

**ENSTROM 480B OPERATOR'S MANUAL  
AND  
FAA APPROVED  
ROTORCRAFT FLIGHT MANUAL  
SUPPLEMENT  
GARMIN GNC 255A NAV/COM TRANSCEIVER  
WITH MD200-306 CDI**

\* \* \* \* \*

REPORT NO. 28-AC-063

HELICOPTER SERIAL NO. \_\_\_\_\_

HELICOPTER REGISTRATION NO. \_\_\_\_\_

\* \* \* \* \*

**THIS SUPPLEMENT MUST BE CARRIED IN THE  
HELICOPTER AT ALL TIMES IF EQUIPPED WITH THE  
GARMIN GNC 255A NAV/COM INSTALLATION.  
CHAPTERS 1, 2, 3, AND 4 ARE FAA APPROVED.**

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**ROTORCRAFT FLIGHT MANUAL SUPPLEMENT**  
**GARMIN GNC 255A NAV/COM**

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## INTRODUCTION

### Intro-1. General

This supplement contains the operating instructions, procedures, and limitations for the Garmin GNC 255A NAV/COM and the Mid-Continent Instruments MD200-306 CDI.

The supplement is divided into two basic parts, the FAA approved RFM Supplement and Supplemental Data provided by the Enstrom Helicopter Corporation (Enstrom). Chapters 1, 2, 3, and 4 make up the FAA approved RFM Supplement. It is required by Federal Regulations that this supplement be carried in the helicopter at all times if the GNC 255A NAV/COM and the MD200-306 units are installed.

For additional information regarding the supplement format and text emphasis or definitions, refer to the Basic Flight Manual. Abbreviations noted in this supplement are listed in Table Intro-1.

### Intro-1. List of Abbreviations

AMP	Amperage
AVI	Avionic
CB	Circuit Breaker
CCW	Counter Clockwise
CDI	Course Deviation Indicator
COM	Communication
CRSR	Cursor
CW	Clockwise
FAA	Federal Aviation Administration
GS	Glideslope
ICS	Intercom System
ID	Identifier
kHz	Kilohertz
LOC	Localizer
MSTR	Master
MHz	Megahertz

## INTRO-2      ENSTROM 480B RFM SUPPLEMENT

MIC	Microphone
NAV	Navigation
OBS	Omni Bearing Selector
POW	Power
RFM	Rotorcraft Flight Manual
RX	Receive
STB	Standby
TX	Transmit
USB	Universal Serial Bus
VHF	Very High Frequency
VOL	Volume
VOR	VHF Omni-Directional Range
VOX	Voice Activated
W	Watt

## CHAPTER 1. OPERATING LIMITATIONS

### 1-1. Purpose

This chapter includes operating limitations and restrictions that must be observed during ground and flight operations.

### 1-2. General

The operating limitations set forth in this chapter are the direct results of design analysis and flight tests. Compliance with these limitations will allow the pilot to derive maximum utility from the helicopter.

### 1-3. Operational Limits

1. This RFM supplement is intended for use with the GNC 255A NAV/COM interfaced with the MD200-306 CDI.
2. The Pilot's Guide for the GNC 255A, Part Number 190-01182-01, Revision A, or later revision, should be referred to for operating instructions. It must be kept accessible to the flight crew at all times.
3. An aircraft radio station license is not required in U.S. airspace but may be required when operating internationally.
4. The GNC 255A must utilize the software versions listed below.

<b>GNC 255A Approved Software Version</b>	
Display	2.02
Nav	6.02
Com	2.13

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## **CHAPTER 2. NORMAL PROCEDURES**

### **2-1. General**

Refer to the basic RFM.

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## **CHAPTER 3. EMERGENCY PROCEDURES**

### **3-1. Electrical System Failure**

Refer to the basic RFM.

### **3-2. Stuck Mic**

A “Stuck Mic” message will display on the GNC 255A if the microphone sticks in the ON or Transmit position. If the microphone is keyed for longer than 35 seconds, the GNC 255A will return to the receive mode on the selected frequency.

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## **CHAPTER 4. PERFORMANCE DATA**

### **4-1. General**

Refer to the basic RFM.

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## **CHAPTER 6. WEIGHT/BALANCE AND LOADING**

### **6-1. General**

This installation is included in the basic aircraft weight. Refer to the basic RFM.

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## CHAPTER 7. SYSTEM DESCRIPTION AND OPERATION

### 7-1. System Description

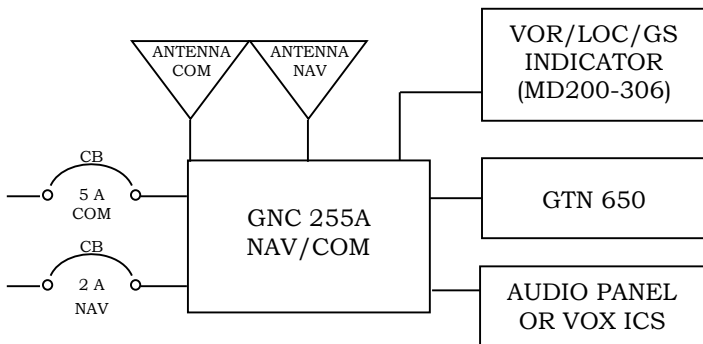
The GNC 255A is a VHF communications transceiver combined with 200-channel VOR, LOC, and GS navigation receivers. The com radio operates from 118.000 to 139.975 MHz in either 25 kHz or 8.33 kHz channel spacing. Transmitting power is 10W.

Features of the GNC 255A include automatic decoding of the Morse code station identifier for VOR/LOC, memory storage for most-used frequency, built-in course deviation indicator, standby Com and Nav frequency monitoring, Nav receiving for both VOR and LOC navigation signals, and built in Glideslope receiver.

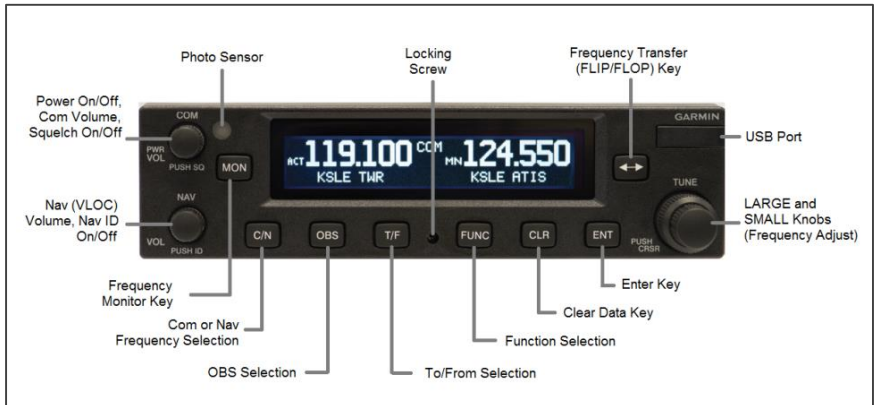
The GNC 255A provides output to a VOR/LOC/GS Indicator, such as the MD200-306, and to either a VOX ICS or an audio panel. The system interface is shown in Figure 7-1.

The MD200-306 receives input from the GNC 255A to provide a visual presentation of VOR, GPS, LOC and GS information. Refer to paragraph 7-16 for operation.

Power to the GNC 255A unit is provided via the **COM (COM, COM 1, or COM 2)** circuit breaker (CB) (5 Amp) and the **NAV (NAV, NAV 1, or NAV 2)** circuit breaker (CB) (2 Amp) located on the left side of the center pedestal.



**Figure 7-1. GNC 255A System Interface**



**Figure 7-2. GNC 255A Display**

## 7-2. Controls and Basic Operation

The GNC 255A controls are shown in Figure 7-2. Table 7-1 briefly describes the controls and functions.









Basic operation steps begin in paragraph 7-3.

Refer to the Garmin GNC 255A Pilot's Guide for complete operational instructions, including use of the Functions key for managing frequencies and performing database updates.

## 7-3. Power On

1. Position the **AVI MSTR** switch to ON to apply system power, if not already switched on.
2. Rotate **PWR/COM/VOL** knob CW past the detent to turn unit power on.

**Table 7-1. GNC 255A Controls**

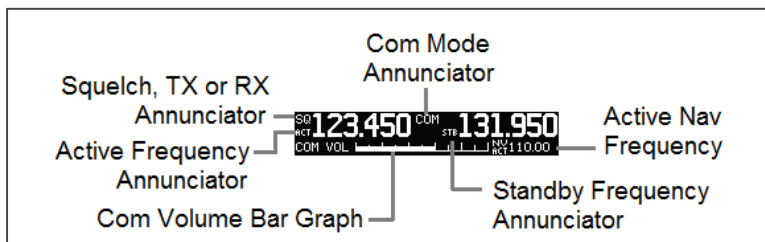
<b>Control</b>	<b>Function</b>
<b>PWR/COM/VOL</b>	Rotate to turn power On/Off and control Com audio volume. Press to toggle automatic squelch control On/Off for the Com radio.
<b>NAV/VOL</b>	Rotate to control Nav audio volume. Press to hear Morse code tones
<b>TUNE/CRSR</b>	Rotate LARGE/SMALL knobs to tune frequencies and enter data.
<b>FLIP/FLOP</b> 	Press and release to switch between Active and Standby frequency.
<b>C/N (COM/NAV)</b> 	Press to select Com or Nav mode.
<b>OBS</b> 	Press to see current OBS setting and graphic CDI.
<b>T/F (TO/FROM)</b> 	Press to toggle between the bearing TO or radial FROM the active VOR.
<b>CLR (CLEAR)</b> 	Press to erase information, cancel entries, and reset timer.
<b>ENT (ENTER)</b> 	Press to save selected values, confirm a prompt, or to save the Standby frequency.
<b>FUNC (FUNCTION)</b> 	Press to access radio, ICS, system, and timer configurations. Press again to exit the Function mode.
<b>MON (MONITOR)</b> 	Press to monitor to Standby frequency while listening to the Active frequency.
<b>USB Port</b>	Use the USB port to update the frequency database.

### 7-4. Selecting a Com Frequency

1. Press **C/N**, if necessary, to access the Com radio function. The COM annunciation will appear on the display (Figure 7-3).
2. Turn the **LARGE TUNE** knob to change the values in one MHz increments. Turn the **SMALL TUNE** knob to change the values in 25 kHz or 8.33 kHz increments.
3. Turn the **LARGE** and **SMALL TUNE** knobs CW to increase and CCW to decrease the frequency values. Standby frequency selection is not inhibited during transmit. (When connected to a position source, nearby station identifiers will be shown for the selected frequency. An asterisk next to the identifier indicates multiple types.)
4. Press and release the **FLIP/FLOP** key or the remote frequency transfer button on the cyclic (if equipped) to toggle the Standby frequency to the Active frequency.
5. Rotate the **PWR/COM/VOL** knob to desired volume level.
6. To override the automatic squelch function, press the **PWR/COM/VOL** knob momentarily. Press the knob again to return to automatic squelch operation.

#### NOTE

Refer to Figure 7-3 for Com annunciator display descriptions.



**Figure 7-3. Com Frequency Selection**



## 7-5. Monitoring the Standby Com Frequency

1. Press the **MON** key in the Com function to listen to the standby frequency. The 'MN' annunciation will replace the 'STB' annunciation to the left of the Standby frequency.

## 7-6. Saving a Com Channel

### NOTE

**When switching from 8.33 kHz to 25 kHz mode, any 8.33 kHz-specific user frequencies will be deleted from the user frequency list.**

### NOTE

**The Com User Frequency Database can store up to 15 frequencies.**

1. Press **ENT**. The Standby frequency is selected and the Waypoint name field will be active.
2. Turn the SMALL knob to select characters.
3. Turn the LARGE knob to move the cursor.
4. Press **ENT** after selecting the desired characters.
5. Turn the LARGE knob to select Waypoint type.
6. Turn the SMALL knob to select the type from the list.
7. Press **ENT** after selecting the desired characters.

### NOTE

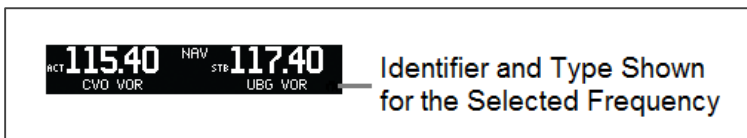
**Refer to the GNC 255A Pilot's Guide for Com database look-up features.**

### 7-7. Emergency Channel

1. Press and hold the **FLIP/FLOP** key or the remote frequency transfer button on the cyclic (if equipped) for approximately two seconds.
2. The Emergency Channel will be inserted into the Active Frequency position and the previous Active Frequency will become the Standby Frequency.

### 7-8. Selecting a Nav Frequency

1. Press **C/N**, if necessary, to access the Nav radio function. The NAV annunciation will appear on the display (Figure 7-4).
2. Turn the **LARGE TUNE** knob to change the values in one MHz increments. Turn the **SMALL TUNE** knob to change the values in 25 kHz or 8.33 kHz increments.
3. Turn the **LARGE** and **SMALL TUNE** knobs CW to increase and CCW to decrease the frequency values. Standby frequency selection is not inhibited during transmit.
4. Press and release the **FLIP/FLOP** key to toggle the Standby frequency to the Active frequency.
5. Press the **NAV/VOL** knob to hear Morse code tones.



**Figure 7-4. Nav Frequency Selection**

## 7-9. Saving a Nav Channel

### NOTE

**The Nav User Frequency Database can store up to 15 frequencies.**

1. Press **ENT**. The Standby frequency is selected and the Waypoint name field will be active.
2. Turn the **SMALL** knob to select characters.
3. Turn the **LARGE** knob to move the cursor.
4. Press **ENT** after selecting the desired characters.
5. Turn the **LARGE** knob to select Waypoint type.
6. Turn the **SMALL** knob to select the type from the list.
7. Press **ENT** after selecting the desired characters.

## 7-10. Listening to the Nav Audio Channel

1. Press the **NAV/VOL** knob to enable Nav ident. The ID annunciation will appear to the left of the active Nav frequency.
2. Rotate the **NAV/VOL** knob to adjust the volume.

## 7-11. OBS Mode

1. Press the **OBS** key to see the current OBS setting and graphic CDI.
2. Use the **LARGE** and **SMALL** knobs to change the displayed OBS values.

## 7-12. Distance/Speed/Time (DST) Display

Press the **T/F** key to show DST data in the lower part of the display.

### 7-13. Display Messages

When a message is displayed, press the **ENT** key to acknowledge the message and return to the previously viewed page. Pressing the **ENT** key will not correct the condition. Refer to the GNC Pilot's Guide for the message descriptions and course of action for troubleshooting.

### 7-14. Database Updates

Refer to the GNC 255A Pilot's Guide for updating database information.

### 7-15. Display Brightness and Contrast

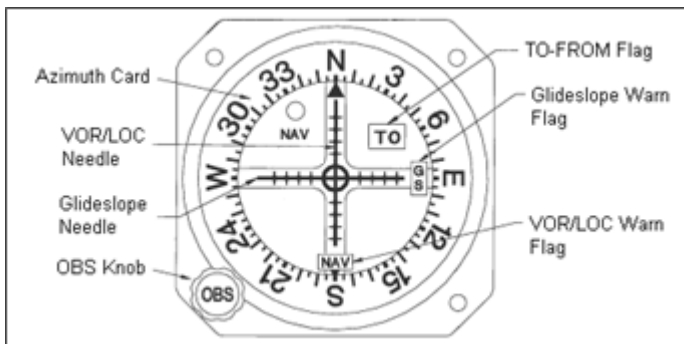
The GNC 255A automatically adjusts display brightness for current lighting conditions. For night operation, the display brightness can be adjusted with the RAD INST dimmer.

### 7-16. MD200-306 Controls and Operation

The MD200-306 display and controls are shown in Figure 7-5. Annunciators on the indicator will light when the mode is active or selected.

The OBS control knob on the front of the MD200-306 display is used to select the appropriate inbound or outbound bearing to a VOR station or waypoint.

For night operation, the display brightness can be adjusted with the PNL INST dimmer.



**Figure 7-5. MD200-306 Display**