

ENSTROM 480B OPERATOR'S MANUAL
AND
FAA APPROVED
ROTORCRAFT FLIGHT MANUAL
SUPPLEMENT
NAT AMS44 DUAL CHANNEL AUDIO CONTROLLER
NAT 247 AUDIO MIXING AMPLIFIER

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REPORT NO. 28-AC-048

HELICOPTER SERIAL NO. _____

HELICOPTER REGISTRATION NO. _____

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THIS SUPPLEMENT MUST BE CARRIED IN THE HELICOPTER AT ALL TIMES IF EQUIPPED WITH THE NAT AMS44 DUAL AUDIO CONTROLLER AND THE NAT 247 AUDIO MIXING AMPLIFIER. CHAPTERS 1, 2, 3, AND 4 ARE FAA APPROVED.

FAA APPROVED BY:  _____

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FAA APPROVAL DATE: _____ JANUARY 25, 2011 _____

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Jan 25/11

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LOG OF REVISIONS

Rev. No.	Date	FAA Approved
Original	Jan 25/11	<i>Josyllmers</i>

APPROVED FOR THE MANAGER
 CHICAGO AIRCRAFT CERTIFICATION OFFICE
 CENTRAL REGION
 FEDERAL AVIATION ADMINISTRATION

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INTRODUCTION

Intro-1. General

This supplement contains the operating instructions, procedures, and limitations for the NAT AMS44 Dual Channel Audio Controller and the NAT 247 Audio Mixing Amplifier. The supplement is divided into two basic parts, the FAA approved RFM and the 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 NAT AMS44 Dual Channel Audio Controller and the NAT 247 Audio Mixing Amplifier systems are installed.

For additional information regarding the supplement format and text emphasis or definitions, refer to the Basic Flight Manual.

The terms “controller” and “panel” are used interchangeably within this supplement.

Abbreviations noted in this supplement are listed in Table Intro-1.

Intro-1. List of Abbreviations

ADF	Automatic Direction Finder
COM	Communication
DME	Distance Measuring Equipment
FM	Frequency Modulation
ICS	Intercom System
MKR	Marker
NAV	Navigation
PTT	Push to Talk
RX	Receive
TX	Transmit
VOL	Volume
VOX	Voice Activated

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CHAPTER 1. OPERATING LIMITATIONS

1-1. Purpose

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

1-2. General

1. 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 NAT AMS44 Dual Channel Audio Controller and the NAT 247 Audio Mixing Amplifier.

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CHAPTER 2. NORMAL PROCEDURES**2-1. General**

1. Refer to the basic RFM.

2-2. Preflight

1. Test the Emergency function to assure that the radio levels are set adequately for emergency operation.

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CHAPTER 3. EMERGENCY PROCEDURES

3-1. Electrical System Failure

1. In the event of a power failure, move the audio panel Mode Control switch from **NORM** to **EMER OPER**.
2. The aural warnings and ICS will not function.

3-2. Audio Panel Failure

1. In the event of an audio panel failure, move the audio panel Mode Control switch from **NORM** to **EMER OPER**.
2. The copilot aural warnings and ICS will not function.

3-3. Audio Amplifier Failure

1. In the event of an audio amplifier failure, continue to operate the audio panel in the **NORM** mode.
2. Aural warnings will not function for either pilot or copilot. Use the visual indications provided by the applicable systems.

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CHAPTER 4. PERFORMANCE DATA

4-1. General

1. Refer to the basic RFM.

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CHAPTER 6. WEIGHT/BALANCE AND LOADING**6-1. General**

1. 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

1. The NAT AMS44 Dual Channel Audio Controller provides one central controller for all aircraft audio, allowing selection of transmit and receive audio, LIVE, PTT (keyed), or VOX intercom, pilot isolation, and emergency operation. Individual control over receive and transmit functions are provided for both the pilot and copilot. Common control is provided for LIVE, PTT, and VOX ICS. Additionally, control is provided for normal, emergency, or isolate operation.

2. The NAT 247 Audio Mixing Amplifier is designed for use as a multipurpose amplifier for mixing aural warnings. It has no operator accessible controls.

3. Power to the audio panel is provided via the **AUDIO PANEL** circuit breaker (1 Amp). Power to the amplifier is provided via the **AUD WRN** circuit breaker (1 Amp). The circuit breakers are located on the left side of the circuit breaker panel.

4. The audio system interface is shown in Figure 7-1. Note: All of the equipment shown is optional.

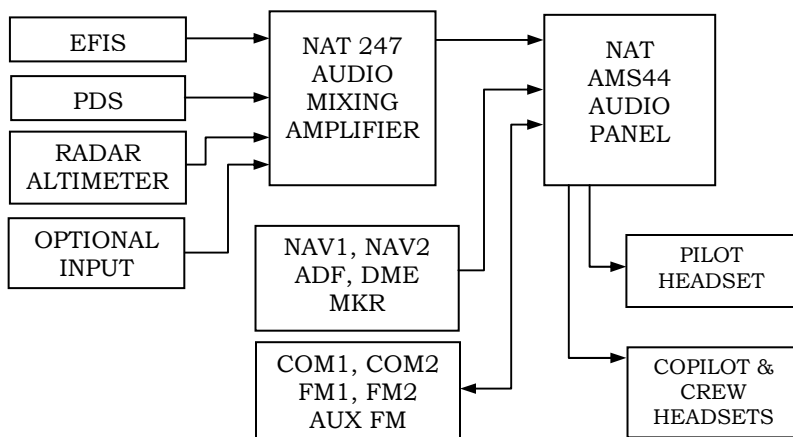


Figure 7-1. Audio System Interface

5. The NAT AMS44 controls are shown in Figure 7-2. A summary of the controls and functions is provided in Table 7-1.

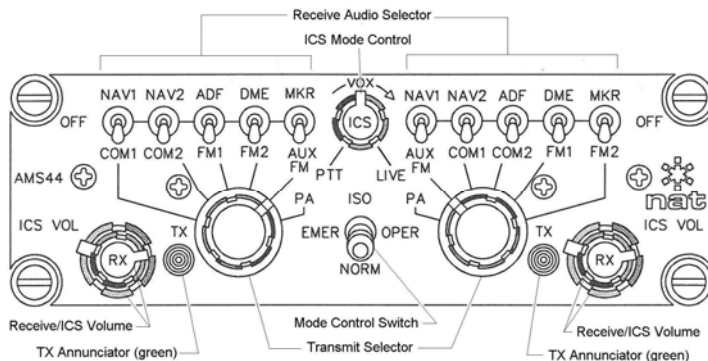


Figure 7-2. NAT AMS44 Controls

7-2. Audio Operation Modes

1. The center Mode Control Switch (identified with a red cap) is a locking toggle switch. Three modes of operation may be selected from this switch.

- For normal audio, set the Mode Control Switch to **NORM**.
- In the event of a power failure, set the switch to **EMER OPER**. Both the pilot and copilot controls are removed from the ICS bus and connected directly to their respective radios.

NOTE

In EMER OPER mode, all switches work exactly as they do during NORM operation, except for the RX and ICS volume controls, which will have no effect.

- To isolate the pilot from ICS audio, set the switch to **ISO**.

7-3. Volume

1. The inner (topmost) **RX** knobs adjust the receive audio from 10% to full volume.
2. The outer **ICS** knobs adjust the ICS audio from zero to full volume.
 - a. Pilot ICS volume is controlled by the **ICS** knob on the left side.
 - b. Copilot and crew ICS volume is controlled by the **ICS** knob on the right side.

NOTE

Speakers are not installed. Audio is limited to headset output only.

7-4. Transmit Selectors

1. Set the Transmit Selector switch to the desired transmit function. The pilot and copilot selector switches are independent of the other, and have equal priority during transmit.
2. When the PTT is activated, all audio selected on the side of the controller that is transmitting is muted, except the sidetone of the transceiver in use and the warning audio.

NOTE

All receive audio is muted during transmit (NORM and ISO mode).

3. During transmit from either pilot or copilot position, the appropriate TX annunciator (green) will light on the face of the audio panel (Figure 7-2).

7-5. Receive Selectors

1. Set the Receive Selector switches (identified with the white caps) to select the receive audio.
 - a. The 'up' position corresponds to the respective navaid receiver audio, **NAV1**, **NAV2**, **ADF**, **DME**, and **MKR**.
 - b. The 'down' position corresponds to the respective transceiver audio, **COM1**, **COM2**, **FM1**, **FM2**, and **AUX FM**.
 - c. The 'center' position is off.
4. Receive audio is automatically selected as a function of the respective Transmit Selector switch.

7-6. ICS Operation

1. All ICS audio is controlled by a common **ICS** control switch. Three modes of operation may be selected from this switch.
 - a. **PTT** – Set the switch fully counter-clockwise into the switch detent. The ICS audio is active only when the mic is keyed from the cyclic.
 - b. **LIVE** – Set the switch fully clockwise for constant ON audio.
 - c. **VOX** – Set the switch fully clockwise, then slowly rotate counter-clockwise until the intercom level is suitable for ambient noise conditions.

Table 7-1. NAT AMS44 Controls and Functions

Control	Function
Mode Control	NORM - Normal audio operation EMER OPER - Emergency audio operation ISO - Isolate the pilot from ICS
RX/ICS VOL	Rotate the inner RX knob to adjust the Receive volume level. Rotate the outer ICS knob to adjust the ICS volume level.
Transmit Selector	Rotate the control to select the desired transmit function, COM1 , COM2 , FM1 or FM2 . Note: AUX FM and PA are not available.
Receive Selector	Set the switches to monitor the respective navaid or transceiver audio. 'UP' - NAV1 , NAV2 , ADF , and MKR 'DOWN' - COM1 , COM2 , FM1 , and FM2 'CENTER' - Off Note: DME and AUX FM are not available
ICS Selector	PTT - Keyed operation LIVE - Constant operation VOX - Voice activated operation

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