

SECTION 4

NORMAL PROCEDURES

COMMUNICATION RECEIVER-TRANSMITTER OPERATION:

1. COM OFF/VOL Control -- TURN ON; adjust to desired audio level.
2. XMTR SEL Switch (on audio control panel) -- SET to desired Nav/Com Radio.
3. SPEAKER/PHONE Selector Switches (on audio control panel) -- SET to desired mode.
4. 5-0 Fractional MHz Selector Switch -- SELECT desired operating frequency (does not affect navigation frequencies).
5. COM Frequency Selector Switch -- SELECT desired operating frequency.
6. SQ Control -- ROTATE counterclockwise to just eliminate background noise. Adjustment should be checked periodically to assure optimum reception.
7. Mike Button:
 - a. To Transmit -- DEPRESS and SPEAK into microphone.

NOTE

Sidetone may be selected by placing the AUTO selector switch (on audio control panel) in either the SPEAKER or PHONE position. Sidetone may be eliminated by placing the AUTO selector switch in the OFF position. Adjustment of sidetone on audio control panels supplied with three transmitters cannot be accomplished externally. However, audio control panels supplied with two or less transmitters have sidetone adjustment pots that are accessible through the front of the audio control panel with a small, screwdriver.

- b. To Receive -- RELEASE mike button.

NAVIGATION OPERATION:

NOTE

The pilot should be aware that on many Cessna airplanes equipped with the windshield mounted glide slope antenna, pilots should avoid use of 2700 ± 100 RPM on airplanes equipped with a two-bladed propeller or 1800 ± 100 RPM on airplanes equipped with a three-bladed propeller during ILS approaches to avoid oscillations of the glide slope deviation pointer caused by propeller interference.

1. COM OFF/VOL Control -- TURN ON.
2. SPEAKER/PHONE Selector Switches (on audio control panel) -- SET to desired mode.
3. NAV Frequency Selector Knobs -- SELECT desired operating frequency.
4. NAV VOL -- ADJUST to desired audio level.
5. ID-VOX-T Switch:
 - a. To Identify Station -- SET to ID to hear navigation station identifier signal.
 - b. To Filter Out Station Identifier Signal -- SET to VOX to include filter in audio circuit.
6. ARC PUSH-TO/PULL-FROM Knob (If Applicable):
 - a. To Use As Conventional OBS -- PLACE in center detent and select desired course.
 - b. To Obtain Bearing TO VOR Station -- PUSH (ARC/PUSH-TO) knob to inner (momentary on) position.

NOTE

ARC lamp will illuminate amber while the course card is moving to center with the course deviation pointer. After alignment has been achieved to reflect bearing to VOR, automatic radial centering will automatically shut down, causing the ARC lamp to go out.

- c. To Obtain Continuous Bearing FROM VOR Station -- PULL (ARC/PULL-FR) knob to outer detent.

NOTE

ARC lamp will illuminate amber, OBS course card will turn to center the course deviation pointer with a FROM flag to indicate bearing from VOR station.

7. OBS Knob (If Applicable) -- SELECT desired course.

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CESSNA 300 NAV/COM
(TYPE RT-385A)

PILOT'S OPERATING HANDBOOK
SUPPLEMENT

VOR SELF-TEST OPERATION:

1. COM OFF/VOL Control -- TURN ON.
2. NAV Frequency Selector Switches -- SELECT usable VOR station signal.
3. OBS Knob -- SET for 0° course at course index; course deviation pointer centers or deflects left or right, depending on bearing of signal; NAV/TO-FROM indicator shows TO or FROM.
4. ID/VOX/T Switch -- PRESS to T and HOLD at T; course deviation pointer centers and NAV/TO-FROM indicator shows FROM.
5. OBS Knob -- TURN to displace course approximately 10° to either side of 0° (while holding ID/VOX/T to T). Course deviation pointer deflects full scale in direction corresponding to course displacement. NAV/TO-FROM indicator shows FROM.
6. ID/VOX/T Switch -- RELEASE for normal operation.

NOTE

This test does not fulfill the requirements of FAR 91.25.

SECTION 5 PERFORMANCE

There is no change to the airplane performance when this avionic equipment is installed. However, the installation of an externally mounted antenna or several related external antennas, will result in a minor reduction in cruise performance.

SUPPLEMENT
CESSNA 300 TRANSPONDER
(Type RT-359A)
AND
OPTIONAL ALTITUDE ENCODER (BLIND)

SECTION 1
GENERAL

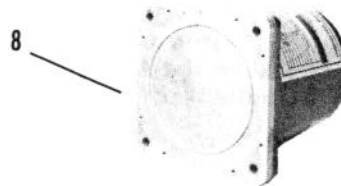
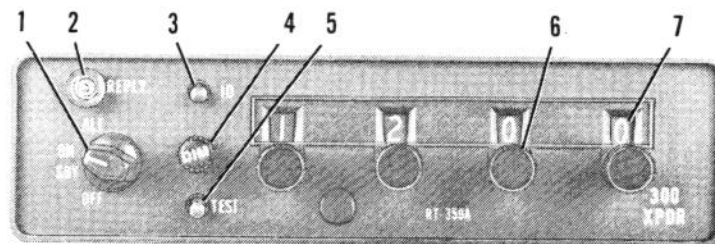
The Cessna 300 Transponder (Type RT-359A), shown in Figure 1, is the airborne component of an Air Traffic Control Radar Beacon System (ATCRBS). The transponder enables the ATC ground controller to "see" and identify the aircraft, while in flight, on the control center's radarscope more readily.

The Cessna 300 Transponder system consists of a panel-mounted unit and an externally mounted antenna. The transponder receives interrogation pulse signals on 1030 MHz and transmits pulse-train reply signals on 1090 MHz. The transponder is capable of replying to Mode A (aircraft identification) and also Mode C (altitude reporting) when coupled to an optional altitude encoder system. The transponder is capable of replying on both modes of interrogation on a selective reply basis on any of 4,096 information code selections. The optional altitude encoder system (not part of a standard 300 Transponder system) required for Mode C (altitude reporting) operation consists of a completely independent remote-mounted digitizer that is connected to the static system and supplies encoded altitude information to the transponder. When the altitude encoder system is coupled to the 300 Transponder system, altitude reporting capabilities are available in 100-foot increments between -1000 and +20,000 feet.

All Cessna 300 Transponder operating controls are located on the front panel of the unit. Functions of the operating controls are described in Figure 1.

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CESSNA 300 TRANSPONDER AND ALTITUDE ENCODER (BLIND) PILOT'S OPERATING HANDBOOK SUPPLEMENT



1. FUNCTION SWITCH - Controls application of power and selects transponder operating mode as follows:
 - OFF - Turns set off.
 - SBY - Turns set on for equipment warm-up or standby power.
 - ON - Turns set on and enables transponder to transmit Mode A (aircraft identification) reply pulses.
 - ALT - Turns set on and enables transponder to transmit either Mode A (aircraft identification) reply pulses or Mode C (altitude reporting) pulses selected automatically by the interrogating signal.
2. REPLY LAMP - Lamp flashes to indicate transmission of reply pulses; glows steadily to indicate transmission of IDENT pulse or satisfactory self-test operation. (Reply lamp will also glow steadily during initial warm-up period.)

Figure 1. Cessna 300 Transponder and Altitude Encoder (Blind)
(Sheet 1 of 2)

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PILOT'S OPERATING HANDBOOK CESSNA 300 TRANSPONDER
SUPPLEMENT AND ALTITUDE ENCODER (BLIND)

3. IDENT (ID) SWITCH - When depressed, selects special pulse identifier to be transmitted with transponder reply to effect immediate identification of aircraft on ground controller's display. (Reply lamp will glow steadily during duration of IDENT pulse transmission.)
4. DIMMER (DIM) CONTROL - Allows pilot to control brilliance of reply lamp.
5. SELF-TEST (TST) SWITCH - When depressed, causes transponder to generate a self-interrogating signal to provide a check of transponder operation. (Reply lamp will glow steadily to verify self-test operation.)
6. REPLY-CODE SELECTOR KNOBS (4) - Select assigned Mode A reply code.
7. REPLY-CODE INDICATORS (4) - Display selected Mode A reply code.
8. REMOTE-MOUNTED DIGITIZER - Provides an altitude reporting code range of -1000 feet up to the airplane's maximum service ceiling.

Figure 1. Cessna 300 Transponder and Altitude Encoder (Blind)
(Sheet 2 of 2)

SECTION 2

LIMITATIONS

There is no change to the airplane limitations when this avionic equipment is installed. However, the following information must be displayed in the form of a placard located near the altimeter.

ALTITUDE ENCODER EQUIPPED

SECTION 3

EMERGENCY PROCEDURES

TO TRANSMIT AN EMERGENCY SIGNAL:

1. Function Switch -- ON.
2. Reply-Code Selector Knobs -- SELECT 7700 operating code.

TO TRANSMIT A SIGNAL REPRESENTING LOSS OF ALL COMMUNICATIONS (WHEN IN A CONTROLLED ENVIRONMENT):

1. Function Switch -- ON.
2. Reply-Code Selector Knobs -- SELECT 7700 operating code for 1 minute; then SELECT 7600 operating code for 15 minutes and then REPEAT this procedure at same intervals for remainder of flight.

SECTION 4

NORMAL PROCEDURES

BEFORE TAKEOFF:

1. Function Switch -- SBY.

TO TRANSMIT MODE A (AIRCRAFT IDENTIFICATION) CODES IN FLIGHT:

1. Reply-Code Selector Knobs -- SELECT assigned code.

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PILOT'S OPERATING HANDBOOK CESSNA 300 TRANSPONDER
SUPPLEMENT AND ALTITUDE ENCODER (BLIND)

2. Function Switch -- ON.
3. DIM Control -- ADJUST light brilliance of reply lamp.

NOTE

During normal operation with function switch in ON position, reply lamp flashes indicating transponder replies to interrogations.

4. ID Button -- DEPRESS momentarily when instructed by ground controller to "squawk IDENT" (reply lamp will glow steadily, indicating IDENT operation).

TO TRANSMIT MODE C (ALTITUDE REPORTING) CODES IN FLIGHT:

1. Reply-Code Selector Knobs -- SELECT assigned code.
2. Function Switch -- ALT.

NOTE

When directed by ground controller to "stop altitude squawk", turn Function Switch to ON for Mode A operation only.

NOTE

Pressure altitude is transmitted by the transponder for altitude squawk and conversion to indicated altitude is done in ATC computers. Altitude squawked will only agree with indicated altitude when the local altimeter setting in use by the ground controller is set in the aircraft altimeter.

3. DIM Control -- ADJUST light brilliance of reply lamp.

TO SELF-TEST TRANSPONDER OPERATION:

1. Function Switch -- SBY and wait 30 seconds for equipment to warm-up.
2. Function Switch -- ON or ALT.
3. TST Button -- DEPRESS (reply lamp should light brightly regardless of DIM control setting).
4. TST Button -- Release for normal operation.

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CESSNA 300 TRANSPONDER PILOT'S OPERATING HANDBOOK
AND ALTITUDE ENCODER (BLIND) SUPPLEMENT

SECTION 5

PERFORMANCE

There is no change to the airplane performance when this avionic equipment is installed. However, the installation of an externally mounted antenna or several related external antennas, will result in a minor reduction in cruise performance.

SUPPLEMENT

CESSNA 400 GLIDE SLOPE **(Type R-443B)**

SECTION 1

GENERAL

The Cessna 400 Glide Slope is an airborne navigation receiver which receives and interprets glide slope signals from a ground-based Instrument Landing System (ILS). It is used with the localizer function of a VHF navigation system when making instrument approaches to an airport. The glide slope provides vertical path guidance while the localizer provides horizontal track guidance.

The Cessna 400 Glide Slope system consists of a remote-mounted receiver coupled to an existing navigation system, a panel-mounted indicator and an externally mounted antenna. The glide slope receiver is designed to receive ILS glide slope signals on any of 40 channels. The channels are spaced 150 kHz apart and cover a frequency range of 329.15 MHz through 335.0 MHz. When a localizer frequency is selected on the NAV receiver, the associated glide slope frequency is selected automatically.

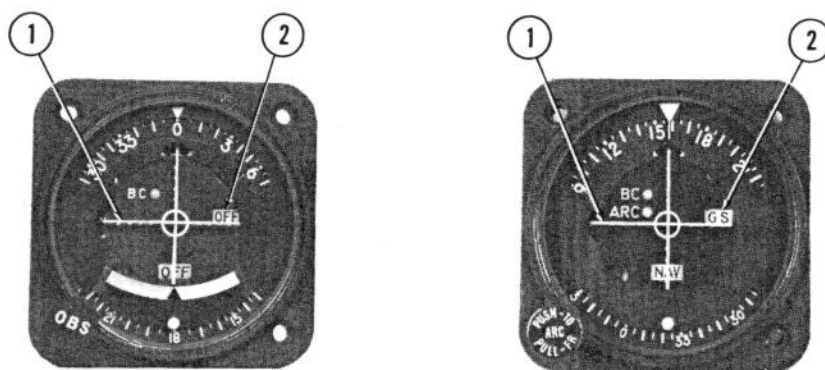
Operation of the Cessna 400 Glide Slope system is controlled by the associated navigation system. The functions and indications of typical 300 series glide slope indicators are pictured and described in Figure 1. The 300 series glide slope indicators shown in Figure 1 depict typical indications for Cessna-crafted glide slope indicators. However, refer to the 400 Nav/Com or HSI write-ups if they are listed in this section as options for additional glide slope indicators.

SECTION 2

LIMITATIONS

There is no change to the airplane limitations when this avionics equipment is installed.

TYPICAL 300 SERIES GLIDE SLOPE INDICATORS



1. GLIDE SLOPE DEVIATION POINTER - Indicates deviation from normal glide slope.
2. GLIDE SLOPE "OFF" OR "GS" FLAG - When visible, indicates unreliable glide slope signal or improperly operating equipment. The flag disappears when a reliable glide slope signal is being received.

CAUTION

Spurious glide slope signals may exist in the area of the localizer back course approach which can cause the glide slope "OFF" or "GS" flag to disappear and present unreliable glide slope information. Disregard all glide slope signal indications when making a localizer back course approach unless a glide slope (ILS BC) is specified on the approach and landing chart.

Figure 1. Typical 300 Series VOR/LOC/ILS Indicator

SECTION 3 EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when this avionic equipment is installed.

SECTION 4 NORMAL PROCEDURES

TO RECEIVE GLIDE SLOPE SIGNALS:

NOTE

The pilot should be aware that on many Cessna airplanes equipped with the windshield mounted glide slope antenna, pilots should avoid use of 2700 \pm 100 RPM on airplanes equipped with a two-bladed propeller or 1800 \pm 100 RPM on airplanes equipped with a three-bladed propeller during ILS approaches to avoid oscillations of the glide slope deviation pointer caused by propeller interference.

1. NAV Frequency Select Knobs -- SELECT desired localizer frequency (glide slope frequency is automatically selected).
2. NAV/COM VOX-ID-T Switch -- SELECT ID position to disconnect filter from audio circuit.
3. NAV VOL Control -- ADJUST to desired listening level to confirm proper localizer station.

CAUTION

When glide slope "OFF" or "GS" flag is visible, glide slope indications are unusable.

SECTION 5 PERFORMANCE

There is no change to the airplane performance when this avionic equipment is installed.

SUPPLEMENT

CESSNA 400 MARKER BEACON (Type R-402A)

SECTION 1

GENERAL

The system consists of a remote mounted 75 MHz marker beacon receiver, an antenna which is either flush mounted or externally mounted on the under side of the aircraft and operating controls and annunciator lights which are mounted on the front of the audio control panel.

Operating controls for the marker beacon system are supplied on the front of the two types of audio control panels used in this Cessna aircraft. The operating controls for the marker beacon are different on the two audio control panels. One type of audio control panel is supplied with one or two transmitters and the other is supplied with three transmitters.

The marker beacon operating controls and annunciator lights used on the audio control panel supplied with two or less transmitters are shown and described in Figure 1. The operating controls consist of three, three-position toggle switches. One switch is labeled "HIGH/LO/MUTE" and provides the pilot with HIGH-LO sensitivity selection and marker beacon audio muting, for approximately 30 seconds, to enable voice communication to be heard without interference of marker beacon signals. The marker beacon audible tone is automatically restored at the end of the 30 second muting period to continue marker audio for passage over the next marker. Another switch is labeled "SPKR/OFF/PHN" and is used to turn the set on and select the desired speaker or phone position for marker beacon signals. The third toggle switch labeled, "ANN LT", is provided to enable the pilot to select the desired DAY or NITE lighting position for annunciator lights, and also a "TEST" position to verify operation of marker beacon annunciator lights.

The marker beacon operating controls and annunciator lights used on the audio control panel supplied with three transmitters are shown and described in Figure 2. The operating controls consist of two, three-position toggle switches, and two concentric control knobs. One switch is labeled "SPKR/PHN" and is used to select the desired speaker or phone position for marker beacon signals. The other switch is labeled "HI/LO/TEST" and

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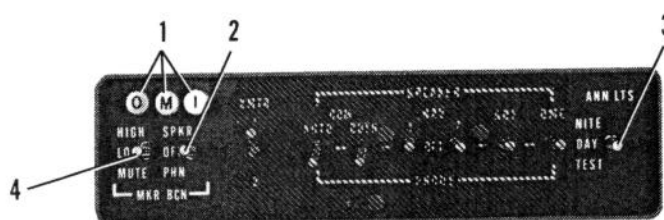
CESSNA 400 MARKER BEACON PILOT'S OPERATING HANDBOOK (TYPE R-402A) SUPPLEMENT

provides the pilot with HI-LO sensitivity selection and a TEST position to verify operation of all annunciator lights. The small, inner control knob labeled OFF/VOL, turns the set on or off and adjusts the audio listening level. The large, outer control knob labeled BRT, provides light dimming for the marker beacon lights.

When the Cessna 400 Marker Beacon controls are incorporated in an audio control panel incorporated with two or less transmitters a marker Beacon audio level adjustment potentiometer and an annunciator lights minimum dimming potentiometer are mounted on the audio control panel circuit board. Potentiometer adjustments cannot be accomplished externally. However, if readjustments are desired, adjustments can be made in accordance with instructions found in the Avionics Installations Service/Parts Manual for this aircraft.

MARKER FACILITIES

MARKER	IDENTIFYING TONE	LIGHT*
Inner & Fan	Continuous 6 dots/sec (300 Hz)	White
Middle	Alternate dots and dashes (1300 Hz)	Amber
Outer	2 dashes/sec (400 Hz)	Blue
* When the identifying tone is keyed, the respective indicating light will blink accordingly.		



AUDIO CONTROL PANEL FOR USE WITH ONE OR TWO TRANSMITTERS

1. MARKER BEACON ANNUNCIATOR LIGHTS:

OUTER - Light illuminates blue to indicate passage of outer marker beacon.
MIDDLE - Light illuminates amber to indicate passage of middle marker beacon.
INNER and FAN - Light illuminates white to indicate passage of inner and fan marker beacon.

2. SPEAKER/OFF/PHONE SELECTOR SWITCH:

SPEAKER POSITION - Turns set on and selects speaker for aural reception.
OFF POSITION - Turns set off.
PHONE POSITION - Turns set on and selects phone for aural reception.

3. ANNUNCIATOR LIGHTS SWITCH:

NITE POSITION - Places the annunciator lights in a dim lighting mode for night flying operations. Light intensity of the NITE position is controlled by the RADIO LT dimming rheostat.
DAY POSITION - Places the annunciator lights in the full bright position for daylight flying operations.
TEST POSITION - Illuminates all marker beacon annunciator lights (and other annunciators) in the full bright position to verify operation of annunciator lights.

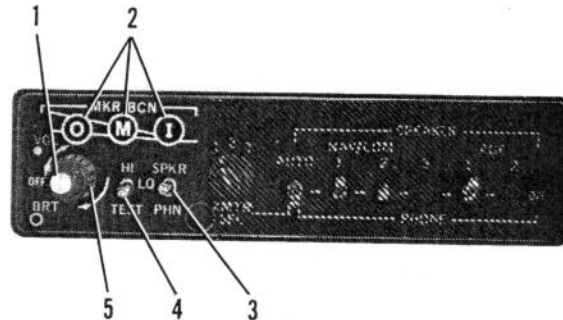
4. HIGH/LO/MUTE SELECTOR SWITCH:

HIGH POSITION - Receiver sensitivity is positioned for airway flying.
LO POSITION - Receiver sensitivity is positioned for ILS approaches.
MUTE POSITION - The marker beacon audio signals are temporarily blanked out (for approximately 30 seconds) and then automatically restored, over the speaker or headset in order to provide voice communications without interference of marker beacon signals.

Figure 1. Cessna 400 Marker Beacon Operating Controls and Indicator Lights Supplied with Two or Less Transmitters

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CESSNA 400 MARKER BEACON PILOT'S OPERATING HANDBOOK (TYPE R-402A) SUPPLEMENT



AUDIO CONTROL PANEL FOR USE WITH THREE TRANSMITTERS

1. OFF/VOLUME CONTROL:

OFF/VOL - Turns the set on or off and adjusts the audio listening level. Clockwise rotation of the smaller knob turns the set on and increases the audio level.

2. MARKER BEACON ANNUNCIATOR LIGHTS:

OUTER - Light illuminates blue to indicate passage of outer marker beacon.
MIDDLE - Light illuminates amber to indicate passage of middle marker beacon.
INNER and FAN - Light illuminates white to indicate passage of inner or fan marker beacon.

3. SPEAKER/PHONE SELECTOR SWITCH:

SPEAKER POSITION - Selects speaker for aural reception.
PHONE POSITION - Selects headphone for aural reception.

4. HI/LO/TEST SELECTOR SWITCH:

HI POSITION - Receiver sensitivity is positioned for airway flying.
LO POSITION - Receiver sensitivity is positioned for ILS approaches.
TEST POSITION - Illuminates all annunciator lights in the full bright position to verify operation of annunciator lights.

5. LIGHT DIMMING CONTROL:

BRT - Provides light dimming for the annunciator lights. Clockwise rotation of the larger knob increases light intensity.

Figure 2. Cessna 400 Marker Beacon Operating Controls and Indicator Lights Supplied With Three Transmitters.

SECTION 2 LIMITATIONS

There is no change to the airplane limitations when this avionic equipment is installed.

SECTION 3 EMERGENCY PROCEDURES

There is no change to the airplane emergency procedures when this avionic equipment is installed.

SECTION 4 NORMAL PROCEDURES

MARKER BEACON OPERATING PROCEDURES FOR USE WITH AUDIO CONTROL PANELS PROVIDED WITH ONE OR TWO TRANSMITTERS (REF. FIG. 1)

1. SPKR/OFF/PHN Selector Switch -- SELECT desired speaker or phone audio. Either selected position will turn set on.
2. NITE/DAY/TEST Selector Switch -- PRESS to TEST position and verify that all marker beacon annunciator lights illuminate full bright to indicate lights are operational.
3. NITE/DAY/TEST Selector Switch -- SELECT desired position for NITE or DAY lighting.
4. HIGH/LO/MUTE Selector Switch -- SELECT HI position for airway flying or LO position for ILS approaches.

NOTE

Press MUTE switch to provide an approximate 30 seconds temporary blanking out of Marker Beacon audio tone. The marker beacon audio tone identifier is automatically restored at the end of the muting period.

NOTE

Due to the short distance typical between the middle marker and inner marker, audio identification of the inner marker may not be possible if muting is activated over the middle marker.

MARKER BEACON OPERATING PROCEDURES FOR USE WITH AUDIO CONTROL PANELS PROVIDED WITH THREE TRANSMITTERS. (REF. FIG. 2)

1. OFF/VOL Control -- TURN to VOL position and adjust to desired listening level. Clockwise rotation increases audio level.
2. HI/LO Sen Switch -- SELECT HI position for airway flying or LO position for ILS approaches.
3. SPKR/PHN Switch -- SELECT speaker or phone audio.
4. BRT Control -- SELECT BRT (full clockwise). ADJUST as desired when illuminated over marker beacon.
5. TEST Switch -- PRESS to TEST position and verify that all marker beacon annunciator lights will illuminate full bright to indicate lights are operational.

SECTION 5

PERFORMANCE

There is no change to the airplane performance when this avionic equipment is installed. However, the installation of an externally mounted antenna or several related external antennas, will result in a minor reduction in cruise performance.