

**ENSTROM 480B OPERATOR'S MANUAL
AND
FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT**

**KTR 908/KFS 598A VHF
KTR 909/KFS 599A UHF
COMMUNICATION RADIO SYSTEMS
AND
KMA 24H AUDIO SYSTEM**

* * * * *

REPORT NO. 28-AC-040

HELICOPTER SERIAL NO. _____

HELICOPTER REGISTRATION NO. _____

* * * * *

THIS SUPPLEMENT MUST BE CARRIED IN THE HELICOPTER AT ALL TIMES IF EQUIPPED WITH THE KTR 908/909 KFS 598A/599A AND KMA 24H INSTALLATION. CHAPTERS 1, 2, 3, AND 4 ARE FAA APPROVED.

FAA APPROVED BY: _____

for Charles L. Smalley

CHARLES L. SMALLEY, MANAGER
CHICAGO AIRCRAFT CERTIFICATION OFFICE
CENTRAL REGION
FEDERAL AVIATION ADMINISTRATION

FAA APPROVAL DATE: SEP 10 2010

NOTE

This document contains technical data, export of which is restricted by EAR. Disclosure to foreign persons without prior U.S. Government approval is prohibited. Violations of these export laws and regulations are subject to severe civil and criminal penalties.

PROPRIETARY

The information contained herein is proprietary to The Enstrom Helicopter Corporation and shall not be reproduced or disclosed in whole or in part for any PURPOSE except when such user possesses direct, written authorization from Enstrom Helicopter Corporation

Sep 10/10

INTENTIONALLY LEFT BLANK

LOG OF REVISIONS

Rev. No.	Date	FAA Approved
-	Sep 10/10	J. Miess
1	JUN 06 2012	<i>E. Michael Wood ACE-117C</i>

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

INTENTIONALLY LEFT BLANK

**ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
KTR 908/909 KFS 598A/599A AND KMA 24H**

TABLE OF CONTENTS

<u>CHAPTER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
	Supplement Cover Page	
	Log of Revisions	i
	Table of Contents	iii
	List of Figures	iv
	List of Tables	iv
	List of Effective Pages	v
	Introduction	INTRO-1
CHAPTER 1	OPERATING LIMITATIONS	1-1
	Purpose	1-1
	General.....	1-1
	Operational Limits	1-1
CHAPTER 2	NORMAL PROCEDURES	2-1
	General.....	2-1
CHAPTER 3	EMERGENCY PROCEDURES	3-1
	Electrical System Failure.....	3-1
CHAPTER 4	PERFORMANCE DATA	4-1
	General.....	4-1
CHAPTER 5	RESERVED.....	5-1
CHAPTER 6	WEIGHT/BALANCE AND LOADING.....	6-1
	General.....	6-1
CHAPTER 7	SYSTEM DESCRIPTION AND	
	OPERATION.....	7-1
	System Description	7-1
	Operation	7-2

**ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
KTR 908/909 KFS 598A/599A AND KMA 24H**

LIST OF FIGURES

<u>FIGURE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
7-1	System Block Diagram	7-2
7-2	KFS 598A Control Unit	7-4
7-3	KFS 599A Control Unit	7-4
7-4	KMA 24H Audio Panel.....	7-6

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
Intro-1	List of Abbreviations	INTRO-1
7-1	KFS 598A/599A Function Operation ...	7-5
7-2	KMA 24H Function Operation	7-6

LIST OF EFFECTIVE PAGES

<u>PAGE</u>	<u>DATE</u>	<u>PAGE</u>	<u>DATE</u>
I i	Apr 4/12		
ii	Sep 10/10		
iii	Sep 10/10		
iv	Sep 10/10		
I v	Apr 4/12		
vi	Sep 10/10		
INTRO-1	Sep 10/10		
INTRO-2	Sep 10/10		
1-1	Sep 10/10		
1-2	Sep 10/10		
2-1	Sep 10/10		
2-2	Sep 10/10		
3-1	Sep 10/10		
3-2	Sep 10/10		
4-1	Sep 10/10		
4-2	Sep 10/10		
6-1	Sep 10/10		
6-2	Sep 10/10		
7-1	Sep 10/10		
I 7-2	Apr 4/12		
7-3	Sep 10/10		
7-4	Sep 10/10		
7-5	Sep 10/10		
7-6	Sep 10/10		

INTENTIONALLY LEFT BLANK

INTRODUCTION

Intro-1. General

This supplement contains the operating instructions, procedures, and limitations for the KTR 908/KFS 598A VHF COMM radio system, the KTR 909/KFS 599A UHF COMM radio system, and the KMA 24H audio system. 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 KTR 908/KFS 598A, the KTR 909/KFS 599A, and the KMA 24H systems 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.

Table Intro-1. List of Abbreviations

ADF	Automatic Direction Finder
CB	Circuit Breaker
COMM	Communication
CVR	Cockpit Voice Recorder
EAR	Export Administration Regulation
GD	Guard
ICS	Intercom System
ISO	Isolate
MHz	Mega Hertz
MN	Main
NORM	Normal
PVT	Private
TACAN	Tactical Air Navigation
TX	Transmit
UHF	Ultra High Frequency
VHF	Very High Frequency
VOL	Volume
VOX	Voice Activated

INTENTIONALLY LEFT BLANK

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.

NOTE

The KTR 909 UHF COMM Transceiver is EAR controlled. Technical data must be handled in accordance with EAR requirements.

1-3. Operational Limits

1. This RFM supplement is intended for use with the KTR 908/KFS 598A and KTR 909/KFS 599A radio systems, and the KMA 24H audio panel and intercom system.

2. The KTR 909/KFS 599A UHF COMM radio is FAA certified as a receiver only. In accordance with FAA Type Design, the transmit function for this radio is disabled.

WARNING

The KTR 909 UHF Transceiver is capable of transmitting on the frequencies reserved for ILS glideslopes (328.6-335.4 MHz). If the Transmit function is enabled, the installation is not in compliance with FAA Type Design and the flight crew is responsible for ensuring they do not transmit on the reserved frequency band.

FAA Approved: Sep 10/10
Report No. 28-AC-040

Sep 10/10

INTENTIONALLY LEFT BLANK

CHAPTER 2. NORMAL PROCEDURES

2-1. General

Refer to the basic RFM.

INTENTIONALLY LEFT BLANK

CHAPTER 3. EMERGENCY PROCEDURES

3-1. Electrical System Failure

1. Refer to the basic RFM.

3-2. Stuck Mic

1. If the microphone is keyed for longer than 90 seconds, the KFS 599A control unit reverts to receive mode and the display flashes, alerting the pilot to a stuck microphone condition.

INTENTIONALLY LEFT BLANK

CHAPTER 4. PERFORMANCE DATA

4-1. General

Refer to the basic RFM.

INTENTIONALLY LEFT BLANK

CHAPTER 6. WEIGHT/BALANCE AND LOADING

6-1. General

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

INTENTIONALLY LEFT BLANK

CHAPTER 7. SYSTEM DESCRIPTION AND OPERATION

7-1. System Description

1. The KTR 908 VHF transceiver is a communications radio capable of receiving or transmitting voice or data within the frequency range of 118.000 and 151.975 MHz in 25 kHz increments. Tuning information is supplied by the KFS 598A control unit.

2. The KTR 909 UHF transceiver is a communications radio capable of receiving or transmitting voice or data within the frequency range of 225.000 and 399.975 MHz in 25 kHz increments. Tuning information is supplied by the KFS 599A control unit.

3. The KTR 909/KFS 599A UHF COMM radio is FAA certified as a receiver only. In accordance with FAA Type Design, the TX function for this radio is disabled. The KTR 909 is capable of transmitting on the frequencies reserved for ILS glideslopes (328.6-335.4 MHz). If the TX function is enabled, the installation is not in compliance with FAA Type Design and the flight crew is responsible for ensuring they do not transmit on the reserved frequency band

4. The KMA 24H audio system is comprised of dual (pilot and co-pilot) solid state audio selector panels. The KMA 24H receives and transmits on COM 1, COM 2, and COM 3, with the pilot having transmit authority over the co-pilot's audio panel, when each has selected the same transceiver. Intercom capabilities for three additional passengers allow for either or both the pilot or co-pilot to communicate or isolate themselves from the passengers. Additional navigation and communication equipment, such as the SL30, TACAN, or CVR, is also interfaced with the KMA-24H audio system. Refer to the appropriate RFMS for additional information.

5. Power to the KTR 908/KFS 598A system is provided via the **COM 1** circuit breaker (CB134) (10 Amp). Power to the KTR 909/KFS 599A system is provided via the **COM 3** circuit breaker (CB135) (10 Amp). Power to the KMA 24H is provided via the **AUDIO PANEL1** (pilot) circuit breaker

(CB132) (1 Amp) and **AUDIO PANEL2** (co-pilot) circuit breaker (CB133) (1 Amp). The circuit breakers are located on the left side of the center pedestal.

6. The system block diagram is shown in Figure 7-1.

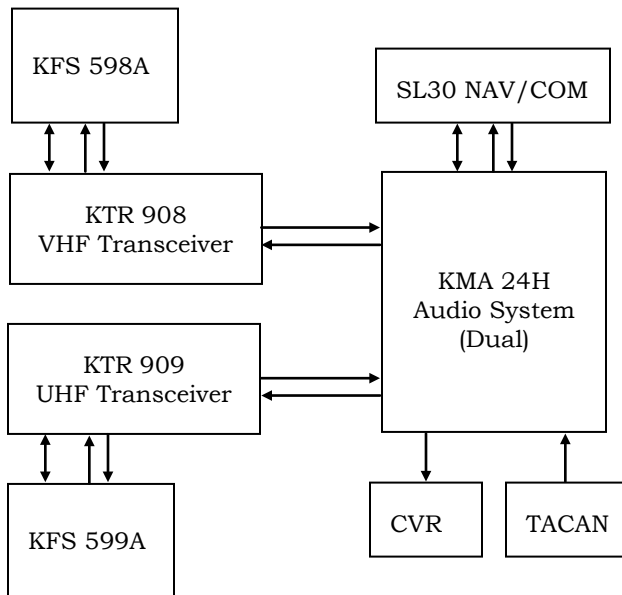


Figure 7-1. System Block Diagram

7-2. Operation

1. Operation of either the KFS 598A or KFS 599A is controlled by the **OFF/VOL** dial on the lower left side of the unit.

2. The KFS 598A and KFS 599A display and controls are shown in Figure 7-2 and Figure 7-3, respectively. The functions are briefly explained in Table 7-1.

3. The KMA 24H display and controls are shown in Figure 7-4. The functions are briefly explained in Table 7-2. When either the pilot or co-pilot keys the microphone to transmit, all other microphone inputs are muted to insure that the keyed microphone is the single source of the transmitted audio.

4. Annunciators for TX, MN (KFS 599A), and GD (KFS 599A) are illuminated when the mode is active.

5. Located at the lower right side of the circuit breaker panel are two identical switches labeled ISO, NORM, and PVT. The switches select the mode of headphone output. Move the switch to ISO to isolate pilot or co-pilot communication from the intercom. Move the switch to NORM to allow identical headphone output between pilot/co-pilot and passengers. Move the switch to PVT to isolate the pilot and co-pilot communication from the passengers.

6. An aircraft radio station license may be required with the KTR 908/909 for transmitting.

NOTE

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



Figure 7-2. KFS 598A Control Unit

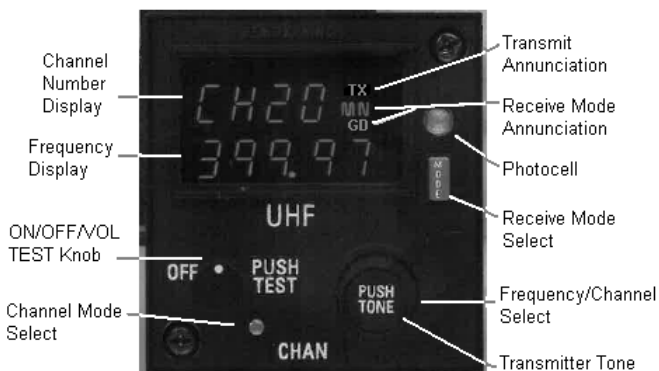



Figure 7-3. KFS 599A Control Unit

Table 7-1. KFS 598A/599A Function Operation

Function	Operation
ON/OFF/VOL PUSH TST/PUSH TEST	Rotate clockwise to turn on and increase volume. Push once to disable the automatic squelch state. Push again to enable.
 Transfer Button (KFS 598A only)	Push to transfer selected frequency in the Standby window to the Active window.
MODE	Push momentarily to cycle through the available receiver modes: <u>MAIN</u> – Allows transmitting and receiving on the selected frequency. <u>BOTH</u> – Scans the selected main frequency and the guard frequency. <u>ADF</u> – Not used in this installation.
Frequency/Channel Select	Turn the large knob to increment or decrement the frequency in 1 MHz steps. (KFS 598A) - Turn the small knob to increment or decrement the frequency in 50 kHz steps with the knob pushed in or in 25 kHz steps with the knob pulled out. (KFS 599A) - Turn the small knob to increment or decrement the frequency in 25 kHz steps.
PUSH TONE (KFS 599A only)	Press and hold to activate the 1 kHz tone transmitter test. (This feature is deactivated to comply with FAA Type Design.)
CHAN	Push momentarily to switch between manual and preset frequency selection modes. Press and hold to activate the programming mode.

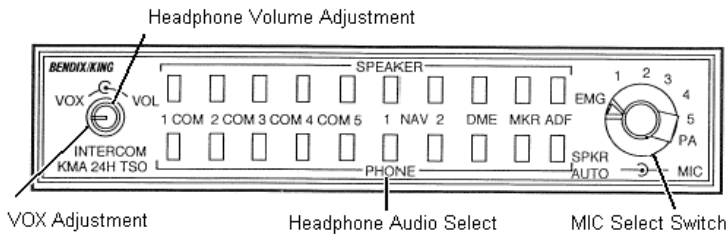


Figure 7-4. KMA 24H Audio Panel

Table 7-2. KMA 24H Function Operation

Function	Operation
VOX (outer)/VOL (inner)	Turn the outer knob to adjust VOX. Turn the inner knob to control the ICS volume.
PHONE	Push appropriate button(s) to select desired audio.
SPEAKER	N/A
MIC Select Switch	Rotate to route microphone audio and keying output to the appropriate destination. Enabled positions are: EMG, 1 (KTR 908), 2 (SL30), and 3 (KTR 909).
SPKR AUTO	N/A