523-0759341-002111
2nd Edition, 15 May 1978

Rockwell International

instruction book

Collins 980N-1 Altimeter Test Set

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Cedar Rapids, Iowa 52406

Printed in the United States of America

section 1
general description

1.1 PURPOSE OF INSTRUCTION BOOK

This instruction book provides information necessary to install, operate, and maintain the 980N-1 Altimeter Test Set.

1.2 PURPOSE OF EQUIPMENT

The 980N-1 Altimeter Test Set (figure 1-1, CPN 522-4610-001) is used primarily to isolate faults in the AL-101 or AL-101A Radio Altimeter System and to perform routine flight-line maintenance tests on the system, while it is installed in the aircraft. It also has limited capabilities for operationally bench-testing the 860F-1 Radio Altimeter and 339H-1( ) Radio Altitude Indicator.

The 980N-1 Altimeter Test Set (figure 1-1, CPN 522-4610-001 with SB 4, and CPN 522-4610-003), in addition to the above, provides a varying altitude rate signal to the radio altimeter system necessary to test the Ground Proximity Warning System (GPWS), and provides automatic descent rates for autoland tests.

1.3 EQUIPMENT COVERED

Table 1-1 lists the equipment covered by this instruction book.

1.4 EQUIPMENT REQUIRED BUT NOT SUPPLIED

The 980N-1 requires no additional special equipment for testing the AL-101 or AL-101A systems. However, a locally fabricated test adapter is recommended to perform test procedures on the 980N-1. (See table 7-1, and figures 7-21 through 7-23 for details.)

1.5 EQUIPMENT SPECIFICATIONS

Table 1-2 lists the specifications for the 980N-1 Altimeter Test Set.

1.6 PHYSICAL DESCRIPTION

1.6.1 Mechanical Description

The 980N-1 Altimeter Test Set (figure 1-2) is a portable, unpressurized unit enclosed in a 2-piece, drawn-aluminum case. The top cover is hinged and detachable. Operating controls and indicators are mounted on the front panel, which is attached to the bottom section by six screws. A cable assembly, terminated in a mating connector, provides connections to the 980N-1 from the 860F-1 front panel connector, J9. Provisions for mounting the 339H-1( ) indicator on the front panel include the mating connector and

Table 1-1. Equipment Covered.

EQUIPMENT	DESCRIPTION	COLLINS PART NUMBER
980N-1 Altimeter Test Set	AL-101 or AL-101A Radio Altimeter System Test Set.	522-4610-001 (Serno 351 and below)
980N-1 Altimeter Test Set	Functionally equivalent as CPN 522-4610-001 (serno 351 and below) and includes COM/ARM switch.	522-4610-001 (Serno 352 and above)
980N-1 Altimeter Test Set	Functionally equivalent as CPN 522-4610-001 (serno 352 and above) and includes COM/ARM switch and varying altitude rate signal generator.	522-4610-003

Table 1-2. Equipment Specifications (Cont).

CHARACTERISTICS	SPECIFICATIONS
Sensitivity (for full-scale deflection)	High: ±1.2 V dc Medium: ±6 V dc Low: ±30 V dc
Trip accuracy	±2% of output voltage, or ±2 ft, whichever is greater
Vswr measurement	
Accuracy	±10%
Duty cycle	CPN 522-4610-001: Continuous up to 1-hr maximum (limitation due to increased power requirements on 860F-1 power supply) CPN 522-4610-003: Continuous up to 30-min maximum (limitation due to increased power requirements on 860F-1 power supply)
Strapping options	CPN 522-4610-001 (serno 351 and below): Either +27 V dc or ground connected to A/P warn arm or trip common terminals CPN 522-4610-001 (serno 352 and above) and CPN 522-4610-003: Provide COM/ARM switch for selecting +27 V dc or ground for A/P WARN and TRIP lamps
Operating position	Upright and reasonably level

section 2
installation

2.1 UNPACKING AND EQUIPMENT INSPECTION

Remove all packing material, and carefully remove the 980N-1 Altimeter Test Set from shipping carton. Carefully inspect for possible shipping damage. If damage exists, return unit to shipping carton along with all packing material and file damage claim with transportation agency. If no damage exists, retain carton for equipment storage purposes.

2.2 CONNECTIONS

For flight-line maintenance or bench performance testing, connect the 980N-1 cable assembly to the 860F-1 front panel connector.

For 339H-1( ) testing, connect the unit to the 860F-1 front panel connector, remove the indicator recess cover, mate the connector attached to the recess cover with the 339H-1( ) rear connector, place the 339H-1( ) into the recess, and secure the unit to the 980N-1 front panel as shown in figure 4-1.

The 339H-2 does not fit in the 980N-1; therefore, all indicator readings must be taken on the installed indicators in the cockpit.

In multisystem installations, it is important that only the system under test be energized for certain tests.

section 3
operation

3.1 GENERAL

The 980N-1 provides a simulated altitude signal to the 860F-1 by means of a voltage-controlled oscillator with a frequency range from 600 Hz to 130 kHz. A null detector (meter) and followup potentiometer are used to measure the 860F-1 precision output voltages. A rate generator assembly (SB 4, and CPN 522-4610-003) provides one of eight manually selected initial altitudes (500, 800, 1100, 1400, 1700, 2000, 2300, and 2600 ft), and one of eight manually selected descent or slew rates (500, 1000, 2000, 3000, 4000, 5000, 6000, and 7000 ft/min) used for checking the slewing action of the GPWS and the 860F-1. Indicator lamps provide a visual check of the 860F-1 altitude trips, autopilot warn contacts, flag voltage, and 339H-1( ) flag and MDA trip operation. In addition, the 980N-1 includes a grounding switch for self-testing the AL-101 system, plus a means of checking the vswr of both the receive and transmit antenna cables. A built-in, self-test feature checks the operation of the 980N-1. The 980N-1 receives all operating power from the 860F-1.

In most AL-101 Radio Altimeter System installations, the 339H-1( ) Radio Altitude Indicator and 860F-1 Radio Altimeter are remotely located. For this reason, provisions are included for mounting the 339H-1( ) on the 980N-1 front panel as shown in figure 4-1. This eliminates the need for frequent trips between the aircraft radio rack and the cockpit control panel. It also provides a convenient means of isolating a malfunction to either the 339H-1( ) or the associated wiring. For example, if the 339H-1( ) indications do not agree with those on the 980N-1, the malfunction is known to be in the 339H-1( ); if the 339H-1( ) operates properly in the 980N-1 but does not when installed in the aircraft control panel, the malfunction is known

Table 3-1. Postinstallation Testing and Troubleshooting Procedures Using the 980N-1 Altimeter Test Set

	Notes
(1) To zero meter:	Always begin with METER SENS switch in LOW position. To measure the 860F-1 altitude output voltage, adjust the ALTITUDE control to the desired input frequency (or the desired operating point as in step 10), then adjust the ALTITUDE STANDARD to zero the meter (pointer on midscale mark) with the METER SENS switch first in LOW, then MED (for increased accuracy), then HIGH (for best accuracy). To test the system at some specific input frequency, adjust the ALTITUDE STANDARD to the desired altitude as indicated by the digital readout, then adjust the ALTITUDE control to zero the meter with the METER SENS first in LOW, then MED, and finally in HIGH position.
(2) TRIP lamp operation:	When the TRIP lamp is lit, this indicates that the trip contacts corresponding to the ALTITUDE TRIP SELECT switch position are closed. If A5CR67 has been removed from the 860F-1, the TRIP lamp will not operate in AL-101 SELF TEST regardless of the ALTITUDE TRIP SELECT switch position. Refer to the applicable section in the AL-101 or AL-101A Radio Altimeter Maintenance Manual for additional information. The COM/ARM switch (S11) on the 980N-1 (CPN 522-4610-001, serno 352 and above, and CPN 522-4610-003) must be set to the proper position (+27 or GND) for TRIP lamp operation.
(3) MDA lamp operation:	When the MDA lamp is lit, this indicates that a closed circuit exists between the 339H-1( ) MDA or the 339H-2 DH trip output terminals. An internal ground is provided in 980N-1 SELF TEST to light the lamp. For all other tests except VSWR, the MDA lamp indication is dependent on the 339H-1( ) MDA or 339H-2 DH index position with respect to the pointer or reference. (The MDA lamp is not energized in VSWR test.)
(4) A/P WARN and A/P NO WARN lamp operation:	The A/P WARN and A/P NO WARN lamps are never lit simultaneously except in 980N-1 SELF TEST. Otherwise, the A/P NO WARN lamp is lit (and the A/P WARN lamp is out) for all simulated altitudes below 2500 feet. Above 2500 feet and in AL-101 or AL-101A self-test, both lamp conditions are reversed. A reversed condition below 2500 feet indicates a warn condition in the 860F-1. The COM/ARM switch (S11) on the 980N-1 (CPN 522-4610-001, serno 352 and above, and CPN 522-4610-003) must be set to the proper position (+27 or GND) for A/P WARN and A/P NO WARN lamp operation.
(5) Self-test altitudes:	The altitude indication obtained in AL-101 SELF TEST is dependent on the type of 860F-1 used in the system. Refer to figure 4A, in the AL-101 Radio Altimeter System Maintenance Manual (or figure 4 in the AL-101A Radio Altimeter System Maintenance Manual) for specific information.
(6) 339H-2 indicators:	Reference to 339H-1( ) indicators also includes 339H-2, unless noted otherwise.
(7) 980N-1 test set operation:	a. 980N-1 test set (CPN 522-4610-001, serno 352 and above, and CPN 522-4610-003) contains a COM/ARM switch that connects the TRIP and A/P WARN lamps to ground or +27 V dc, depending on the altimeter system under test. This switch must be set to the proper position for TRIP, A/P WARN, and A/P NO WARN lamp operation, and to GND for 980N-1 SELF TEST operation. b. 980N-1 test set (CPN 522-4610-001 with SB 4 and CPN 522-4610-003) contains MODE, ALTITUDE, ALTITUDE 100 FEET, and RATE 1000 FT/MIN switches for altitude slew operation. The MODE switch must be set to the MAN position for manual test set operation.

Table 3-1. Postinstallation Testing and Troubleshooting Procedures Using the 980N-1 Altimeter Test Set (Cont)

STEP	TEST TITLE, REMARKS, AND SPECIAL INSTRUCTIONS	APPLICABLE 980N-1 SWITCH OR OPERATING CONTROL POSITIONS	APPLICABLE 980N-1 INDICATIONS	APPLICABLE 339H-1( ) INDICATIONS	MOST PROBABLE CAUSE OF ABNORMAL INDICATION
6	Auxiliary altitude output test at 480 feet.	TEST SELECT: AUX/IND ALTITUDE; COM/ARM: GND or +27 (Refer to note (7)a.) MODE: MAN (Refer to note (7)b.) AID/ALT SELECT: 480FT( ); ALTITUDE STANDARD: zero meter; and refer to note (1).	Digital readout: 0470 to 0490 FLAG lamp: lit; MDA lamp: refer to note (3).	Flag out of view; MDA lamp (if used): refer to note (3); Pointer: 480 feet.	860F-1 or 339H-1( ) as applicable
7	Auxiliary altitude output test at selected altitudes.	TEST SELECT: AUX/IND ALTITUDE; COM/ARM: GND or +27 (Refer to note (7)a.) MODE: MAN (Refer to note (7)b.) AID/ALT SELECT: VARIABLE; ALTITUDE STANDARD: 600 ALTITUDE control: zero meter, and refer to note (1). For 339H-2: ALTITUDE control: Adjust ccw until 001; MDA lamp on, DH lamp on. Others, audio tone. 006; Adjust cw then ccw. ALTITUDE STANDARD: zero meter.	For 339H-2: Digital readout; 001; 0291 to 0309. Others, 0346 to 0354 005; 485 to 515 006; 400 ft, DH on, off readout: 010 to 015.	339H-2 DH CONT: Index on 300 ft. All indicate same altitude as digital readouts. Flag out of view. MDA lamp; refer to note (3).	860F-1 or 339H-1( ) or 339H-2 as applicable.
8	Autopilot altitude output test at 480 feet.	TEST SELECT: A/P ALTITUDE AND TRIPS; COM/ARM: GND or +27 (Refer to note (7)a.) MODE: MAN (Refer to note (7)b.) AID/ALT SELECT: 480FT( ); ALTITUDE STANDARD: zero meter, and refer to note (1).	Digital readout: 0470 to 0490 FLAG lamp: lit; A/P NO WARN lamp: lit; MDA lamp: refer to note (3).	Flag out of view; MDA lamp (if used): refer to note (3); Pointer: 480 feet.	860F-1 if step 6 result was correct, 339H-1( ) if pointer indication and digital readout do not agree

Table 3-1. Postinstallation Testing and Troubleshooting Procedures Using the 980N-1 Altimeter Test Set (Cont)

STEP	TEST TITLE, REMARKS, AND SPECIAL INSTRUCTIONS	APPLICABLE 980N-1 SWITCH OR OPERATING CONTROL POSITIONS	APPLICABLE 980N-1 INDICATIONS	APPLICABLE 339H-1( ) INDICATIONS	MOST PROBABLE CAUSE OF ABNORMAL INDICATION
10.	Altitude trip operating point check.	ALTITUDE TRIP SELECT: 1; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 1 operating point.	Pointer: indicates same altitude as digital readout on 980N-1.	860F-1 or 339H-1( ) as applicable
		ALTITUDE TRIP SELECT: 2; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 2 operating point.		
		ALTITUDE TRIP SELECT: 5; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 5 operating point.		
		ALTITUDE TRIP SELECT: 6; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 6 operating point.		
		ALTITUDE TRIP SELECT: 7; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 7 operating point.		
		ALTITUDE TRIP SELECT: 8; ALTITUDE (control): adjust; ALTITUDE STANDARD: adjust to zero meter.	Digital readout: indicates trip no. 8 operating point.		

Table 3-1. Postinstallation Testing and Troubleshooting Procedures Using the 980N-1 Altimeter Test Set (Cont)

STEP	TEST TITLE, REMARKS, AND SPECIAL INSTRUCTIONS	APPLICABLE 980N-1 SWITCH OR OPERATING CONTROL POSITIONS	APPLICABLE 980N-1 INDICATIONS	APPLICABLE 339H-1( ) INDICATIONS	MOST PROBABLE CAUSE OF ABNORMAL INDICATION
11A	VSWR test - meter calibration.	TEST SELECT: VSWR; RCVR-SET-XMTR: SET; SET ∞ : adjust for ∞ indication on vswr scale.	Meter (pointer): ∞	Not applicable	Not applicable
11B	VSWR test - receive antenna cable.	TEST SELECT: VSWR; RCVR-SET-XMTR: RCVR (hold).	Refer to introduction, step 11.		
	Flex cable slightly.		Meter (pointer): indication should not change.		
11C	VSWR test - transmit antenna cable.	TEST SELECT: VSWR; RCVR-SET-XMTR: XMTR (hold).	Refer to introduction, step 11.		
	Flex cable slightly.		Meter (pointer): indication should not change.		
11D	Rf leakage of 860F-1. (Make accurate vswr measurement before leakage measurement.) Replace one antenna with a load (Narda 757-20 Attenuator or equivalent).	TEST SELECT: VSWR; RCVR-SET-XMTR: XMTR (hold). NORMAL/LEAKAGE: LEAKAGE.	A vswr indication of 1.7 or greater indicates excessive leakage.		

section 4
principles of operation

4.1 FUNCTIONAL DESCRIPTION OF 980N-1 OPERATING CONTROLS AND INDICATORS

4.1.1 General

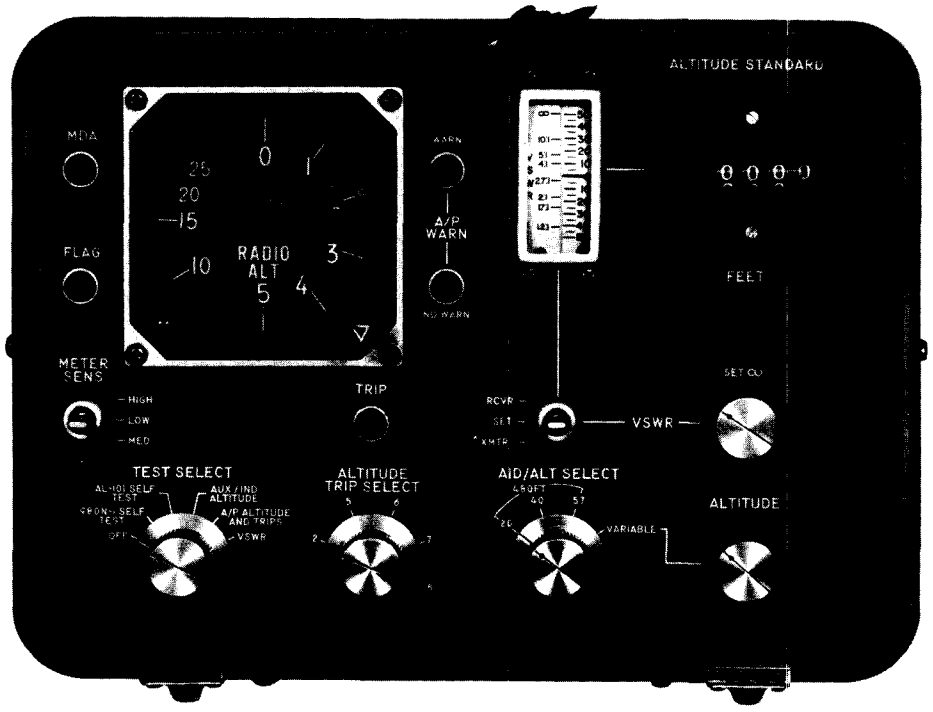
This paragraph contains a functional description of each operating control and test indicator used on the 980N-1. (Refer to figures 4-1 through 4-3*.) This information, together with the block diagrams (figures 7-5 through 7-30), provides the operator with sufficient knowledge of the principles of 980N-1 operation to form a logical conclusion as to the most probable cause of an abnormal indication obtained during AL-101 system or 980N-1 testing/troubleshooting. The block diagrams show all switch terminal connections for each TEST SELECT switch position.

4.1.2 ALTITUDE STANDARD Device

The ALTITUDE STANDARD is a digital readout device with an associated precision potentiometer. The +30-volt dc output from the 860F-1 is applied across this potentiometer. The voltage at the wiper is applied directly to one side of the meter circuit. The altitude output voltage from the 860F-1 (either auxiliary or autopilot, depending on the TEST SELECT switch position) is applied to the other side of the meter circuit through the METER SENS switch. Any unbalance in the two voltages causes the meter to deflect from the 0 position. When the ALTITUDE STANDARD is adjusted so that the meter indicates 0 (or midscale), the digital readout indicates the altitude (in feet) corresponding to the altitude output voltage.

4.1.3 Meter

The meter used in the 980N-1 contains a single pointer movement with two scales. One scale is used in adjusting the ALTITUDE STANDARD as described in paragraph 4.1.2. The other scale is used to measure the vswr on the antenna cables. The movement is very sensitive and for that reason is protected by diodes against high currents.



980N-1 (CPN 522-4610-001, Serno 351 and Below) Operating Controls and Indicators
Figure 4-1

(*) Figure 4-1 also shows the 339H-1( ) indicator installed in the 980N-1 front panel.

4.1.4 METER SENS Switch

The METER SENS switch connects different values of resistance in series with the meter movement. The largest value of resistance is connected when the switch is in the LOW position, with lesser amounts in the MED and HIGH positions.

4.1.5 AID/ALT SELECT Switch

The AID/ALT SELECT switch functions only when the TEST SELECT switch is in either the AUX/IND ALTITUDE or A/P ALTITUDE AND TRIPS position, and the MODE switch (SB 4 and CPN 522-4610-003) is set to the MAN position. With the AID/ALT SELECT switch in the 480FT range (either 20, 40, or 57), a precision frequency is generated by a crystal-controlled oscillator. This frequency represents an altitude of 480 feet. With the AID/ALT SELECT switch in the VARIABLE position, the vco (voltage-controlled oscillator) generates the altitude frequency and is adjusted by the ALTITUDE control. (Refer to paragraph 4.1.7 for additional information on the vco.)

4.1.6 ALTITUDE Control

The ALTITUDE control is a potentiometer that varies the voltage applied to the vco. The internally generated +30 volts dc is the reference source for the ALTITUDE control.

4.1.7 Frequency Generators

The 980N-1 contains two frequency generators, a crystal-controlled oscillator, and a voltage-controlled oscillator, used to provide the altitude signal to the system under test.

The crystal-controlled oscillator generates one of three frequencies depending on the AID/ALT SELECT switch position (19.885 kHz, 20.285 kHz, or 20.625 kHz). These frequencies represent 480 feet in altitude for 20-, 40-, or 57-foot AID values, respectively. The output from the crystal-controlled oscillator is applied to the 860F-1 only when the AID/ALT SELECT switch is in the 480FT range, and the MODE switch (SB 4 and CPN 522-4610-003) is set to the MAN position.

The voltage-controlled oscillator generates frequencies from 600 Hz (approximately -20 feet) to 130 kHz (approximately 3000 feet). The frequency is controlled by the ALTITUDE control and is applied to the 860F-1 when the AID/ALT SELECT switch is in the VARIABLE position, and the MODE switch (SB 4 and CPN 522-4610-003) is set to the MAN position.

4.1.8 TRIP SELECT Switch and TRIP Lamp

4.1.8.1 980N-1 CPN 522-4610-001, Serno 351 and Below

The TRIP lamp and amplifier circuit is energized by the +30 V dc internally generated from the 26-V ac input. The voltage is applied only when the TEST SELECT switch is in the 980N-1 SELF TEST, AL-101 SELF TEST, or A/P ALTITUDE AND TRIPS position, and the MODE switch (SB 4) is set to the MAN position. The amplifier circuit is essentially an on-off switch for the lamp and is used to isolate the trip relay contacts from the lamp current. The specific trip to be tested is selected by the ALTITUDE TRIP SELECT switch. When the 860F-1 trip relay contacts (associated with the trip being tested) close, the trip amplifier circuit enables the trip lamp switching transistor, causing the lamp to light. Special strapping is required and depends on whether the trip common terminal is at ground or +27 V dc. If A5CR67 has been removed from the 860F-1 being tested, the TRIP lamp will not operate in AL-101 SELF TEST for any ALTITUDE TRIP SELECT switch position.

The TRIP lamp is always lit when the TEST SELECT switch is in the 980N-1 SELF TEST position, regardless of the position of the ALTITUDE TRIP SELECT switch.

4.1.8.2 980N-1 CPN 522-4610-001, Serno 352 and Above, and CPN 522-4610-003

The TRIP lamp is energized by the +30 V dc internally generated from the 26-V ac input. The voltage is applied only when the TEST SELECT switch is in the 980N-1 SELF TEST, AL-101 SELF TEST, or A/P ALTITUDE AND TRIPS position, and the MODE switch (SB 4, and CPN 522-4610-003) is set to the MAN position. The specific trip to be tested is selected by the ALTITUDE TRIP SELECT switch. When the 860F-1 trip relay contacts (associated with the trip being tested) close, the lamp lights. The COM/ARM switch selects GND or +27, depending on whether the trip common terminal is at ground or +27 V dc. If A5CR67 has been removed from the 860F-1 being tested, the TRIP lamp will not operate in AL-101 SELF TEST or any ALTITUDE TRIP SELECT switch position.

The TRIP lamp is always lit when the TEST SELECT switch is in the 980N-1 SELF TEST position,

virtually any type of failure or warn condition in the 860F-1.

4.1.12 SET ∞ Control and RCVR-SET-XMTR Switch

With the TEST SELECT switch in the VSWR position and the RCVR-SET-XMTR switch in the normal-released (SET) position, the SET ∞ control is used to calibrate the meter in preparation for a vswr test. In addition, with the TEST SELECT switch in the VSWR position, the AL-101 system is in self-test, since a ground is applied to self-test terminals J9-j and P1B-24. To individually test the vswr on the transmit and receive antenna cables, the bias current through circulators Z1 and Z2 is controlled as follows:

a. With the RCVR-SET-XMTR switch held in the XMTR position, +27 volts dc is applied to the normally negative side of the transmit circulator Z1, thus blocking current flow through the circulator bias coil. Bias current, however, is maintained through receive circulator Z2. In this condition, the transmitted signal is applied directly to the transmit antenna cable as in normal (other than self-test) operation. A signal (vswr) is reflected back through the transmit circulator, self-test delay line, receive circulator, and into the receiver circuits. The tracking filter output resulting from this signal is used in the 980N-1 as the transmit vswr test signal. If the vswr is correct, a meter indication of 1.7 should be obtained.

b. With the RCVR-SET-XMTR switch in the RCVR position, the +27-volt dc blocking voltage is removed and the receive circulator bias coil is shorted. In this condition, the transmitted signal is coupled from the transmitter output directly into the self-test delay line, bypassing the transmit antenna as is normal for self-test. From the delay line, the signal is coupled through the receive circulator to the receive antenna (no bias current in this circulator). The signal from the receive antenna cable (vswr) is then reflected back through the receive circulator and into the receiver circuits.

The introduction to the vswr tests, step 11 on table 3-1, adequately describes the results that should be obtained, as well as outlining the probable cause of an abnormal result. The vswr tuning stubs in the 860F-1 are factory adjusted to provide a vswr of 1.7:1. Any deviation from this value, in either direction, reflects degradation. The signal resulting from this vswr is used in the 860F-1 vswr monitor circuit. Any vswr less than 1.4 results in a signal too low in amplitude to permit satisfactory monitoring. (860F-1 equipment with SB 22 installed may not indicate the lower 1.4 vswr limit. Refer to 980N-1 SB 3.)

An intermittent poor vswr can occasionally be detected by flexing the cable slightly during test. Any meter movement, while the cable is being flexed, cannot be tolerated.

Cable-connector installation instructions are contained in the removal/installation section of the AL-101 Radio Altimeter Maintenance Manual.

4.1.13 NORMAL LEAKAGE Switch

This switch is added as a customer option when Service Bulletin No 1 is installed. This modification is applicable to all 980N-1 Altimeter Test Sets.

Rf leakage in the AL-101 Radio Altimeter System can be detected by measuring the voltage at test jack J21 in the 860F-1 Radio Altimeter while it is installed and operating. However, this requires removing the dust cover from the 860F-1.

This modification incorporates a leakage test function into the 980N-1 test set. Rf leakage can now be detected by connecting the 980N-1 test set to the 860F-1 front panel connector J9-C. With this modification, rf leakage can be detected without removing the 860F-1 dust cover.

4.1.14 COM/ARM Switch

The COM/ARM toggle switch (CPN 522-4610-001, ser no 352 and above, and CPN 522-4610-003) connects the TRIP and A/P WARN lamps to ground or +27 V dc, dependent on the altimeter system under test.