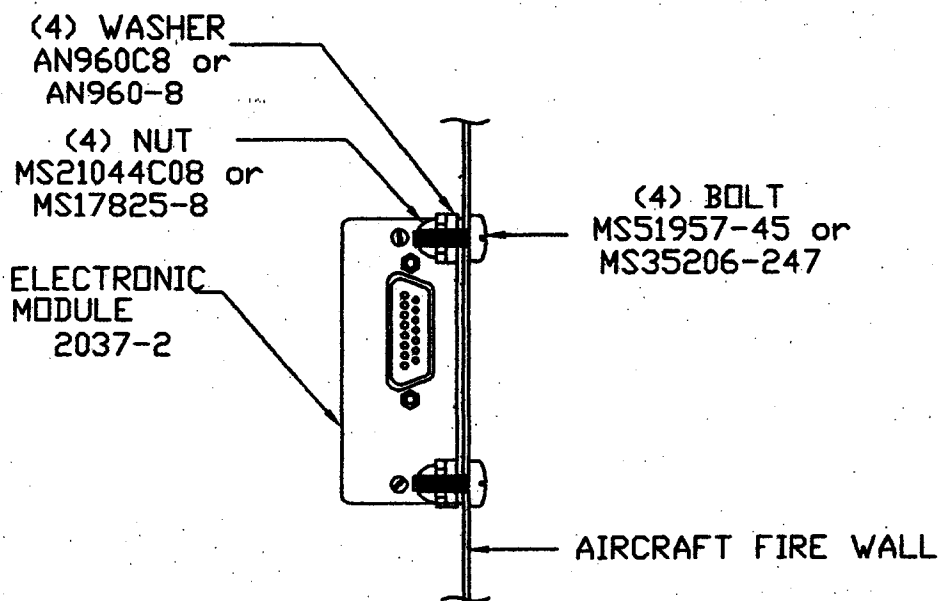
1. WHEN INSTALLING DOUBLER, MAINTAIN A MINIMUM OF 1/2 INCH DISTANCE FROM ANY STRUCTURAL MEMBER OR SKIN JOINT
2. DRILL HOLES USING DOUBLER AS TEMPLATE
3. INSTALL HARDWARE AS SHOWN 4 PLACES



TRANSDUCER INSTALLATION

- Transducer to be vibration isolated on rubber mounts
1. Transducer to fit freely in mounting holes and not bind
 2. Assemble parts as shown, tighten nuts sufficient to bring parts in contact, then tighten an additional 2 turns (1/16 rubber compression)
 3. Do not over tighten, transducer must float

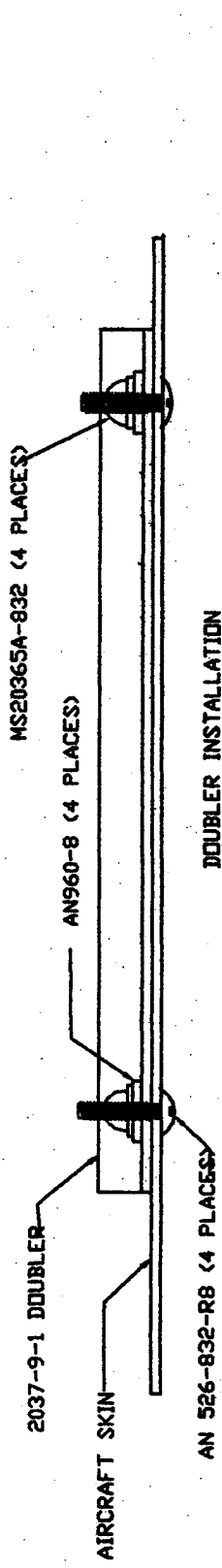
**TRANSDUCER INSTALLATION
FIG 2**



ELECTRONIC MODULE INSTALLATION FIG 3

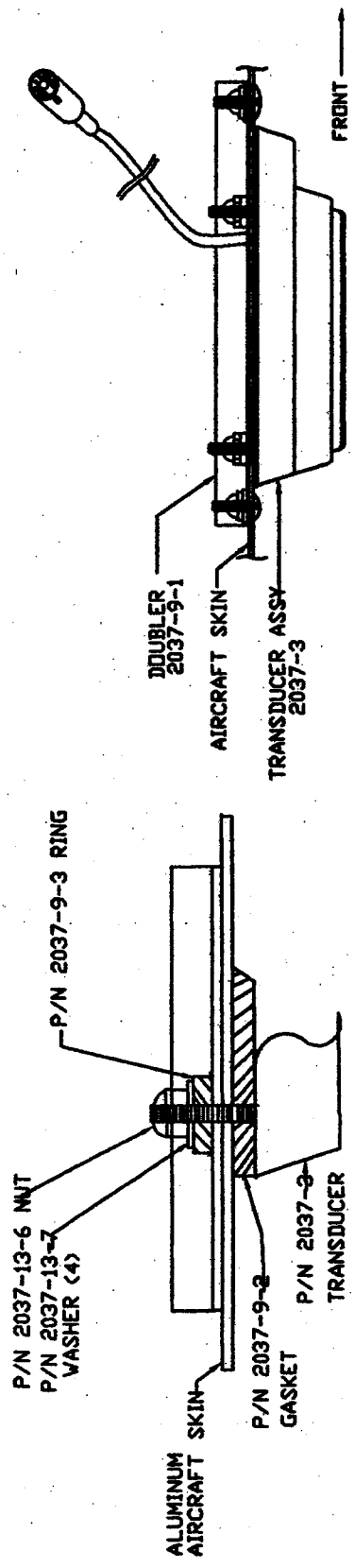
Rev. 1

Date 8-30-00



DOUBLER INSTALLATION

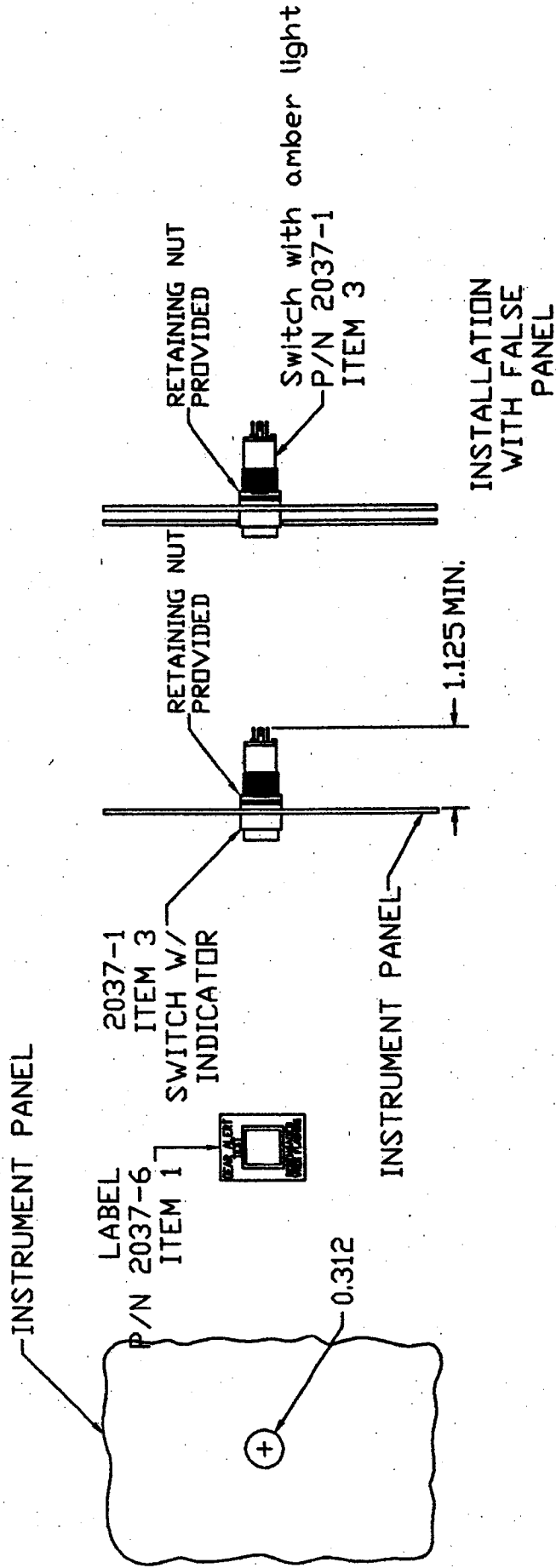
1. WHEN INSTALLING DOUBLER, MAINTAIN A MINIMUM OF 1/2 INCH DISTANCE FROM ANY STRUCTURAL MEMBER OR SKIN JOINT
2. DRILL HOLES USING DOUBLER AS TEMPLATE
3. INSTALL HARDWARE AS SHOWN 4 PLACES



TRANSDUCER INSTALLATION

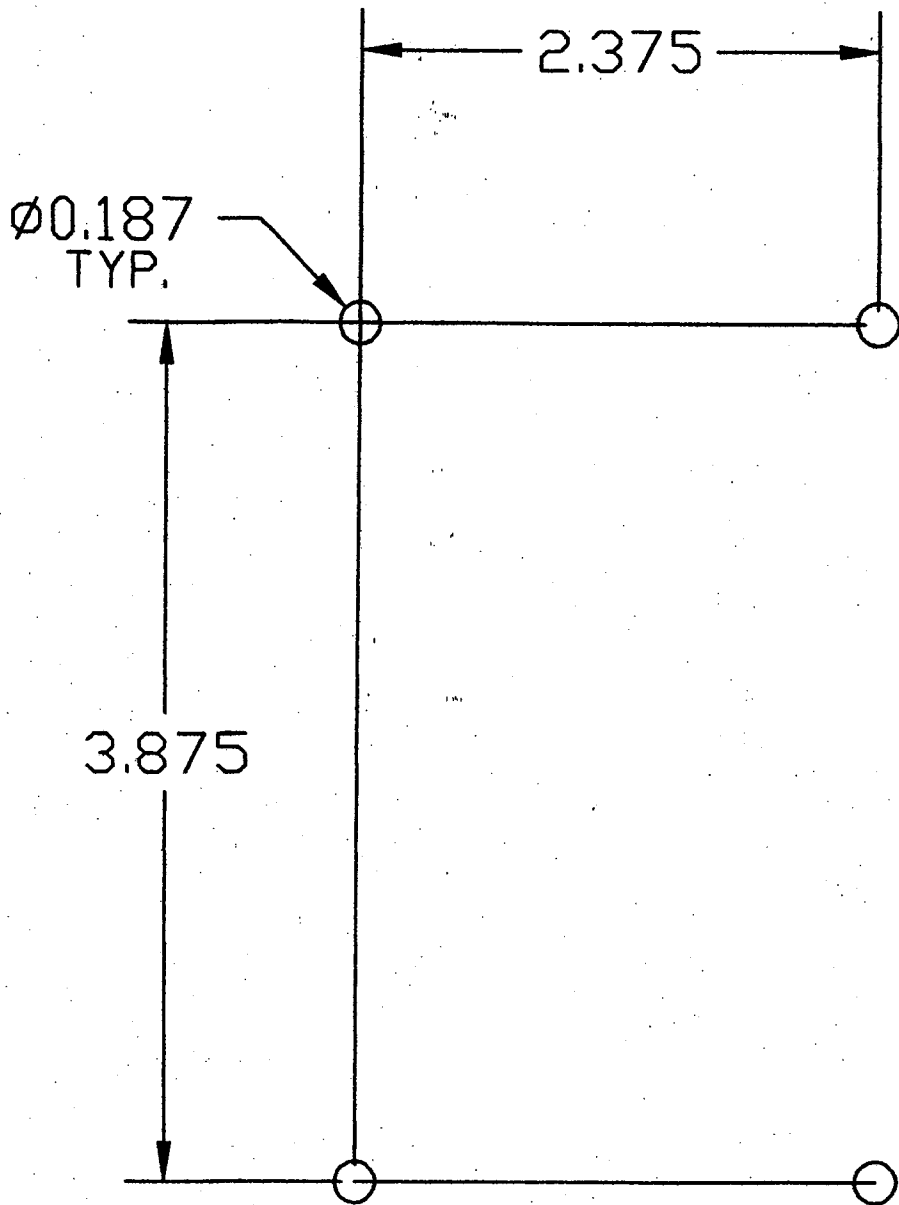
- Transducer to be vibration isolated on rubber mounts
1. Transducer to fit freely in mounting holes and not bind
 2. Assemble parts as shown, tighten nuts sufficient to bring parts in contact, then tighten an additional 2 turns (1/16 rubber compression)
 3. Do not over tighten, transducer must float

**TRANSDUCER INSTALLATION
FIG 2**



INSTALLATION OF SWITCH WITH AMBER LIGHT

FIGURE 4



ELECTRONIC MODULE TEMPLATE

FIG 5

Rev. No. 1
Date 8-30-00

Interference Checklist

The following is a checklist to be used when checking function and interference between the Gear Alert system and other electrical equipment installed in the aircraft. This is a suggested listing only. Testing should include all electrical equipment actually installed in the aircraft.

I. Interference Tests

ITEM	GROUND TEST	FLIGHT TEST
1. Master Switch		
2. Avionics Master Switch		
3. Electronic Aircraft Instrumentation		
4. Audio System		
5. Boost Pump		
6. Flaps		
7. Landing Gear Actuators		
8. Trim Motors		
9. Accessory Motors		
10. Communication Radios		
11. GPS		
12. VOR receivers		
13. ADF receiver		
14. DME		
15. Transponder		
16. Marker beacon receiver		
17. TCAS system		
18. Strobe lights		
19. Rotating Beacon		
20. Electric Clocks		
21. Navigation lights		