

Engineering Division
W/OS031 : DN/TS

COMMUNICATIONS EQUIPMENT MODIFICATION NOTE 32
(for Electronics Technicians)

- SUBJECT : Installation and operating instructions for the NWR SAME EPROM upgrade.
- PURPOSE : To correct several noted operational problems associated with existing EPROM versions.
- EQUIPMENT : B343 NWR SAME Encoder, Mdl ECR 200
AFFECTED
- SPECIAL TOOLS : 24/28 pin extractor tool (ASN: 041-T-16)
REQUIRED : 24/28 pin insertion tool (ASN: 041-T-13)
- TIME REQUIRED : 5 minutes
- EFFECT ON OTHER : None
INSTRUCTIONS
- VERIFICATION : This maintenance procedure has been successfully tested at
NWS STATEMENT : Headquarters, Silver Spring, MD.
- SUPPORT : If questions arise, contact Donald Nguyen at (301) 713-1847 or
Thomas Snowdy at (301) 713-1836.

GENERAL

The EPROM is a memory chip located on the NWR SAME ECR 200 encoder main circuit board. EPROM versions 4.0, 4.1, and 5.1 are currently operational throughout the National Weather Service.

EPROM version 6.0 will replace all previous versions.

The ECR 200 encoder with a version 6.0 EPROM will interface with the B420/B422 AMPRO audio consoles, as well as the B430 (Digital Recorders), B431 (Interalia), and B432 (Dalke)

interim digital audio consoles. An EPROM version 6.0 device is provided for both the operational ECR 200 encoder and the backup unit.

EPROM version 6.0 has corrected several noted operational problems and added several features:

1. It correctly generates the fourth "IN" in the End-of Message (EOM) byte.
2. It stores the NWR SAME message origination time byte so the same time of day is sent with all three header messages.
3. It ensures that the audio control relay remains closed during the three header and EOM messages.
4. It allows the ECR 200 to be field programmed to interface with either the B420/B422 AMPRO console or the B430/B431/B432 interim digital consoles.
5. It allows for a two front panel key combination that will generate a continuous NWR SAME preamble string to aid in the total NWR SAME/telecommunications link/transmitter system alignment.

PROCEDURE

For instruction on how to install and operate the NWR SAME version 6.0 EPROM upgrade please refer to Attachment 1.

EFFECTIVITY

This modification note applies to all WSO's and WSFO's.

REPORTING MODIFICATION

Target date for completing this modification is 45 days after receiving this note. Report completed modifications on WS Form A-26, Maintenance Record, per instructions in EHB-4, Part 2, using reporting code B343 (Attachment 2).



John McNulty
Chief, Engineering Division

ATTACHMENT 1

NWR SAME ECR 200 Encoder EPROM Upgrade Instructions

General:

Enclosed is an EPROM upgrade (ver. 6.0) for the NWR SAME ECR 200 encoder that interfaces with the B420/B422 AMPRO audio consoles and the B430 (Digital Recorders), B431 (Interalia), and B432 (Dalke) interim digital audio consoles. An EPROM ver. 6.0 device is provided for both the operational ECR 200 encoder and the backup unit.

This EPROM ver. 6.0 has corrected several noted operational problems and added several feature:

- a. It correctly generates the fourth "N" in the End-Of-Message (EOM) byte.
- b. It stores the NWR SAME message origination time byte so the same time of day is sent with all three header messages.
- c. It ensures that the audio control relay remains closed during the three header and EOM messages.
- d. It allows the ECR 200 to be field programmed to interface with either the B420/B422 AMPRO console or the B430/B431/B432 interim digital consoles.
- e. It allows for a two front panel key combination that will generate a continuous NWR SAME preamble string to aid in the total NWR SAME/telecommunications link/transmitter system alignment.

INSTALLATION INSTRUCTIONS:

NOTE: The EPROMS are CMOS devices - Electro-Static Discharge (ESD) preventative methods and procedures should be used when performing the following tasks.

1. Remove power from the NWR SAME ECR 200 encoder; remove the top cover; and locate the EPROM (U6).

NOTE: "U6" is marked beside pin one of the socket on the printed circuit board.

2. Using a 24/28 pin extractor tool (ASN: 041-T-16), remove the old EPROM (labeled either ECR 200 v4.1 or 5.1) from the NWR SAME encoder taking note of its pin 1 orientation with respect to the notch in its socket.

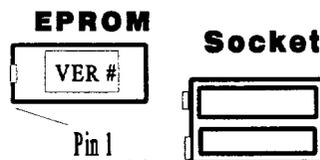


Figure 1

3. Remove the EPROM ver. 6.0 upgrade device from the ESD conductive box it was shipped in. Using insertion tool (ASN: 041-T-13) carefully insert the EPROM into the EPROM socket maintaining the correct pin 1 orientation with the notch in the socket. (Please refer to figure 1)

NOTE: If the pin row spacing on the EPROM is too great, place the device on one of its pin row sides and gently roll it towards its bottom, bending the row of pins inward. Be careful, it won't take much. Repeat the procedure on the other pin row, maintaining symmetry.

4. Place all of the replaced EPROMs as well as any unused ver. 6.0 devices in the ESD conductive box and return to the following address. They will be reprogrammed and shipped to other weather service offices. It is important that the old EPROMs be promptly returned so that the upgrades of all sites can be accomplished in a reasonable amount of time.

**National Weather Service
Attn: Darryl Modracek
W/OS031, #3422, SSMC2
1325 East West Hwy
Silver Spring, MD 20910-3283 (301)713-1847 ext. 119**

SETUP INSTRUCTIONS:

The following instructions will program the ECR 200 to interface with either a B420/B422 AMPRO audio console, a B430 (Digital Recorder), a B431 (Interalia), or a B432 (Dalke) interim digital audio consoles. Once it is programmed for either an AMPRO or a digital console, it will remain so until changed.

To program the ECR 200:

1. Push the "**STORE**" key twice with a 2-second pause between each key activation. (**NOTE:** This is the standard sequence to enter the PROGRAM mode of the ECR 200. The single LED display will indicate a "**P**").
2. Push the "**STATEMENT/UPDATE**" key once. The single LED display on left side of the ECR 200 front panel will show either an "**A**" or "**d**" to indicate which console type (AMPRO or digital) is currently selected.

To change the console type selection:

1. Push the "**STATEMENT/UPDATE**" key one time. The single LED will change state from "**A**" to "**d**" or vice-versa.

To EXIT to the operational mode:

1. Push the "**CANCEL**" key once - the LED will display a "**P**" for PROGRAM mode.
2. Push the "**CANCEL**" key the second time - the LED will display an "**0**" for OPERATION mode.

NOTE: If the “**CANCEL**” key is pushed only once, the PROGRAM mode will time out after 60 seconds and automatically switch to the OPERATION mode.

TO GENERATE A CONTINUOUS PREAMBLE SIGNAL: The ECR 200 can be commanded to send a continuous FSK signal, the NWR SAME Preamble, to facilitate the testing and alignment of NWR SAME system alignment.

To Start the **Continuous Preamble Signal:**

1. Push the “**TEST**” key one time.
2. Push the “**SEND**” key one time.

The ECR 200 will activate the output relay and start sending the NWR SAME preamble. The “**SEND**” LED will flash continuously to indicate the ongoing process.

To Stop the **Continuous Preamble Signal:**

1. Push the “**CANCEL**” key one time. The ECR 200 will return to normal operation.

NOTE:

If the power pack is removed from the ECR 200 or the A.C. power is interrupted, then the time and date data that were previously programmed into the ECR 200 will be lost. Therefore, it is necessary to reprogram the time and date.

When numbers are to be entered into the ECR 200, the “**EVENT**” key field is to be used with its number assignment as shown in fig. 2 of this Attachment (fig. 6 on page 19 of NWR SAME manual for interim digital audio console, or fig. 11 on page 28 of NWR SAME manual for AMPRO digital console). When alpha characters are to be entered into the ECR 200, the “**COUNTY**” key field is to be used to enter the letters of the alphabet as shown in figure 2.

PROCEDURES FOR PROGRAMMING TIME AND DATE

To program the time:

The real time and date for the ECR are entered and displayed on the Time/Date display on the right side of the keyboard. There are 4 digits which are designated from left to right for time as: tens of hours, hours, tens of minutes and minutes. The time is represented in a 24-hour format. The date is represented by a Julian date format which is display on the right three digits of the Time/Date display.

The ECR must be powered up and the Message Indicator Display (MID), the single digit display on the operator’s left, is showing a “0” that is blinking at a slow rate.

1. To enter the Programming Mode, push and release the “**STORE**” key, wait 2 seconds and push it again. The MID will show a “**P**” which signifies that the mode has been entered.
2. Select the-Time entry by pushing the left “**TIME**” key. The time/Date display will activate showing four zeros “0000”.

3. Using the “**EVENT**” key field, select the tens of hours which has a range from 0 to 2. The Time/Date display will show the entry.
4. Using the “**EVENT**” key field, select the hours which has a ranged from 0 to 9.
5. Using the “**EVENT**” key field, select the tens of minutes which has a ranged from 0 to 9.
6. Finally, using the “**EVENT**” key field, select the minutes which has a range from 0 to 9. After this entry, the display will show the complete entry for two seconds and then return to the programming entry mode.
7. To test or check the above entry, exit the program entry mode by press the “**CANCEL**” key once. Then press the left “**TIME**” key once. This will show the time that was just entered.

To program the date:

1. Select the Date entry by pressing the right “**TIME**” key. The Time/Date display will activate showing four zeros “0000”.
2. Using the “**EVENT**” key field, select the hundreds of days for the first of the Julian date. It has a range from 0 to 3 and will be displayed on the second digit from the left.
3. Using the “**EVENT**” key field, select the tens of days for the second entry. Its range is 0 to 9.
4. Using the “**EVENT**” key field, select the days for the third entry. The display will show the complete entry for two seconds and then return to the programming mode.
5. To test or check the above entry, exit the programming entry mode by pressing the “**CANCEL**” key once. Then press the right “**TIME**” key once. This will show the date that was just entered.

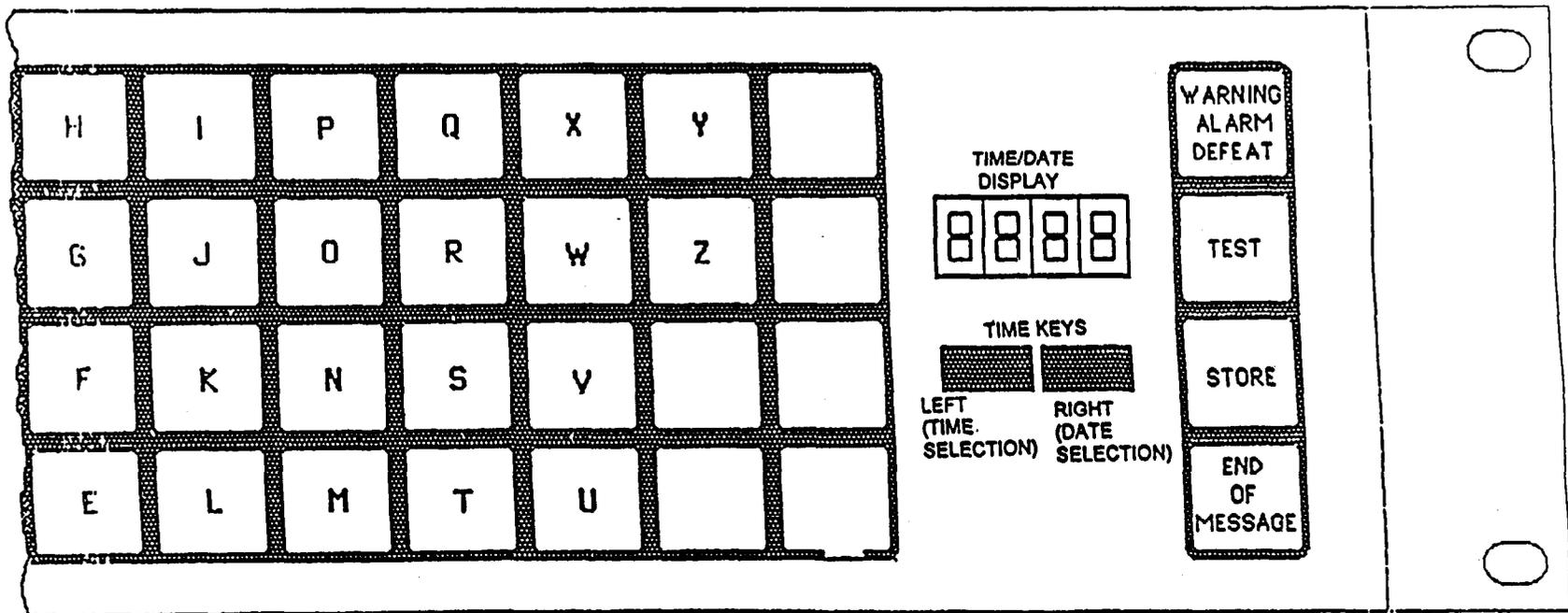
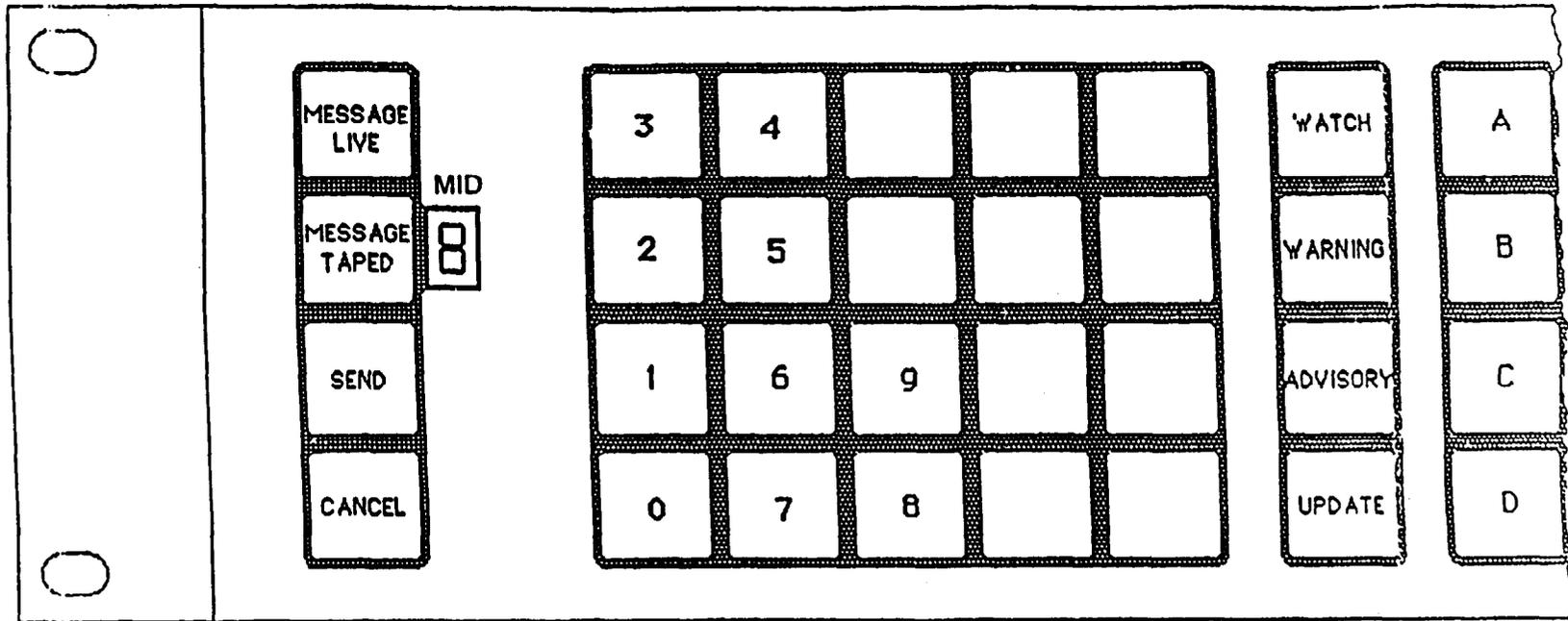


FIGURE 2

WS 3E ONLY		WS FORM A-26 (4/94) <small>Supersedes WS Form A-26 and WS Form H-26, which are obsolete</small>				<small>U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE</small>			Document Number LAB04.DOC		
		ENGINEERING MANAGEMENT REPORTING SYSTEM MAINTENANCE RECORD									
General Information		1. Open Date		Time	2. Initials	3. Response Priority (check one)			4. Close Date		
		09 / 17 / 97		0900	DN	<input type="radio"/> Immediate <input type="radio"/> Low <input type="radio"/> Routine <input type="radio"/> Not Applicable			09 / 17 / 97 0905		
5. Description Installation and operating instructions for the NWR SAME EPROM ver 6.0 upgrade											
Equipment Information		6. Station ID	7. Equipment Code	8. Serial Number		9. TM		10. AT	11. How Mal.		
		DAB	B343-1			M		M	999		
12. Equipment Operational Status Times		a. Fully Operational		b. Logistics Delay Partially Operational		c. All Other		d. Logistics Delay Not Operational		e. All Other	
		<input type="text"/>		<input type="text"/>		<input type="text"/>		<input type="text"/>		0005	
13. Parts Failure Information								14. Work Load Information			
Block #	a. ASN	b. NSN			c. TM	d. AT	e. How Mal.	f. QTY	g. Maint. Hrs.	Type	Staff Hrs
1										a. Routine	
2										b. Non-Routine	
3										c. Travel	
4										d. Misc.	00:05
5										e. Overtime	
Miscellaneous Information		15. Maintenance Comments Installation and operating instructions for EPROM ver. 6.0 upgrade									16. Initials DN
17. SPECIAL PURPOSE REPORTING		a. Mod. NO	b. Mod./Act./Deact. Date	c.		d.		e.			
		32	09/17/97								
18. CONFIGURATION MGMT. REPORTING (use as directed)		b. Block #	b. Manufacturer's Part No. of New Part					c. Revision No. of New Part			

WS HQ USE ONLY	WS FORM A-26 (4/94) <small>Supersedes WS Form A-23 and WS Form H-28, which are obsolete</small>	<small>U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE</small>	Document Number <h1 style="margin: 0;">G 49978</h1>
ENGINEERING MANAGEMENT REPORTING SYSTEM MAINTENANCE RECORD			

General Information	1. Open Date 09, 08, 97	Time 0900	2. Initials MRB	3. Response Priority (check one) <input type="radio"/> Immediate <input type="radio"/> Low <input type="radio"/> Routine <input checked="" type="radio"/> Not Applicable	4. Close Date 09, 08, 97	Time 1000
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5. Description
FORM MODIFICATION TO UPGRADE NWR SAME ENCODER I.A.W. MOD NOTE 32

Equipment Information	6. Station ID AKQ	7. Equipment Code B430	8. Serial Number MAR001	9. TM M	10. AT M	11. How Mal. 999	
12. EQUIPMENT OPERATIONAL STATUS	Fully Operational	b. Logistics Delay	Partly Operational	c. All Other	d. Logistics Delay	Not Operational	e. All Other 1:00

13. Parts Purchase Information								14. Work Load Information	
Block #	a. ASN	b.	c. TM	d. AT	e. How Mal.	f. Qty.	g. Maint. Hrs.	Type	Staff Hrs.
1								a. Routine	
2								b. Non-routine	
3								c. Travel	
4								d. Misc.	01.00
5								e. Overtime	

Miscellaneous Information	15. Maintenance Comments UPGRADED B343 NWR SAME ENCODER FROM V	16. Initials MRB
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17. SPECIAL PURPOSE REPORTING	a. Mod. No. 32	b. Mod./Act./Deact. Date 09/08/97	c.	d.	e.
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18. CONFIGURATION MGMT. REPORTING (use as directed)	a. Block #	b. Manufacturer's Part No. of New Part	c. Revision No. of New Part
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<i>Issue Date</i>	<i>Org. Code</i>
3-9-87	W/OS032

NATIONAL WEATHER SERVICE
Engineering Handbook

<i>Program</i>	<i>Part</i>	<i>Section</i>
EHB-7	04	4.4

MAINTENANCE SCHEDULE INDEX - COMMUNICATIONS EQUIPMENT

Date of Issue

Title

July 25, 1991

Revised Quarterly Maintenance Schedule for NOAA
Weather Radio System Type B220/B222

