GORMAN REDLICH
257 West Union St.
Athens, Ohio 45701
FAX: 740-592-3898
Ph: 740-593-3150

EAS-1/EAS-1CG Setup and Operation Manual

Table of Contents

Section I: EAS-1/CG Description

EAS-1/CG Encoder Specifications

Access Control: Access to the encoder to generate an alert is protected against unauthorized personnel generating false alerts by requiring a four-digit access code which must be entered from the front panel keypad or optional telephone interface. The four-digit code is not required if the encoder is being programmed through the DB9 RS232 PC port or when a valid incoming alert is being manually forwarded.

Audio Storage: The encoder has the capability of inserting an up to two-minute audio portion of the alert message by using a microphone or playing back up to two minutes of audio stored in the internal digital audio storage unit, as well as recording and replaying another up to one-minute audio message that is normally used for a "tune-to" message. With the inclusion of the optional telephone interface, the audio portion of the two-minute alert message can be stored in the encoder from a remote location using a telephone or similar device with a DTMF telephone keypad. The keypad can be used to play back the stored audio messages for editing prior to forwarding a complete, full-blown EAS civil emergency message. The DB9 RS232 PC port can be used to compose a data message using a 1200 baud rate. Audio may be recorded either through input 6, which also will accept an amplified studio microphone, or through the front-panel speaker.

Audio Outputs: The encoder has an adjustable balanced audio output on the rear of the unit, in one of the terminal plugs, which is 600 ohms @ +8 dbm max. The DB9 PC port is a two-way data port which can be used as a data output port (RS 232, 1200 baud). The front panel keypad is used to adjust the internal digital pots which set the output level of each of the four frequencies used to generate the FSK header and dual-tone attention signal.

Header Information: When the encoder originates a message, the date, hour and minute that are derived from the internal clock are encoded in the burst of FSK as well as the identification of the originating entity.

Other Features: The programming data and stored audio messages are non-volatile and unaffected by power interruption. The front-panel 4-line, 40-character display lets the operator know what the encoder and decoder are doing at all times. The display reports sending or receiving FSK, attention signal, voice message and EOM. The front-panel speaker simultaneously presents the same audio and if the unit is installed in a room where radio traffic is generated, a microphone switch can be wired in through the rear terminal block to mute the speaker on the EAS while the microphone is being used in the radio room.

Figure I.1: Attention Tone Specifications

	FCC Specification	EAS-1/CG Specification
Temperature Range	0^oC to 50^oC up to 95% RH	**-10°C to +60°C** up to 95% RH
Tone Frequencies	853 Hz +/- 0.5 Hz	853 Hz +/- **0.1 Hz**

	960 Hz +/- 0.5 Hz	960 Hz +/- **0.1 Hz**
Total Harmonic Distortion	Not to exceed 5% at encoder output terminal	**Exceeds** specifications by at least 10 dbm each tone, over temp range -10°C to +60°C
Minimum Output Level	+8 dbm into 600 ohms, each audio tone	+8 dbm into 600 ohms, each audio tone
Dual Tone Length	Adjustable, from 8 sec. to 25 sec.	Adjustable, from 8 sec. to 25 sec.
Attention Tone Indicator	Visual <u>or</u> aural indicator of attention signal activation	Visual **and** aural indication of attention signal activation
Supply Voltage Variation	Must comply with above specification for 85% to 115% of line voltage	Complies with above specification for 85% to 115% of line voltage
Operation in High RF Field	Must comply with the specification for operation in an RF field of an AM, FM and TV broadcast frequency.	Complies with the specification for operation in an RF field of an AM, FM and TV broadcast frequency
FSK Tone Specifications	-40 dB over temperature range of 0° C to +50° C	All frequency components outside the 200 to 4000 Hz band **exceed** -40 dB with respect to output levels of mark and space frequency and over temperature range of **-10° C - +60° C**

Gorman-Redlich EAS-1/CG Decoder Specifications

Audio Inputs: The EAS-1/CG decoder section provides six audio inputs which greatly exceeds the FCC specification of two audio inputs from EAS monitoring assignments. It also has a DB9 RS232 data input port which operates at 1200 baud.

Message Handling: The unit compares the three bursts of FSK and must have the same data at each position in the header in two out of the three bursts of FSK to have a valid header. If this condition is met, the unit then checks to see if the incoming message is a duplicate of one already received, or if the message was originated by the receiving unit. Duplicate messages are printed out but cannot be forwarded. If neither of these two conditions are met, it next checks to see if the incoming message has expired. If the incoming message is still within its valid time period, the unit checks to see if the event is one of the required or preselected event codes. If this condition is satisfied, the decoder next checks to see if there is one of the programmed counties in the incoming header. If all of these conditions are met, the audio (up to two minutes in length) will be stored and this message can be forwarded.

Header Storage: The EAS-1/CG can currently store twenty preselected event and originator coded combinations, exceeding the FCC's required ten, in addition to the four mandatory code combinations of tests and national activations. Firmware has been completed and is

being tested to expand the preselected table and to permit additional event codes to the be entered (in the current test version, all 32 available header codes may be programmed and stored). The header codes of the last ten received valid messages are stored for comparison with the incoming valid header codes of later messages.

Incoming Messages: Valid EAS header codes that are received are converted to a text message and displayed on the 4-line, 40-character, LED backlit display. The audio message portion of an alert is heard on the front panel speaker. The EAS-1/CG also monitors each of the audio inputs and presents a visual indication of whether or not the audio is present on each channel. Program data is preserved in case of loss of power.

Other Features: The decoder has a DB9 RS232 1200-Baud data port where received messages are available for logging. The front panel keypad can be used to monitor each decoder audio input using a built-in front-panel speaker. Decoder programming is protected from unauthorized adjustments by the requirement that four-digit code be entered on the front panel keypad.

The decoder will automatically reset after two minutes if the originator of the incoming message fails to send the EOM. Only the EAN event code can override this feature. When the EAN code is received, it will automatically override any other incoming code.

Figure I.2: Decoder Attention Tone Specifications

	FCC Specification	EAS-1/CG Specification
Operating Temperatures	0^oC to $+50^oC$, up to 95% RH	**-10^oC to $+60^oC$**, up to 95% RH
Decoder Frequency Response	+/- 5.0 Hz bandwidth 853 Hz & 960 Hz	+/- **1.5 Hz.** bandwidth 853 Hz & 960 Hz
Reset on Message Completion	Manually or automatically mute receiver	**Automatically** mutes receiver

Other Specifications

System Access Through the Front Panel

Display Screen: 4-line, 40-character LED backlit display, displaying the following information:

- Number of audio inputs being scanned
- From which inputs active audio is being received
- Date: month/day/year
- Time: hour/minute/second/time zone
- Firmware version (20.2 most current)
- Notification if an active message is stored
- Length of any audio recorded for an active message
- Operational mode: TV/CG, Cable SSC, Cable, Manual, or Automatic
- During incoming message: The display sequentially presents messages indicating incoming header FSK, incoming attention tone (ATT), incoming audio, and incoming

EOM FSK.

- During outgoing (originated or forwarded) message: The display sequentially presents messages indicating outgoing header FSK, outgoing attention tone (ATT), outgoing audio, and outgoing EOM FSK.

Keypad: RFI- and ESD-protected, shielded, 20-key flat keypad

- Embedded numeric keypad as additional function for included keys
- Gives full operational capability from the front panel
- Allows setting of levels for tone modulation, input audio levels, panel speaker audio level, attention tone duration, and other variables.

Speaker plays:

- Incoming FSK, attention signal (ATT), audio message, and EOM tone.
- Outgoing FSK, attention signal (ATT), audio message, and EOM tone.
- Audio input of selected station being monitored, if desired.
- Audio stored in the digital storage chips, if desired.

External device capability

- Direct connection for driving a scrolling signboard (DB9 RS232).
- Direct connection for driving a character generator (DB9 RS232).
- Modem connection (DB9 RS232).
- Terminals for an external circuit to mute speaker.
- Terminals for an external momentary contact closure to send RWT.
- Terminals for an external momentary contact closure to send RMT.
- Terminals for an external momentary contact closure to send EOM.
- Terminals for an external momentary contact closure to forward received header.
- Terminals that provide a continuous contact closure during the transmission of an alert.
- Six audio inputs, enabling six-channel scanning. Many stations use at least three inputs, for primary, secondary, and NOAA NWS.
- One of the audio inputs is configured for an optional external audio input from a studio microphone to store the two-minute audio.
- An additional BNC monaural output for aural monitoring in a remote location of the outgoing alert.
- Printer port for logging (parallel printer port).
- PC serial port for logging and programming (DB9 RS232).
- Optional telephone jack for telephone control (requires installation of optional internal DTMF telephone interface board) .

EAS-1/CG Rear Panel Description

The rear panel of the EAS-1/CG has an array of ports of various types. On the top, from the right, are four RS232 ports:

- COM3: Modem (male RS232/DB9)
- COM2: Sign Board (male RS232/DB9)
- COM1: Spare (female RS232/DB9)
- COMPC: P.C. Port (female RS232/DB9)

EAS-1/CG Rear Panel Terminals

1-12 Audio In-Monitors 1-6	Six pairs of audio inputs are each coupled to the decoder by 600 ohm to 600 ohm isolation transformers. These six audio sources are scanned for EAS alert messages.
13-14 Audio Out 600 Ohm Selection	Balanced 600 ohm continuous audio output from an operator selected monitor input channel #1 - #6.
15-16 Audio Out 8 Ohm Selection	Balanced 8 ohm continuous audio output from an operator selected monitor input channel #1 - #6. This will be the same audio as on 13-14.
17-18 Audio Out 600 Ohm Alert	Balanced 600 ohm audio output from the channel carrying the alert message. This output is gated on when the alert takes place.
19-22 *Control OutAlert	Two contact closure outputs can be used to signal remote control equipment, automation equipment or to activate a remote bell or lamp. If one of the contact closures goes to automation, do not put any other circuits on this set of contacts. This relay energizes for 1 second when an incoming message EOM is completed.
23-24 Console Muting	These terminals allow console muting of the panel speaker when the unit is installed in an on-air room
25-32 Audio IN/OUT - Program A/B	Eight terminals for balanced 600 ohm stereo program audio lines. Via these inputs and outputs, the encoder interrupts the program audio to insert the alert message.
33-34*Control Out - Send Alert	Contact closure which can complete the circuit for an external relay coil for a coaxial relay during the time the encoder is sending an alert signal. This will allow a low impedance (600 ohm) coaxial alert feed directly into a transmitter exciter circuit, thus bypassing all audio processing. It can also be used to energize an external relay to interrupt the program audio on an AM transmitter.
35-36*Control Out - EAS Complete	One-second contact closure output to signal automation equipment that the EAS interruption is completed.
37-38 Control In - Delete Audio	Momentary contact closure input for deleting the 853/960 attention signal and the audio message portion of a received alert message. The encoder will send only the FSK (frequency shift keying) header and EOM (end of message) portions. The momentary contact closure would be supplied by remote switch or remote control equipment contacts. This function only works in Broadcast mode, and is not applicable to TV/CG mode.
39-40 Control In - Send Alert	Momentary contact closure input to tell encoder to send a stored alert message now.
41-42 Control In - Manual	Momentary contact closure input to switch the encoder from automatic to manual control. You must wait for a 5 second delay, if you want to toggle back and forth.
43-44 Control In - EOM	Momentary contact closure input to remotely send EOM FSK (end of message).
45-46 Control In - RWT	Momentary contact closure input to remotely send RWT (required

	weekly test; FSK header code and EOM)
47-48 Control In - RMT	Momentary contact closure input to remotely send RMT (required monthly test; FSK header and dual tones)
49-50 Data In/Out - RS485	Serial data option for future remote control equipment.
51-52 Spare terminals	Can be used to supply battery backup power to the unit.

- *Use low voltage DC circuit on these contacts with a back biased diode to kill any inductive kick from the external circuit.*

Section II: Setting up the EAS-1/EAS-1CG

1. When installing the unit in the rack, be sure to ground it well. We recommend grounding it to the rack from one of the rear grounding screws, and then grounding the rack.

2. We strongly recommend placing the EAS-1/CG on an uninterruptible power supply (UPS). The printer and the receivers used to monitor the National Weather Service and/or broadcast stations should also be plugged into this.

3. When installing the printer, be sure to use an IEEE shielded parallel printer cable. Also, we strongly recommend finding a used dot-matrix printer with a normal-width capacity. In our experience, these work better than laser or inkjet printers.

4. Input audio should always be connected to the lower-numbered input channels (terminals 1-12). However, if there is an input from the National Weather Service, it should be connected to input channel 3 (terminals 5-6). Studio microphones should be routed to input 6 (terminals 11-12), and must go through an amplifier.

5. Once the audio inputs are connected, it's essential to set the input levels. Instructions for doing this are to be found in Section VIII, item 3.

6. Once the program audio lines are looped through the unit, it's essential to set the modulation, using the outgoing program line. The 853 and 960 tones should be set at forty percent, while the 1560 and 2083 tones should be set at eighty percent. Instructions for doing this are to be found in Section VIII, item 2.

7. A sign board in the "on-air" studio is a good idea if the EAS-II equipment is installed in another room. Warning messages will be scrolled in RED, watches in YELLOW, and required tests in GREEN. If you are using a sign board, Utility Menu option 11 should say "**TOGGLE SIGN OFF** " and if you are not using a sign board, it should say "**TOGGLE SIGN ON**." Pressing changes this from one to the other.

8. When the unit operates in any mode other than **MANUAL**, incoming header codes targeted for one of the counties in the listening area trigger two sets of relay contacts. These close for one second upon completion of the three bursts of FSK EOM (terminals 19 & 20 and 21 & 22). This contact closure can be used to turn on a bell or light, or signal remote control or automation equipment. Some locations operate in manual twenty-four hours and do not interface with automation, but would like to have a contact closure under the above circumstances to call attention to the incoming message. If Utility Menu option 12 reads "**TOGGLE ALERT OFF**," the contacts will close in manual, also.

9. If the station is an LP1 or and LP2, the required monthly test that you originate should have a valid time period of one hour. All other stations that originate an RMT should use a valid time period of 15 minutes.

10. Be sure to go through the other sections of this manual, especially Section VIII: Using the EAS-1/CG Utility Menu. We strongly recommend going through this section, step by step, to better familiarize yourself with the system. If you need to change any programming for your location, then be sure to read Section X: Station Setup.

Section III: Setting up the EAS-1/EAS-1CG

NOTE: The DOS EAS Setup software has been replaced by a new Windows compatible setup program. Check the Gorman Redlich website for the instruction manual for the new software version (PDF reader required).

Section IV: EAS-1/EAS-1CG Operating Display

Figure IV.1

```
    SCAN:3ACTIVE:123        7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready

                            TV/CG
```

On the first line of the display shown in Figure IV.1, the number just to the right of **SCAN**: is the total number of inputs that are being scanned (here, 3 inputs), looking for the FSK preamble signal, AB AB. The digits to the right of **ACTIVE**: show which input channels are actively receiving broadcast signals. For example, if the source of audio connected to the third input momentarily is lost (possibly just a long pause in programming), the digit 3 will disappear, and the top line will only read **SCAN:3ACTIVE:12**. as shown below in Figure IV.2:

Figure IV.2

```
    SCAN:3ACTIVE:12         7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready

                            TV/CG
```

The first two figures show the display with the **TV/CG** message in the lower right-hand corner, which is the normal operating mode for the EAS-1/CG. However, the unit can operate in other modes. When the unit is in regular ("PSC") **Cable mode**, the front screen will show it as follows:

Figure IV.3

```
    SCAN:3ACTIVE:123        7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready

                            Cable
```

When the unit is in **Cable SSC** ("Small-System Cable") mode, the front screen will look as shown below:

Figure IV.4

```
SCAN:3ACTIVE:123      7/08/00 16:06:21EDT
DECODER: Scanning V 20.2
ENCODER: Ready
                        Cable SSC
```

When none of these three modes is turned on, then the screen will look like one of the two following examples, which are both referred to as **Broadcast mode**:

Figure IV.5

```
SCAN:3ACTIVE:123       7/08/00 16:06:21EDT
DECODER: Scanning V 20.2
ENCODER: Ready
                        Automatic
```

or

Figure IV.6

```
SCAN:3ACTIVE:123       7/08/00 16:06:21EDT
DECODER: Scanning V 20.2
ENCODER: Ready
                        Manual
```

Automatic operation means that the EAS-1/CG will automatically forward incoming messages as specified by the programming. This is an option in broadcast mode, and required when in Cable, Cable SSC, or TV/CG mode. In Broadcast mode, the unit may also be switched to Manual, where all messages must be forwarded by the operator by pressing the red <SEND STORED ALERT> key before the message valid time expires. To toggle between Manual and Automatic when in Broadcast mode, press the <6> key on the keypad, which is also the <MANUAL/AUTOMATIC> key. Whenever this key is pressed in Broadcast mode, the change either way will be logged with a time stamp, including seconds.

NOTE: When performing many keypad operations, the time clock displayed in the upper right-hand corner will freeze until the operation is complete. No other keypad operation may be performed until the clock is again running. Wait until you see the seconds counting up again before initiating any new keypad actions.

The above screens are also the normal screens shown when the printer is properly connected for logging, when the unit is logged to the PC port, or when no logging is chosen. There are only four printer states possible as shown on the display. The second is when the EAS-1/CG is logged to the printer, and the printer is connected but is not operating properly. Then a screen will be shown as below, with the **PRINTER UNKNOWN ERROR** message. This message is also reported if the printer is offline for any reason.

Figure IV.7

```
    SCAN:3ACTIVE:123      7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready * PRINTER UNKNOWN ERROR*
                         Automatic
```

The third mode is **PRINTER NOT CONNECTED**, which occurs when PRINTER is not selected for logging (menu item 7), or when PRINTER is selected but no cable is connected, or when there is no functioning data connection between the EAS-1/CG and the printer for some other reason.

Figure IV.8

```
    SCAN:3ACTIVE:123      7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready * PRINTER NOT CONNECTED*
                         Automatic
```

And the fourth mode is **PRINTER OUT OF PAPER**, which is self-explanatory:

Figure IV.9

```
    SCAN:3ACTIVE:123      7/08/00 16:06:21EDT
    DECODER: Scanning V 20.2
    ENCODER: Ready * PRINTER OUT OF PAPER*
                         Automatic
```

Section V: EAS-1/EAS-1CG Keypad Options

The EAS-1/EAS-1CG keypad layout is as follows:

Figure V.1: EAS-1/EAS-1CG Keypad Layout

RWT 1 ABC	RMT 2 DEF	EOM 3 GHI	SEND STORED ALERT	SEND COMPOSED HEADER
FUNCTION 4 JKL	DELETE AUDIO 5 MNO	MANUAL AUTO 6 PQR	COMPOSE HEADER	DISPLAY COMPOSED HEADER
MENU 7 STU	SELECT INPUT 8 VWX	RECORD SPEECH 9 YZ/	PLAY- BACK SPEECH	DISPLAY RECEIVED HEADER
CLEAR	EXIT 0 -[]			ENTER

Each of these keys has one or more secondary functions, which are described in the following sections:

First Row

The top (first) row is colored red, and contains the keys for sending EAS messages. From left to right, these are:

<RWT>: Send Required Weekly Test: Just press this key once and a complete weekly test is automatically generated.

<RMT>: Send Required Monthly Test: Pressing this key generates the three FSK header bursts, followed by the attention tone, and then opens the channel for audio output, either from a microphone or previously recorded. When the audio message is finished, EOM must be pressed to complete the test.

<EOM>: Send End of Message: When the EOM key is pushed, three bursts of FSK for EOM are transmitted.

<SEND STORED ALERT>: Forward a received alert: Pressing the key once forwards the complete stored message.

<SEND COMPOSED HEADER>: Originate an alert: This key, when pressed, acts like the <RMT> key but sends the composed header rather than RMT. After the three FSK bursts and the attention tone, the unit again outputs audio, either from a studio mike or pre-recorded. Again, when the audio message is finished, EOM must be pressed to complete the test. See <COMPOSE HEADER>, below, for this procedure.

In broadcast mode, the operator password must be entered in order to use **<RMT>** and **<SEND COMPOSED HEADER>** from the keypad. If a remote momentary switch in the control room is used, the password is not required. In cable mode, the password is also required for **<RWT>**.

Second Row

<FUNCTION>: This key is used during keypad programming functions.

<DELETE AUDIO>: This option enables you to send an alert without the pre-recorded audio, by sending it either without any audio or by sending it with audio generated in your own studio. This function only works in Broadcast mode, and is not applicable to TV/CG mode.

<MANUAL/AUTOMATIC>: This key toggles between Manual and Automatic operation when in Broadcast mode. This is shown in the lower right-hand corner of the display. If the unit is in normal cable mode, then the screen reads Cable and the unit is in automatic mode. If the unit is in SSC mode, then the screen reads Cable SSC and the unit is in automatic. If the unit is in TV/CG mode, then the screen reads TV/CG and the unit is in automatic.

<COMPOSE HEADER>: This allows the operator to prepare an alert for transmission or to practice with message origination. This alert will be an originated alert, as opposed to a forwarded alert. When this key is pressed, the list of available headers appears on the display.

<DISPLAY COMPOSED HEADER>: This allows the operator to check the message that was prepared for origination. By using the <V>, the complete message can be edited and any necessary corrections can be made prior to transmission. This entire message should also appear on the printed log when sent.

Third Row

<MENU>: This key requires the technician password for entry to the Utility Menu, and is described in the next section.

<SELECT INPUT>: This key selects the audio from one of the input channels and routes this audio to the balanced 600-ohm selected AUDIO OUT (terminals 13 & 14), as well as the 8-ohm selected audio out (terminals 15 & 16). This selected audio will also be heard on the front panel speaker.

<RECORD SPEECH>: This is for recording a voice message in the two-minute digital audio storage chips. Pressing this key automatically erases the audio currently in the two-minute audio storage.

<PLAY-BACK SPEECH>: This plays back the last recorded voice message.

<DISPLAY RECEIVED HEADER>: This allows the operator to check a received message before forwarding it. By using the <V>, the whole received header can be read and its urgency gauged. This entire message should also have appeared on the printed log as it appears on

the display.

Fourth Row

The bottom-row keys are used only in conjunction with other operations, and do not themselves initiate any operations.

<CLEAR>: This key is only used in a few instances, and will be prompted for when applicable.

<EXIT>: This key is always used for backing out of menu items and selections, reversing the selection process. It also has a few other uses for which the unit provides a prompt.

<V>: (Down Arrow) This is shown on the keypad as a heavy black arrow, pointing down. Both this and the <Λ> are used for both scrolling up/down or forward/backward through lists for selecting items, and also used to increase/decrease the digital pots that control certain programmed levels.

<Λ>: (Up Arrow) This is shown on the keypad as a heavy black arrow, pointing up. See <V>, above.

<ENTER>: The use of this key is similar to the corresponding key on the computer keyboard.

Additional Details on Above Functions

Entering passwords: A number of functions require entering a password. When this is so, you'll see this screen:

Figure V.3

```
    ---        ENTER 4 DIGIT PASSWORD        ---
```

As you enter the password, black squares appear on the screen to represent the numbers. If entered incorrectly, you reach this screen:

Figure V.4

```
        The password just entered is incorrect.
        Please re-enter the password correctly.
        PRESS EXIT to EXIT
```

<Delete Audio>: When you select this key, the following screen will appear:

Figure V.5

```
         Select How Deleted Audio to be Sent
        1 - Send without audio & attention tones
        2 - Speak from console & send manual EOM
        EXIT - Exit without deleting audio
```

This function only works in **Broadcast** mode, and is not applicable to **TV/CG** mode. If you

select **<1>**, you will send only the FSK Header and EOM tones. If you select **<2>**, you will send the FSK Header and the ATT tone, followed by a prompt on the display for you to feed through your audio message from the studio microphone,, after which you must press **<EOM>** to end the message.

<Compose Header>: When this is selected, this screen first comes up:

Figure V.6

```
---           SELECT EVENT CODE          ---
1 TORNADO WATCH
2 TORNADO WARNING
3 SEVERE THUNDERSTORM WATCH
```

This initial screen shows only the first three event codes. Using the **<V>** to scroll down will bring up the rest of the approved event codes on the screen. Press **<ENTER>** when on the desired event, which will cause an arrowhead (**>**) to appear next to the selected event, then **<EXIT>**. You will come to a county selection screen, of which this is an example:

Figure V.7

```
Athens          OH    Fairfield     OH
Hocking         OH    Morgan        OH
Perry           OH    Entire State  OH
```

If you have more counties than will fit on one screen, simply use the **<V>** to scroll down, and press **<ENTER>** when on the desired county selection(s). An arrowhead (**>**) will appear next to the selected counties. Then, pressing **<EXIT>**, you reach this screen:

Figure V.8

```
---   SELECT VALID TIME, ENTER, EXIT   ---
>0:15     0:30      0:45      1:00      1:30
 2:00     2:30      3:00      3:30      4:00
 4:30     5:00      5:30      6:00
```

This is set to a default of fifteen minutes. If you wish to change it, use the arrows, then **<ENTER>**. When you **<EXIT>**, you are ready to send the composed header.

<Display Composed Header>: This key displays the latest composed header; use the **<V>** to scroll to the bottom of the message. This function enables the operator to see if editing of the header code is necessary prior to its sending:

Figure V.9

```
****** EAS ALERT SENT BY EAS-1/CG  ******
     SENT        4/18/2000 9:54:58 EDT
     A BROADCAST STATION
```

```
     HAS ISSUED A
     TORNADO WARNING
     FOR THE FOLLOWING COUNTIES:
     Athens          OH
     UNTIL 10:09 EDT
     JULIAN DATE: 109 TIME: 9:54 EDT
     ORIGINATING STATION: WOUB/FM
     RECORDED VOICE MSG      0.0 Seconds
```

<Select Input>: This is used to monitor audio inputs through the front panel speaker. By using the **<V>** to move the cursor and pressing the **<ENTER>** key, the audio on each input can be monitored on the **EAS-1/CG** front panel speaker. It uses this screen:

Figure V.10

```
     ---          SELECT  CHANNEL  MENU          ---
     ENTER  TO  SELECT,  EXIT  TO  EXIT
     >CH1          CH2          CH3          CH4
      CH5          CH6
```

<Record Speech>: This allows direct recording of speech into the two-minute digital audio storage chips from the channel six input, which may either be a remote audio input or a locally-generated studio mic (through an amplifier), or directly from the front panel, using the front panel speaker as a microphone. You will see this screen:

Figure V.11

```
     SCAN:3ACTIVE:123     7/08/00 16:06:21EDT
     DECODER: Scanning V 20.2
     ENCODER: Recording Voice Message
                         TV/CG
```

To stop recording, press **<EXIT>**.

<Play-Back Speech>: When playing back, this screen appears:

Figure V.12

```
     SCAN:3ACTIVE:123     7/08/00 16:06:21EDT
     DECODER: Scanning V 20.2
     ENCODER: Playing Recorded Voice Message
                         TV/CG
```

Pressing **<EXIT>** at any time aborts the playback without dumping the stored audio.

<Display Received Header>: This is similar to the display composed header, but shows the

latest message received by your unit, and a typical display is as follows:

Figure V.13

```
      **** EAS ALERT RECEIVED BY EAS-1/CG    ****
      CH# 3 RECEIVED  4/18/2000  9:54:58 EDT
      A BROADCAST STATION
      HAS ISSUED A
      TORNADO WARNING
      FOR THE FOLLOWING COUNTIES:
      Athens         OH
      UNTIL 10:09 EDT
      JULIAN DATE: 109 TIME: 9:54 EDT
      ORIGINATING STATION: WOUB/FM
      RECORDED VOICE MSG     12.5 Seconds
      ALERT MESSAGE STORED
```

Again, use the **<\/>** to scroll down through the message. Note that the last line states **ALERT MESSAGE STORED**. If the alert message was not stored, you'll see one of these two messages:

Figure V.14

```
      NOT STORED - DUPLICATE HEADER
```

or:

Figure V.15

```
      NOT STORED - NOT PRESELECTED HEADER
```

The first indicates that the same message was received twice, so that the second time it was not stored. This happens when all parameters match: the same header, counties, valid time, and time stamp for origination (in the above example, it's 9:54). The second indicates that the event is not listed in the preselected event table or that none of the counties programmed into the unit for the viewing area are included in the header of the incoming message. This also appears if the incoming message was an RWT, but your unit is set not to forward it.

Section VI: Sending an Alert

Originating an Alert

To originate an emergency message or test from your station, start by pressing **the <COMPOSE HEADER>** key on the keypad. Press the **<\/>** or **<\/\>** arrow to move the cursor down or up. Press the **<\/>** continuously to scroll through the events. Only four appear on each screen, but as you scroll down, you'll go through progressive screens until you've seen all the events. When the cursor is adjacent to the event code that you want in the header, press **<ENTER>** and an arrowhead (**>**) will appear next to your selection. Press **<EXIT>** to continue.

You now will see the preselected counties in your listening area. Press the**<\/>** or <\/\> arrow to move the cursor down or up. Press the **<\/>** continuously to scroll through the counties. Press **<ENTER>** to select each county desired for the alert; you may select any number of the counties listed. When each is selected, an arrowhead (**>**) will come on next to that county. If you wish to de-select a county, press **<ENTER>** again. Press the **<EXIT>** key to continue.

The next display will be the valid time for the event in the header code. Press the **<\/>** or <\/\>arrow to move the cursor down or up between the different valid time selections. After arriving at the time interval you want, press **<ENTER>**, and an arrowhead will appear. Press **<EXIT>** again to continue.

The display will now have returned to the normal operating mode. The encoder is now ready to send the FSK header code. Before sending the composed header, you might want to edit the message you have created. If you press the **<DISPLAY COMPOSED HEADER>** key and press the **<\/>,** you can read the message you're about to send. Press **<EXIT>** again to return to normal operating mode.

If you go to the console and through a momentary remote contact closure you can duplicate the "send composed header" key on the front panel keypad. Press the send composed header key and you send the FSK header and the two tone attention signal. Upon completion of the attention signal, give the audio emergency message from the console microphone. Upon completion of the emergency message send the end of message by pressing the **<EOM>** key. If you forget to send the **EOM** message, the EAS-1 will automatically send the EOM after two minutes.

If you want to send the composed header from the keypad when you press the send composed header key the display will ask you for the 4-digit code. We will ask on the order form what 4-digit code you would want to use. The printout of the setup information will show you what the 4-digit code is when the unit arrives. When you press the key for the last digit of the 4-digit code the FSK code and the two-tone attention signal will be transmitted. You must give the audio message from the console microphone and then send the **EOM**.

Forwarding an Alert

If you unit is set to **TV/CG** or **Cable SSC**, all alerts will automatically forward immediately. This section applies ONLY if the unit is being operated in **Broadcast** mode.

If in **Broadcast Manual** mode, then all alerts must be manually sent if you wish to forward

them. In **Broadcast Automatic** mode, they will be sent according to the priority set for them, but you may send them manually any time within the priority time period. In fact, this is why the priority time period exists: for you to select an appropriate time to send the alert manually to minimize program interruption. The message forwards automatically at the end of the priority time ONLY if you have not already manually sent it. Of course, if the event is set to **Send Now**, then it will automatically forward as soon as it comes in.

Manual forwarding is very easy: Just press the **<SEND STORED ALERT>** key on the top row of the keypad. Any active message in the buffer will be automatically sent, with no need for a password.

If a received message will not forward when you do this, it's due to one of the following reasons:

- The valid time has expired
- It's a weekly test, and your unit is set to not forward weekly tests
- Your clock has the wrong time or date
- None of the preselected counties for the event in your unit match any of the counties in the alert.

Section VII: EAS-1/CG On-Screen Utility Menu

Press the **<MENU>** key on the keypad of your EAS-1/CG unit. You will be prompted for a four-digit password. On the keypad, enter the four digits of your technician passcode. The utility menu will then appear on the display, showing menu items numbered 1 through 6. If you press the **<\/>**, you will scroll down through the items, then you will go to a second screen, with menu items 7 through 12, then a third screen with 13 through 18.

First EAS Utility Menu display screen:

Figure VII.1

```
     UTILITY MENU - PRESS EXIT
     1 SET DIAGNOSTICS    2 SET MODULATION
     3 SET INPUT LEVELS  4 SET SCANNING
     5 SET ATT TIME       6 SET PANEL LEVEL
```

Second EAS Utility Menu display screen when in **Broadcast** mode:

Figure VII.2

```
     UTILITY MENU - PRESS EXIT
     7 SET LOGGING        8 PRINT SETUP DATA
     9 SET TIME/DATE     10 TOGGLE CG  ON
     11 TOGGLE SIGN OFF 12 TOGGLE ALRT ON
```

Second EAS Utility Menu display screen when in **Cable/Cable SSC/TV/CG** modes:

Figure VII.3

```
     UTILITY MENU - PRESS EXIT
     7 SET LOGGING        8 PRINT SETUP DATA
     9 SET TIME/DATE     10 FUTURE EXPANSION
     11 TOGGLE SIGN OFF 12 TOGGLE ALRT ON
```

Third EAS Utility Menu display screen:

Figure VII.4

```
     UTILITY MENU - PRESS EXIT
     13 RMT SETUP          14 CG/CABLE SETUP
```

```
     15 AUDIO REC/PLAYBK 16 PHONE  SETUP
     17 STATION SETUP    18 FUTURE EXPANSION
```

Most values that can be set through the Utility Menu can be printed out in a summary list through option 8, **PRINT SETUP DATA: FRONT PANEL SETUP**.

Section VIII: Using the EAS-1/CG Utility Menu

To select any utility menu option shown on the screens in figures VII.1 - VII.4, use the **<V>** to move the cursor to the desired parameter and press **<ENTER>**.

Option One: SET DIAGNOSTICS

When you select this option, this screen will appear:

Figure VIII.1

```
---   SELECT CHANNEL FOR DIAGNOSTICS   ---
ENTER TO SELECT, EXIT TO EXIT
>NONE        CHAN 1      CHAN 2      CHAN 3
CHAN 4       CHAN 5      CHAN 6
```

For normal operations, this should be selected to **NONE**. If you consistently have trouble receiving messages on one of the channels that you're scanning, use the **<V>** to move the cursor to that channel and press **<ENTER>**. The arrowhead will appear with the cursor and all the FSK data that you receive on that channel will be logged. If you fax us the logged data, we may be able to figure out what is wrong with the FSK-coded transmission on that channel.

Option Two: SET MODULATION

When you select this option, this screen will appear:

Figure VIII.2.0

```
---         MODULATION SETUP MENU      ---
ENTER TO SELECT, EXIT TO EXIT
>853 HZ LEVEL          960 HZ LEVEL
1562.5 HZ LEVEL       2083.3 HZ LEVEL
```

These are the four frequencies used in transmitting EAS FSK headers, ATT (attention) signal, and FSK EOM (end of message). Select any one of the four with the **<V>** and **<Λ>**, and press **<ENTER>**. You will see a screen like this:

Figure VIII.2.1

```
---853 HZ MODULATION SETUP PROGRAM---
#####################
^ MIN |-----|-----| MAX ^ RELATIVE LEVEL
```

```
< DOWN ARROW    UP ARROW >  SETTING:    8
```

Note that there is a numerical setting shown in the lower-right-hand corner which represents the digital pot setting, from 1 to 100. Setting 8 is the default for 853 Hz and 960 Hz. Setting 17 is the default for 1562.5 Hz and 2083.3 Hz. The second line also functions as a loudness (VU) meter, with black squares showing the output level. The meter scale goes from the left caret (upward arrow) to the right caret. Adjust your modulation accordingly, using the <\/> and </\> keys. The best way to adjust the tone modulation of your transmitter is with a modulation meter. Set the 853 Hz and 960 Hz modulation to forty percent (40%) for each tone and the FSK 1562.5 Hz and 2083.3 Hz tone modulation to eighty percent (80%) for each tone, measuring from the program line out terminals. Below is a screen for a normally-operating unit:

Figure VIII.2.2

```
---2083.3 HZ MODULATION SETUP PROGRAM---
################
^ MIN |-----|-----| MAX ^ RELATIVE LEVEL
< DOWN ARROW    UP ARROW >  SETTING:    52
```

Option Three: SET INPUT LEVELS

This is the most important adjustment to be made on the EAS unit. If the input levels are set too low, the FSK will not be detected, and if set too high, the dual-tone attention signal (853/960 Hz) that must precede any audio message will not be decoded and the audio message that follows will not be recorded. When you select this option, this screen will appear:

Figure VII.3.0

```
---      INPUT LEVEL SETUP MENU      ---
ENTER TO SELECT, EXIT TO EXIT
>CHAN 1    CHAN 2    CHAN 3    CHAN 4
CHAN 5    CHAN 6
```

Select any channel by using the **<\/>** and **</\>**to position the cursor at that channel. Levels for all six channels may be set here at any time, but an active audio connection is necessary for proper calibration. By pressing **<ENTER>** with the cursor on **CHAN 1**, the following screen will appear:

Figure VII.3.1

```
---CHANNEL 1 LEVEL SETUP PROGRAM---
```

```
        ########################
        ^ MIN |-----|-----| MAX ^ RELATIVE LEVEL
        < DOWN ARROW    UP ARROW >  SETTING:    8
```

This option functions identically to the **SET MODULATION**. Note that there is a numerical setting in the lower-right-hand corner, which again represents the digital pot setting from 1 to 100. Setting 5 is the default for all channels except channel 3. Setting 5 is also the lowest value that may be set in order to prevent distortion of the input audio. Setting 14 is the default for channel 3 as the NWS channel. The second line also functions as a loudness (VU) meter, with black squares showing the input level. The meter scale goes from the left caret (^) to the right caret. Optimal levels should produce modulation peaks between the right-hand caret (^) and the "**A**" or "**X**" of **MAX**. Adjust your input levels accordingly, using the **<V>** and **</\>** to turn the setting up or down. It's okay if the occasional modulation peak hits the right-hand caret up to once every ten seconds or so.

Below is a screen for a normally-operating unit:

Figure VIII.3.2

```
        ---CHANNEL 2       LEVEL  SETUP  PROGRAM---
        ###################
        ^ MIN |-----|-----| MAX ^ RELATIVE LEVEL
        < DOWN ARROW    UP ARROW >  SETTING:    12
```

Option Four: SET SCANNING

When you select this option, some variation of these screens will appear:

Figure VIII.4.0

```
        ---    INPUT SCAN & NWS SETUP MENU    ---
        ENTER,4 TO SELECT,CLEAR NWS,EXIT TO EXIT
        >CHAN 1    >CHAN 2    CHAN 3    CHAN 4
        CHAN 5    CHAN 6    NWS - NO SELECTION
```

or:

Figure VIII.4.1

```
        ---    INPUT SCAN & NWS SETUP MENU    ---
        ENTER,4 TO SELECT,CLEAR NWS,EXIT TO EXIT
        >CHAN 1    >CHAN 2    >CHAN 3    >CHAN 4
        >CHAN 5    >CHAN 6    NWS - CHAN 3
```

```


```

NOTE: Read this carefully; many people find this option confusing. Note that the first example only has two channels selected, with no selection for NWS, National Weather Service. The second example has all six channels selected, with the National Weather Service on channel 3. Only consecutive channels starting with input channel number one may be selected: that is, if you want to use four channels, then normally you would select CHAN 4, which would turn on channels 1, 2, 3, and 4. You cannot individually select, for instance, channels 1, 3, 4, and 6. You can, however, select all six channels, as shown in the second example, and use whichever you wish.

To select any particular number of channels, position the cursor in front of the channel corresponding to that number and press **<ENTER>**, and all channels up to and including the selected channel will be selected. You may always select a higher number of channels.

To select a channel for receiving a National Weather Service signal, position the cursor on any previously selected station, and press **<4>** on the keypad. To remove the **NWS** selection, either choose another channel, which will turn off NWS for the previous channel, or position the cursor on the NWS channel and press **<CLEAR>** on the keypad. This will result in the condition shown on the first screen, which reads **NWS - NO SELECTION**.

Normally, Channel 1 is used for the local primary, Channel 2 for a local secondary, and Channel 3 for the National Weather Service (NOAA). If you wish to record voice audio with a studio microphone, it must be connected to Channel 6 through an amplifier.

Option Five: SET ATT TIME

When you select this option, this screen will appear.

Figure VIII.5

```
    ---     SET ATTENTION TONE DURATION    ---
    ARROW TO SET, EXIT TO EXIT
    8    SECONDS


```

FCC Part 11 rules require a minimum 8-second attention tone if you will be transmitting an audio message. If your primary or secondary is sending a shorter tone or no tone when the alert contains an audio message, you must contact them to remind them of the attention tone requirement. Use the **<\/>** and **</\>** to increase or decrease the time. Only EAS units operating in the area of nuclear power plants may need to send the attention signal for longer than eight seconds, which is the programming default.

Option Six: SET PANEL LEVEL

When you select this option, this screen will appear:

Figure VIII.6

```
    ---         SET PANEL SPEAKER LEVEL       ---
```

```
              ARROW TO SET, EXIT TO EXIT
              LOUD                      MODERATE
              SOFT                    > QUIET
```

This regulates the volume of the speaker on the EAS-1/CG front panel. QUIET is the quietest audio setting, and is the programming default. Use the <\/\> and <\V\> to turn the volume up or down. Avoid setting the speaker level on LOUD. The level should be set as low as possible to still meet operational requirements.

Option Seven: SET LOGGING

When you select this option, this screen will appear:

Figure VIII.7

```
       ---              SET LOGGING            ---
       ARROW TO SET, EXIT TO EXIT
       NONE                  > PRINTER
       PC SERIAL PORT
```

This option determines the routing of logging messages. The default is **PRINTER**, and is the option almost always used in normal operation. **PRINTER** must be selected in order to do any printing from the EAS unit, either printing the log or menu option 8, **PRINT SETUP**. If **PRINTER** is not selected, the display, in normal operation, will read, on the third line, **PRINTER NOT CONNECTED**. The output is, of course, directed to the **PARALLEL PRINTER** port on the rear of the EAS-1/CG, which mates to a normal printer cable. If this option is set to **PC SERIAL PORT**, then I/O is directed through the **P.C. PORT** (female RS-232 DB9) on the rear of the EAS-1/CG. The **PC SERIAL PORT** selection is necessary to download either the **EASETUP** programming or the time from a computer, and is also used to log to a computer rather than a printer.

To select any of the three options, use the **<\V\>** and **<\/\>** to position the cursor in front of the option. You must then press **<ENTER>** to select the option.

Option Eight: PRINT SETUP

BEFORE selecting this option, be sure to go to menu option 7, set logging, and select the printer. Then return to option number 8 and press **<ENTER>**. When you select this option, this screen will appear:

Figure VIII.8.0

```
       ---         PRINT SETUP PARAMETERS       ---
       EXIT KEY TO EXIT, SELECT 1 OR 2
       1 PRINT DOWNLOADED  SETUP  INFORMATION
       2 PRINT FRONT PANEL SETUP INFORMATION
```

```


```

By selecting option one by pressing **<1>** on the EAS keypad (after pressing **<ENTER>** for option 8), the printer will print out the EAS-1/CG programming on two pages.

Select option two by pressing **<2>** on the keypad. This will print out the information selected by the EAS menu items, including the input channel levels and modulation levels.

Whenever the EAS unit is sending packets of data to the printer, it will display this screen:

Figure VIII.8.1

```
         Printing Setup, Please wait...
```

Option Nine: SET TIME/DATE

When you select this option, this screen will appear:

Figure VIII.9

```
   ---        TIME/DATE SETUP MENU       ---
ENT - POS. CURSOR, ARROW - SET,EXIT-EXIT
   7/08/1999 16:47:33 UCT
   7/08/1999 20:47:33 EDT
```

Pressing **<ENTER>** on the keypad will move the cursor from the month, then the day, then year, then hour, then minutes, then seconds. Use the **</\>** to increase the number, and the **<\/>** to decrease it. It is important to be sure that the clock is never more than two minutes from the correct time. Clocks that are in error may result in an FCC citation. Note: Trying to set the time to the exact second is confusing because there is a one-second delay between pressing the **<ENTER>** key and the display update, while, at the same time, the clock is changing every second.

Option Ten: TOGGLE CG ON/OFF

This option is not available in **Cable SSC** or **TV/CG** modes. In broadcast mode, it works identically to menu items eleven and twelve, and toggles the RS-232 DB9 female serial port (COM 4) labeled **CHARACTER GENERATOR** on the rear of the unit on and off to communicate with an external character generator to generate a crawl on television screens. The menu screen that includes option ten may show either one of the following three legends for the option:

Figure VII10.0a

```


```

```
        10  TOGGLE CG   ON
```

or:

```
        10  TOGGLE CG   OFF
```

or:

```
        10  NON-CABLE OPTION
```

If the first, **TOGGLE CG ON**, is showing, then the character generator is turned off, and selecting this option by pressing **<ENTER>** will result in this screen, and the generator will then be turned on:

Figure VIII.10.1

```
    CHARACTER GENERATOR IS NOW ON
    PRESS EXIT TO EXIT
```

If the second, **TOGGLE CG OFF**, is showing, then the character generator is turned on, and selecting this option by pressing **<ENTER>** will result in this screen, with the generator turned off:

Figure VIII.10.2

```
    CHARACTER GENERATOR IS NOW OFF
    PRESS EXIT TO EXIT
```

This option is specifically configured to use the VDS (Video Data Systems) brand character generator. This option is not available in the **Cable SSC** or **TV/CG** modes because these utilize the built-in SCG-1 character generator and cannot at the same time drive a remote character generator. In this case, this menu item reads **10 NON-CABLE OPTION**.

Option Eleven: TOGGLE SIGN ON/OFF

This option works identically to menu items ten and twelve, and toggles an external sign board on and off. The menu screen that includes option eleven may show either one of the following legends for the option:

Figure VIII.11.0a

```
              11  TOGGLE  SIGN  ON
```

or

Figure VIII.11.0a

```
              11  TOGGLE  SIGN  OFF
```

If the first, **TOGGLE SIGN ON**, is showing, then the sign board is turned off, and selecting this option by pressing **<ENTER>** will result in this screen, with the sign board turned on:

Figure VIII.11.1

```
      SIGN  BOARD  IS  NOW   ON
      PRESS  EXIT  TO  EXIT
```

If the second, **TOGGLE SIGN OFF**, is showing, then the sign board is turned on, and selecting this option by pressing **<ENTER>** will result in this screen, with the sign board turned off:

Figure VIII.11.2

```
      SIGN  BOARD  IS  NOW    OFF
      PRESS  EXIT  TO  EXIT
```

Option Twelve: TOGGLE ALRT ON/OFF

This option toggles the alert relay momentarily on when operating in **Manual** mode. This relay is connected to terminals 19-22 on the terminal plug on the rear of the EAS-1/CG unit. This option works identically to menu items ten and eleven. The menu screen that includes option twelve may show either one of the following legends for the option:

Figure VIII.12.0a

```
              12  TOGGLE  ALRT  ON
```

or

Figure VIII.12.0a

```
              11  TOGGLE  ALRT  OFF
```

If the first, **TOGGLE ALRT ON**, is showing, then the alert relay in **Manual** mode is turned off, and selecting this option by pressing **<ENTER>** will result in this screen, with the alert relay then turned on:

```
     ALERT RELAY IN MANUAL IS NOW ON
     PRESS EXIT TO EXIT
```

If the second, **TOGGLE SIGN OFF**, is showing, then the sign board is turned on, and selecting this option by pressing **<ENTER>** will result in this screen, with the sign board turned off:

Figure VIII.12.2

```
     ALERT RELAY IN MANUAL IS NOW OFF
     PRESS EXIT TO EXIT
```

Option Thirteen: RMT SETUP

This option is for controlling aspects of the Required Monthly Test from the keypad. Local primary and secondary stations should transmit the monthly test with a one-hour valid time. The first screen below is seen first:

Figure VII.13.0

```
     ---          SETUP RMT OPTIONS         ---
     EXIT KEY TO EXIT, SELECT 1 OR 2
     1 SET RMT VALID TIME
     2 SET RMT PRIORITY
```

Press either **<1>** or **<2>** on the keypad to select the option desired. The valid time is the time period for which the RMT is operable. For instance, if the time selected is one hour, then the RMT may be forwarded at any time within the hour after it is originated. However, this time is valid only for RMT messages that you initiate; RMT messages that you receive already have the valid time pre-set. The RMT priority is for selecting the EAS automatic forwarding when the unit is in **AUTOMATIC**. The RMT message cannot be delayed longer than fifteen minutes when operating in Automatic mode.

As can be seen from the **VALID TIME** screen below, the time may be set anywhere from fifteen minutes to six hours. The longer times may be desirable when there are scheduling difficulties. If you are a state primary, a local primary 1 (LP1), or a local primary 2 (LP2), and are responsible for originating RMT events, then a valid time of one hour is required to ensure that the message is still valid by the time that it has been relayed between stations.

Figure VIII.13.1

```
     ---   SELECT VALID TIME, ENTER, EXIT   ---
```

```
    >0:15      0:30      0:45      1:00      1:30
    2:00      2:30      3:00      3:30      4:00
    4:30      5:00      5:30      6:00
```

This next option only applies to RMT messages that are received by EAS units in **AUTOMATIC** mode. The **SEND NOW** option means that, when the RMT is received at your station, the EAS unit will automatically and immediately interrupt programming to relay the test. The other options offer a delay to automatic program interrupt. You may manually relay the test any time during the priority time period by pressing the red **<SEND STORED ALERT>** key. This gives you the option of forwarding the test at a more opportune time.

Figure VIII.13.2

```
    ---         SELECT RMT PRIORITY       ---
    ENTER TO SELECT, EXIT TO EXIT
    >SEND IN 15 MIN      SEND IN 10 MIN
    SEND IN  5 MIN       SEND NOW
```

Option Fourteen: CABLE SETUP

See Section IX.

Option Fifteen: AUDIO REC/PLYBCK

This option produces this screen:

Figure VIII.15.0

```
    ---         AUDIO RECORD/PLAYBACK       ---
    1 REC/PLAYBACK CANNED (1 MINUTE) AUDIO
    2 REC/PLAYBACK  ALERT (2 MINUTE) AUDIO
    3 TOGGLE SOURCE - SOURCE IS NOW SPEAKER
```

Option number 3, **TOGGLE SOURCE**, allows you to choose between using the panel speaker as a source or using input channel six as a source. Choosing the speaker allows you to use the speaker as a microphone while recording. To do this, speak clearly about eight inches away from the speaker. If you choose input channel six, option 3 on the display will read **3 TOGGLE SOURCE - SOURCE IS NOW CHAN 6**. In this case, it can be receiving a variety of audio inputs, including a studio microphone routed through an amplifier.

Selecting option number 1, **REC/PLAYBACK CANNED (1 MINUTE) AUDIO**, will bring up this screen:

Figure VIII.15.1

```
        ---CANNED AUDIO REC/PLAYBCK - SPEAKER---
        RECORD SPEECH KEY TO RECORD
        PLAYBACK SPEECH KEY TO PLAYBACK
        EXIT KEY TO EXIT
```

When ready to record, press the **<RECORD SPEECH>** key on the EAS-1/CG keypad. You will then see this screen:

Figure VIII.15.2

```
        ---CANNED AUDIO REC/PLAYBCK - SPEAKER---
        EXIT KEY TO STOP CURRENT FUNCTION
        ACTION:  Recording Voice Message
```

Press **<EXIT>** when done or when you want to stop. To play back, allowing you to check the recorded audio for accuracy, press the **<PLAY-BACK SPEECH>** key, with this screen resulting:

Figure VIII.15.3

```
        ---CANNED AUDIO REC/PLAYBCK - SPEAKER---
        EXIT KEY TO STOP CURRENT FUNCTION
        ACTION:  Playing Recorded Voice Message
```

Option number 2, **REC/PLAYBACK ALERT (2 MINUTE) AUDIO**, works exactly the same. The difference is that the canned audio is a maximum one-minute message and is the message that will be heard, if you're using the **TUNE TO** option for channels in the SSC setup, to tell viewers to tune to the EAS channel. The alert audio is a two-minute maximum, and is the emergency audio message that will be broadcast during an actual alert.

Option Sixteen: PHONE SETUP

This option only applies to EAS-1/CG Encoder/Decoder units that have a telephone interface board installed. If you are in doubt as to whether one is installed, look at the back of the unit for a phone jack. A jack will be present if and only if a board is installed (units have a cutout for the jack, even if not installed).

When you select this option, a screen will appear indicating, on the third line, that **PHONE SUPPORT IS ON/OFF**:

Figure VIII.16.0

```
        ---        SETUP PHONE SUPPORT        ---
        ARROW TO SET, EXIT TO EXIT
```

```
       > PHONE  SUPPORT  IS  ON  ,  ENTER  TO  CHANGE
   PHONE  PARAMETERS,  ENTER  TO  CHANGE
```

Pressing **<ENTER>** on either one of these screens will toggle is to the other screen--in other words, if phone support is off, pressing **<ENTER>** will turn it on, and vice versa. If you use the **<>** to go to the phone parameters option and press enter, you will see this screen:

Figure VIII.16.1

```
   ---          SET  PHONE  PARAMETERS       ---
   EXIT  KEY  TO  EXIT,  SELECT  1  OR  2
   1 #  RINGS  TO  ANSWER      1 2>3 4 5 6 7 8 9
   2 #  SECONDS  TO  HANGUP   10 20>30 40 50 60
```

Three rings and thirty seconds, as shown, are the defaults. This means that the phone board will answer after precisely three rings, and that if no signal comes over the line for thirty seconds, it will automatically hang up. To change either parameter, press **<1>** or **<2>**, then use the arrow keys. For using the phone connection, see the separate section at the end of this document.

Option Seventeen: STATION SETUP

See [Section X](#).

Option Eighteen: FUTURE EXPANSION

No programming has yet been installed for this menu item.

Section IX: Cable Setup

Cable Setup is option number 14 in the Utility Menu. It's explained separately here because of its extensive documentation. This option will produce one of several screens. If in broadcast mode, the following screen will appear:

Figure IX.0.1

```
    ---           SETUP CABLE SUPPORT        ---
      ARROW TO SET, EXIT TO EXIT
      _ CABLE SUPPORT IS OFF, ENTER TO CHANGE
   RE-SEND INCOMING RWT, ENTER TO CHANGE
```

If in normal cable mode, the following screen will appear:

Figure IX.0.2

```
    ---           SETUP CABLE SUPPORT        ---
      ARROW TO SET, EXIT TO EXIT
      _ CABLE SUPPORT IS PSC, ENTER TO CHANGE
   RE-SEND INCOMING RWT, ENTER TO CHANGE
```

The second option here, **RE-SEND/IGNORE INCOMING RWT**, is only applicable if cable mode is turned on. In cable mode, this means that the EAS-1/CG will or will not forward the code for the incoming RWT to the auxiliary computer, but does not automatically cause the signal to be re-sent over the outgoing line, although this is possible at the operator's discretion. If you wish to turn off the automatic RWT forwarding, press the **<V>** to move the cursor down to the bottom line and press **<ENTER>**. The screen will then appear like this:

Figure IX.0.3

```
    ---           SETUP CABLE SUPPORT        ---
      ARROW TO SET, EXIT TO EXIT
    CABLE SUPPORT IS PSC, ENTER TO CHANGE
      _ IGNORE INCOMING RWT, ENTER TO CHANGE
```

Of course, in broadcast mode, the RWT is never re-sent. If either of the two preceding PSC screens (Figures V.0.2 and IX.0.3) is showing, pressing **<ENTER>** will bring you to this screen:

Figure IX.0.4

```
    ---           SETUP CABLE SUPPORT        ---
```

```
            ARROW TO SET, EXIT TO EXIT
      CABLE SUPPORT IS SSC, ENTER TO CHANGE
            _ CABLE/CG SETUP MENU , ENTER TO CHANGE
```

If the SSC setup is selected, the following screen will appear:

Figure IX.0.5

```
      ---        SETUP SSC CABLE SUPPORT       ---
      1 CHAR. GEN. SETUP   2 SYSTEM SETUP
      3 SYSTEM TESTS        4 FUTURE
      5 FUTURE
```

Select the first option by pressing **<1>** on the keypad, and you next see this screen:

Figure IX.0.6

```
      ---        CHARACTER GENERATOR SETUP      ---
      1 CRAWL REPLAY INT. 2 CRAWLS/REPEAT
      3 TROUBLE SLIDE       4 CG CHAR/BKG COLORS
      5 CRAWL ON LINE       6 FUTURE
```

1. Crawl Replay Interval

Again, select the first option here by pressing **<1>** to reach this screen:

Figure IX.1.1

```
      ---   CRAWL REPLAY INTERVAL  (MINUTES   ---
      ARROW TO SET, EXIT TO EXIT
      >1    2    3    4    5    6    7    8    9    10
   11   12   13   14   15   NONE
```

To set, use the **<\/>** and **</\>** to position the cursor, then press **<ENTER>**. This will set the time interval between sets of crawls. Suppose you have three crawls per repeat selected, and you select an interval of four minutes. There will be three continuous crawls, followed by a four-minute pause, followed by another three crawls, and so forth, until the valid time of the alert expires.

2. Crawls per Repeat

Selecting option 2, **CRAWLS/REPEAT**, in the SCG-1 setup menu results in this screen:

Figure IX.1.2.0

```
---              CRAWL REPEAT              ---
1 CRAWL REPEAT, FULL SYSTEM ACCESS
2 CRAWL REPEAT, EAS CHANNEL
```

This allows y you to select the number of continuous crawls that will repeat for each set. For instance, if you select five crawls, then the alert message will crawl five consecutive times without a pause, then there will be a break, set by the previous menu option, after which there will again be five consecutive and continuous crawls, and so forth for the duration of the valid time of the alert. The first option sets the number of crawls per set for all channels other than a dedicated EAS channel. The second option sets the number of crawls for the EAS channel only. The default value for both is 3. The screens for these follow:

Figure IX.1.2.1

```
--- CRAWL REPEAT, FULL SYSTEM ACCESS ---
ARROW TO SET, EXIT TO EXIT
1    2 >3   4    5    6    7    8    9
```

Figure IX.1.2.2

```
---       CRAWL REPEAT, EAS CHANNEL       ---
ARROW TO SET, EXIT TO EXIT
1    2  >3   4    5    6    7    8    9
```

3. Trouble Slide

Option three under this menu, **TROUBLE SLIDE**, has this screen:

Figure IX.1.3.0

```
---              TROUBLE SLIDE              ---
ARROW TO SET, EXIT TO EXIT
>TROUBLE SLIDE OFF    TROUBLE SLIDE ON
```

If the trouble slide is on, then a background page will appear on your channel whenever normal programming is lost, and will notify of station problems. This trouble slide reads:

Figure IX.1.3.1

THIS CHANNEL

```
┌────────────────────────────────────────────┐
│            IS TEMPORARILY OFFLINE          │
│                                            │
│                   DUE TO                   │
│                                            │
│            TECHNICAL DIFFICULTIES          │
└────────────────────────────────────────────┘
```

4. Character/Background Colors

The fourth option, **CG CHAR/BKG COLORS**, brings up this screen:

Figure IX.1.4

```
   ---   CG CHARACTER/BACKGROUND COLORS   ---
   Black Characters, Gray  Background
   >White Characters, Black Background
   White Characters, Gray  Background
```

The default value for this is the second selection, white characters on a black background. This gives maximum contrast.

5. Crawl on Line

The fifth option is **CRAWL ON LINE**:

Figure IX.1.5

```
   ---              CRAWL ON LINE              ---
   ARROW TO SET, EXIT TO EXIT
   _1 >2   3   4   5   6   7   8   9   10
   ‾11  12  13  14
```

This allows you to select where on the screen the crawl line will appear. The screen is divided into fourteen lines, with number 1 at the top and 14 at the bottom. However, if the alert background is selected (see below, in System Setup: 5. EAS Background), the crawl lines will be shifted. Lines 4 and 5 will shift to line 1.

System Setup Menu

The second SSC setup menu is this:

Figure IX.2.0

```
   ---            SETUP SSC SYSTEM           ---
   1 DSPLY NON-REQ EVT 2 ENTER SYSTEM NAME
   3 EAS CHANNEL NO.   4 WEEKLY TEST SETUP
```

```
          5 EAS CHAN BACKGND   6 RELAY MAPPING
```

1. Display Non-Required Events

Selecting the first option, **DSPLY NON-REQ EVT** (Display Non-Required Events) brings up this screen:

Figure IX.2.1

```
          ---    DISPLAY NON-REQUIRED EVENTS    ---
          ARROW TO SET, EXIT TO EXIT
          >On All Channels      On EAS Channel Only
     TUNE TO Msg on All Channels
```

This is for a multichannel setup. The first selection, **On All Channels**, will crawl the alerts on every channel. The second selection, **On EAS Channel Only**, will not crawl on any channels other than the designated EAS channel. The third selection, **TUNE TO Msg on All Channels** ("tune-to" message on all channels), will result in a crawl on all channels other than the designated EAS channel that advises viewers to tune to the EAS channel for more information, with the full message on the designated EAS channel.

2. Enter System Name

The second option under this setup menu comes up with this screen:

Figure IX.2.2.0

```
          ---         ENTER SYSTEM NAME          ---
          EXIT TO KEEP OLD, ENTER TO ENTER NEW
          SYSTEM NAME:  YOUR LOCAL CABLE TV SYSTEM
```

If the name is already correct, press **<EXIT>**. If not, press **<ENTER>**, but be aware that this will erase the existing name. When you press **<ENTER>**, you'll see this screen:

Figure IX.2.2.1

```
          ---         ENTER SYSTEM NAME          ---
          PRESS ENTER WHEN DONE
          USE ALPHA KEYS THEN ENTER FOR NEW
          SYSTEM NAME: >_
```

Use the alphanumeric keys to enter the name. To do this, use the following table or your keypad. Characters allowed are the capitals of all the letters of the alphabet, the ten digits,

and the symbols "/" (forward slash), "[" (left bracket), "]" (right bracket), and "-" (hyphen), as well as a blank space. Each character requires pressing two keys on the keypad. The second key pressed for each character will be either 1, 2, 3, or 4. 1 thru 3 result in letters or symbols, while 4 always produces numbers. The first key is whichever key of the keypad carries the character that you want. For instance, the **<5>** key also has the letters MNO. To produce an N, you would press the **<5>** key, followed by the **<2>**key, because N is the second letter in the MNO sequence. To produce a 5, press the **<5>** then the **<4>**. For another example, to enter EAS-1, the key sequence would be: **2-2, 1-1, 7-1, 0-1, 1-4**. To produce a space, however, you only need to press the **<V>**. The **</\>** will backspace to erase errors.

Figure IX.2.2.2: Keypress Sequences

1\2	1	2	3	4
1	A	B	C	1
2	D	E	F	2
3	G	H	I	3
4	J	K	L	4
5	M	N	O	5
6	P	Q	R	6
7	S	T	U	7
8	V	W	X	8
9	Y	Z	/	9
0	-	[	]	0

Your system name may contain up to 26 characters. Once you've entered all the characters you want to enter, press **<ENTER>** to reach this screen:

Figure IX.2.2.3

```
---            ENTER SYSTEM NAME           ---
CLEAR TO ENTER AGAIN, EXIT TO EXIT
IS SYSTEM NAME ENTERED CORRECTLY?
SYSTEM NAME:   UNITED GALACTIC CAMELS
```

If you make an error, then the **<CLEAR>** key, under the **<7>** key, will return to the entry screen.

4. Weekly Test Setup

The fourth option, **WEEKLY TEST SETUP**, is a little different in **Cable SSC** than it is in **TV/CG**. This option in **Cable SSC** brings up this screen:

Figure IX.2.4.1

```
---            WEEKLY TEST SETUP           ---
1 IGNORE INCOMING RWT
```

```
+------------------------------------------------------------+
|                                                            |
|                                                            |
|                                                            |
+------------------------------------------------------------+
```

This may also read:

Figure IX.2.4.2

```
+------------------------------------------------------------+
|                                                            |
|   ---           WEEKLY TEST SETUP           ---            |
|   1 RE-SEND INCOMING RWT                                   |
|                                                            |
|                                                            |
+------------------------------------------------------------+
```

The setting specified on the screen is the active setting. Press **<EXIT>** to return to the TV setup screen. Press **<EXIT>** again to return to the **Setup TV/CG** Support screen.

SYSTEM TESTS

The third menu under **SETUP TV/CG SUPPORT** is **SYSTEM TESTS**. This does not set any variables, but allows testing. This selection shows this screen:

Figure IX.3.0

```
+------------------------------------------------------------+
|                                                            |
|   ---             SYSTEM TESTS              ---            |
|   1 CG TEST                                                |
|   2 CG WITH AUDIO TEST                                     |
|                                                            |
|                                                            |
+------------------------------------------------------------+
```

These both put a test crawl onto the monitor screen, reading

Figure IX.3.1

```
+------------------------------------------------------------+
|                                                            |
|        TESTING CHARACTER GENERATORS...                     |
|                                                            |
+------------------------------------------------------------+
```

The difference between them is that selection two also generates program-line audio for testing.

In both cases, the EAS display screen will look like this during the test output:

Figure IX.3.2

```
+------------------------------------------------------------+
|                                                            |
|   ---             SYSTEM TESTS              ---            |
|   TEST IN PROGRESS                                         |
|                                                            |
|                                                            |
+------------------------------------------------------------+
```

Press **<EXIT>** to exit each test. Press **<EXIT>** again to exit System Tests back to the Setup TV/CG Support screen.

Notice: *when exiting **SYSTEM TESTS**, there will be a delay, as there is when exiting the SSC setup main menu.*

Setup in the Cable SSC Mode

Although you probably will never use this mode, we're including the setup instructions for everything this unit is programmed for.

Crawls per Repeat

In the **Cable SSC** mode, this is a little different from the **TV/CG** mode--there are two options under this selection. The first option sets the number of crawls per set for all channels other than a dedicated EAS channel. The second option sets the number of crawls for the EAS channel only.

SETUP SSC SYSTEM

The second SSC setup menu is this:

Figure IX.4.1.0

```
    ---          SETUP SSC SYSTEM          ---
    1 DSPLY NON-REQ EVT 2 ENTER SYSTEM NAME
    3 EAS CHANNEL NO.    4 WEEKLY TEST SETUP
    5 EAS CHAN BACKGND   6 RELAY MAPPING
```

1. Display Non-Required Events

This option is normally not used for **TV/CG**. Selecting the first option, **DSPLY NON-REQ EVT** (Display Non-Required Events) brings up this screen:

Figure IX.4.1.1

```
    ---    DISPLAY NON-REQUIRED EVENTS    ---
    ARROW TO SET, EXIT TO EXIT
    >On All Channels      On EAS Channel Only
    TUNE TO Msg on All Channels
```

This is for a multichannel setup. The first selection, **On All Channels**, will crawl the alerts on every channel. The second selection, On **EAS Channel Only**, will not crawl on any channels other than the designated EAS channel. The third selection, **TUNE TO Msg on All Channels** ("tune-to" message on all channels), will result in a crawl on all channels other than the designated EAS channel that advises viewers to tune to the EAS channel for more information, with the full message on the designated EAS channel.

2. Enter System Name

This works exactly like the same option in **TV/CG** mode, except that the default system name for **Cable SSC** mode is **YOUR LOCAL CABLE TV SYSTEM**.

3. EAS Channel Number

The third menu item, **EAS CHANNEL NO.**, results in this screen:

Figure IX.4.2.0

```
---         EAS  CHANNEL  NUMBER         ---
EXIT  TO  KEEP  OLD,  ENTER  TO  ENTER  NEW
EAS  CHANNEL:    99
```

The default channel is channel 99 but it may be set to any channel up to 125. If a larger number is entered, it will default to 125. Pressing **<ENTER>** brings up the channel entry screen:

Figure IX.4.2.1

```
---         EAS  CHANNEL  NUMBER         ---
PRESS  ENTER  TO  KEEP  OLD
USE  NUMBER  KEYS  THEN  ENTER  FOR  NEW
EAS  CHANNEL:    99    >_
```

The existing channel will be displayed on the bottom line. In this screen, if you press **<ENTER>** without having entered any digits, then you will keep the old number. Please note that only the numeric keys work here, not the alphanumeric pattern. When done, press **<EXIT>** for the confirmation screen:

Figure IX.4.2.2

```
---         EAS  CHANNEL  NUMBER         ---
IS  CHANNEL  CORRECT?
CLEAR  TO  ENTER  AGAIN,  EXIT  TO  EXIT
EAS  CHANNEL:    99
```

4. Weekly Test Setup

The fourth option, **WEEKLY TEST SETUP**, is a little different in **Cable SSC** than it is in **TV/CG**. This option in **Cable SSC** brings up this screen:

Figure IX.4.3

```
---           WEEKLY TEST SETUP          ---
1 IGNORE  INCOMING RWT
2 CABLE  SUBSCRIBERS  5000  OR  OVER
```

Option number one may also read **RE-SEND INCOMING RWT** and option number two may also read **CABLE SUBSCRIBERS LESS THAN 5000.** The settings are as they read on the screen.

5. EAS Channel Background

Then, menu option number five is **EAS CHAN BACKGND**. Here is the screen for it:

Figure IX.4.4.0

```
---          EAS  CHANNEL  BACKGROUND        ---
ARROW  TO  SET,  EXIT  TO  EXIT
_No Background Page   Background on Alert
>Background Always
```

This applies to the designated EAS channel only. If it is a dedicated EAS channel, then you may wish to select the default, which is Background Always. For **TV/CG**, Background Always should never be selected. This means that, when a **TV/CG** is set on this channel, the screen will read

Figure IX.4.4.1

```
EAS  CHANNEL

BROUGHT  TO  YOU  BY
THE  NAME  THAT  YOU  ENTERED
```

The last line is whatever name you have entered, unless there is an active alert, in which case the background page for the alert will appear as well as the alert crawl. **No Background Page** means that only a crawl will ever appear, while **Background on Alert** means that the whole screen will be taken over only while an active alert is crawling.

6. Relay Mapping

Option number 6, **RELAY MAPPING**, only applies to units with the fully-configured TTL board. It is not relevant for units sold for **TV/CG**, which are not equipped with TTLs or these relays.

SYSTEM TESTS

The system tests in **Cable SSC** mode are like those in the **TV/CG** mode, except that, in **Cable SSC** mode, a third option is available, resulting in a static screen, coupled with the program-line tone. The option reads:

Figure IX.5.1

```
   3 IF REPLACEMENT TEST
```

And the monitor screen is like this:

Figure IX.5.2

```
        CHANNEL
       ALIGNMENT
      IN PROGRESS
```

Press **<EXIT>** to exit each test.

*Notice: when exiting **SYSTEM TESTS**, there will be a delay, as there is when exiting the SSC setup main menu.*

Section X: Station Setup in the EAS-1/EAS-1CG

When you first select this option, number 17 on the Utility Menu, you will see this screen, with these four selections:

Figure X.0.1

```
   ---          STATION SETUP MENU        ---
        ARROW TO SET/NEXT SCREEN, EXIT TO EXIT
        OPERATOR PASSWORD    TECH. PASSWORD
        CALL LETTER ENTRY    STATE PRIMARY
```

If you keep moving the cursor down with the <\/>, it will change to this screen, with four new selections:

Figure X.0.2

```
      ---          STATION SETUP MENU        ---
    ARROW TO SET/NEXT SCREEN, EXIT TO EXIT
     STATION TIME ZONE    DAYLIGHT TIME
     ORIGINATOR CODE      COUNTY ENTRY
```

To select one of these items, use the arrows to position the cursor, then press **<ENTER>**.

1. Operator Password

If you select the first option, you will see the following screen. As required by FCC part 11 rules, a password is needed in order to generate an EAS alert. In the Gorman-Redlich EAS-1/CG Encoder/Decoder, this password consists of a four-digit numeric passcode. You choose whatever you want this passcode to be. Our default is 1234. You may keep this or change it. If you wish to keep the current passcode, then now press **<EXIT>**. To change the code, press **<ENTER>**.

Figure X.1.0

```
   ---          OPERATOR PASSWORD        ---
        EXIT TO KEEP OLD, ENTER TO ENTER NEW

        CURRENT PW: 1234
```

You now see the following screen. Again, pressing **<EXIT>** BEFORE entering any numbers

will exit this function and keep the old passcode. If you press one, two or three digits, then press **<ENTER>**, the screen will jump to the second screen below, and leading zeroes will complete the passcode. If you enter four digits from the keypad, the screen will automatically jump to the second screen below without pressing **<ENTER>**. For instance, pressing **<2><9><ENTER>** will result in the code "0029."

Figure X.1.1

```
---          OPERATOR PASSWORD        ---
PRESS ENTER TO KEEP OLD PW
USE NUMBER KEYS THEN ENTER FOR NEW
CURRENT PW: 0029     >_
```

If you are now satisfied with the passcode, press **<EXIT>** to continue. Otherwise, if you've made a mistake, press **<CLEAR>** to re-enter the code.

Figure X.1.2

```
---          OPERATOR PASSWORD        ---
IS PASSWORD CORRECT?
CLEAR TO ENTER AGAIN, EXIT TO EXIT
CURRENT PW: 0029
```

2. Technician Password

This EAS-1 unit also has the capacity for a second passcode, called the Technician Password. This is also a four-digit numeric passcode, and is the code necessary to access the EAS-1 menu in order to change settings. The screens below are the ones that will appear; they are exactly the same as for the operator passcode, with the substitution of "technician" for "operator," and the procedure is identical. You may have the same Technician Password as the Operator Password, if you wish. Our default code is "2345," which you may keep or change as you wish.

Figure X.2.0

```
---          TECHNICIAN PASSWORD       ---
EXIT TO KEEP OLD, ENTER TO ENTER NEW
CURRENT PW: 2345
```

The next two screens operate just like the operator password screen:

Figure X.2.1

```
---          TECHNICIAN PASSWORD       ---
```

```
        PRESS ENTER TO KEEP OLD PW
        USE NUMBER KEYS THEN ENTER FOR NEW
        CURRENT PW: 2345      >_
```

Figure X.2.2

```
        ---        TECHNICIAN PASSWORD        ---
        IS PASSWORD CORRECT?
        CLEAR TO ENTER AGAIN, EXIT TO EXIT
        CURRENT PW: 2345
```

3. Call Letter Entry

For the third option, call letter entry, you'll see the following screen. If your call letters are entered correctly already, then press **<EXIT>** to bypass this option. If the call letters need to be changed, then press **<ENTER>** to do so.

Figure X.3.0

```
        ---        CALL LETTER ENTRY        ---
        EXIT TO KEEP OLD, ENTER TO ENTER NEW

        CALL: WLGN/FM
```

You now see the following screen if you're changing the call letters. If you press **<ENTER>** BEFORE entering anything else, you will return to the previous screen. Otherwise, the call letters will become whatever you've entered. If you make an error in entering the call letters, then press **<ENTER>** immediately to return to the second screen below, then press **<CLEAR>** to re-try entering the call letters.

Figure X.3.1

```
        ---        CALL LETTER ENTRY        ---
        PRESS ENTER WHEN DONE
        USE ALPHA KEYS THEN ENTER FOR NEW
        CALL: WLGN/FM        >_
```

Use the numeric keypad to enter the call letters. EACH letter, symbol or number requires pressing two numeric keys in succession. Each number key represents three letters/symbols, as well as the number for that key. Select the letter/symbol/number group with the first key pressed, then select **<1>**,**<2>**, **<3>**, or **<4>** for the second key pressed, depending on the

order of the letters/symbols for that number key. Pressing the **<4>** as the second key always produces the number just pressed. EXAMPLE: to get a "W", first press **<8>** to select the letter/number group "VWX" then press **<2>** to select the second letter of the group, which is "W".

To use the table below, select the letter/symbol group containing the desired letter/symbol, and press the underlined number before that group. Then press **<1>**, **<2>**, **<3>**, or **<4>** as shown across the top for that column.

Figure X.3.2: Keypress Sequences

1\2	1	2	3	4
1	A	B	C	1
2	D	E	F	2
3	G	H	I	3
4	J	K	L	4
5	M	N	O	5
6	P	Q	R	6
7	S	T	U	7
8	V	W	X	8
9	Y	Z	/	9
0	-	[	]	0

For instance, to enter the sequence "WG61-CG," you would use this keystroke sequence: **8-2, 3-1, 6-4, 1-4, 0-1, 1-3<, 3-1.**

After you've entered the call letters to your satisfaction, you will come to this screen:

Figure X.3.3

```
---          CALL LETTER ENTRY          ---
CLEAR TO ENTER AGAIN, EXIT TO EXIT
ARE CALL LETTERS ENTERED CORRECTLY?
CALL: WG61-CG
```

Press **<EXIT>** to continue.

4. State Primary Selection

See the following screen. For most stations, the proper setting is the default setting, which is **NO**. **YES** is selected ONLY if your station is a state primary. If you don't know if you're a state primary, then you aren't one. On this item, the arrow keys simply toggle between **YES** and **NO**. Press **<ENTER>** to select either one; press **<EXIT>** to continue.

Figure X.4

```
---         STATE PRIMARY SELECTION         ---
ENTER TO SELECT, EXIT TO EXIT
IS THIS STATION A STATE PRIMARY?
_  YES                  >  NO
```

5. Station Time Zone Selection

You now arrive at the screen below. You may choose between seven time zones. Use the arrow keys to move between the seven options, then press **<ENTER>** to select that option. The default is the Eastern Time Zone, EST. Daylight-savings time is irrelevant to this selection. Parts of US possessions in the Caribbean are in the Atlantic time zone. The contiguous US is in the Eastern, Central, Mountain and Pacific time zones. Alaska is in the Alaska time zone; Hawai'i is in the Hawai'i time zone. Press **<EXIT>** to continue.

Figure X.5

```
---          STATION TIME ZONE          ---
ENTER TO SELECT, EXIT TO EXIT
_ATLANTIC >EASTERN   CENTRAL    MOUNTAIN
PACIFIC    ALASKA      HAWAII
```

6. Daylight Time Selection

After selecting the time zone, you now select/deselect daylight saving time. If you go on daylight saving time in April, then **YES** should be selected. If you do not go on daylight saving time, then **NO** should be selected. The arrow keys simply toggle between the two options. **<ENTER>** selects the option. Press **<EXIT>** to continue. Only a few areas do not use daylight saving time, including the entire states of Hawai'i and Arizona, as well as parts of Indiana and a few other locales. The default selection is **YES** (unless your station is in Arizona or Hawai'i). While in daylight saving time, from April to October, the time display will read "EDT" for the Eastern Time Zone rather than "EST." If **NO** is selected on this option, then the time display will always read "EST" for the Eastern Time Zone.

Figure X.6

```
---           DAYLIGHT TIME            ---
ENTER TO SELECT, EXIT TO EXIT
DOES THIS STATION GO TO DAYLIGHT TIME?
>  YES                  NO
```

7. Originator Code Selection

Next is selecting the Originator Code according to the display shown below. Default is EAS, Emergency Alert System. Do not change this unless you know for certain that another option is the one you need. **PEP**=Primary Entry Point, **WXR**=National Weather Service, **CIV**=Civil Authority. Use the arrow keys, then **<ENTER>** to change the setting. Press **<EXIT>** to continue.

Figure X.7

```
---            ORIGINATOR CODE           ---
ENTER TO SELECT, EXIT TO EXIT
PEP        WXR        CIV
>EAS
```

8. State and County Selection

The first screen to appear will be this:

Figure X.8.0

```
---   COUNTIES IN THE LISTENING AREA   ---
EXIT TO KEEP OLD, ENTER TO ENTER NEW
While Editing:
ARROW TO SET, EXIT TO EXIT
```

If you press **<ENTER>**, the first of the following two screens will appear. Use the **<\/>** and **</\>**to move between the selections, then press **<ENTER>** to edit the county selection for that state or territory. If you maintain pressure on an arrow key, it will move continuously up or down the menu. If you continue down below "NH" then the lower screen appears with the rest of the options. Territories follow the states and District of Columbia. Up to six (6) state/territory codes may be selected. To deselect an entire state/territory, use the arrow keys to move to the selection, then press **<CLEAR>**. Doing so will deselect that state/territory plus all counties/areas in that selection. A selection will NOT deselect, however, if it is the only remaining selection; you must select another county/area in another state/territory before you can then deselect it. Note that counties in both Ohio and West Virginia are selected in the following table:

Figure X.8.1

```
---       SELECT STATE THEN COUNTY       ---
_AL  AK  AZ  AR  CA  CO  CT  DE  DC  FL
GA  HI  ID  IL  IN  IA  KS  KY  LA  ME
MD  MA  MI  MN  MS  MO  MT  NE  NV  NH
```

```
   ---      SELECT STATE THEN COUNTY      ---
 NJ   NM   NY   NC   ND  >OH   OK   OR   PA   RI
 SC   SD   TN   TX   UT   VT   VA   WA  >WV   WI
 WY   AS   FM   GU   MH   MP   PW   PR   UM   VI
```

Below is a table of the sixty two-letter state, district and territory codes:

Figure X.8.2: State, district and territory codes

AL Alabama	AK Alaska	AZ Arizona
AR Arkansas	CA California	CO Colorado
CT Connecticut	DE Delaware	DC District of Columbia
FL Florida	GA Georgia	HI Hawai'i
ID Idaho	IL Illinois	IN Indiana
IA Iowa	KS Kansas	KY Kentucky
LA Louisiana	MA Massachusetts	MD Maryland
ME Maine	MI Michigan	MN Minnesota
MO Missouri	MS Mississippi	MT Montana
NC North Carolina	ND North Dakota	NE Nebraska
NH New Hampshire	NJ New Jersey	NM New Mexico
NV Nevada	NY New York	OH Ohio
OK Oklahoma	OR Oregon	PA Pennsylvania
RI Rhode Island	SC South Carolina	SD South Dakota
TN Tennessee	TX Texas	UT Utah
VT Vermont	VA Virginia	WA Washington
WI Wisconsin	WV West Virginia	WY Wyoming
AS American Samoa	FM Fed. States of Micronesia	GU Guam
MH Marshall Islands	MP Northern Mariana Islands	PR Puerto Rico
PW Palau	UM Other Misc. Islands**	VI American Virgin Islands

**"UM" comprises Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Midway Islands, Navassa Island, Palmyra Atoll and Wake Island, which nine sites are scattered over the Pacific Ocean. UM is the only abbreviation in the list which is not an official US Postal Service state/territory code.

When the state or territory is selected, then a list of counties appear for that state or territory. Several of the territories and the District of Columbia only have one option, for the entire area, and this must be selected as well as the two-letter state/territory code. In the case of Alaska, there are no counties, simply designations of areas called boroughs. The areas in lower Alaska, on the Pacific Coast, are generally small, while areas in central and northern Alaska are quite large. And, of course, Louisiana has parishes rather than counties.

To select counties/areas, hold the arrow keys to move down (or up) between selections, then press **<ENTER>** to select or deselect that option. Up to a total of 31 counties/areas may be selected (among up to six (6) states/territories). A county/area will not deselect if it is the only remaining one selected. In this case, another county/area must be selected before deselecting it. Press **<EXIT>** to continue.

County of License

You will now be prompted, as per the following screen, to select a county of license.

Figure X.8.3

```
   ---              COUNTY OF LICENSE           ---
EXIT TO KEEP OLD, ENTER TO ENTER NEW

COUNTY OF LICENSE: Athens            OH
```

If county selection has not changed, then the old selection will be displayed and you may press **<EXIT>** to continue while keeping the previous selection. However, if county selection HAS been changed, this screen will be skipped and you will automatically be passed into the next selection screen. If county selection has not changed, you may press **<ENTER>** to display a list of all selected counties/areas, which may be on more than one screen. Use the **<\/>** and **<\/\>**, then **<ENTER>** to select the county of license. Only one may be selected, so selecting a new one automatically deselects a previous selection. Again, press **<EXIT>** to continue.

RMT County Selection

Now you are prompted to enter the RMT (Required Monthly Test) counties. Again, you will see this screen ONLY if you have not changed the county selection:

Figure X.8.4

```
   ---             MONTHLY TEST COUNTIES         ---
EXIT TO KEEP OLD, ENTER TO ENTER NEW
While Editing:
ARROW TO SET, EXIT TO EXIT
```

If you see this screen, press **<EXIT>** to continue while keeping the old county selections. Otherwise, press **<ENTER>** to change the RMT counties. You will again be shown a list of selected counties/areas; you will also go directly to this screen, bypassing the above screen, if you have changed your county selection. Use arrow keys and **<ENTER>** to select/deselect entries. The default is selection of all entries on the list. However, if you have counties in more than one state, deselect those that are not in your state to avoid forwarding twice (or more) times as many monthly tests as required. You only need to run monthly tests directed to your state of license. Again, press **<EXIT>** to continue when you are satisfied with the selection.

RWT County Selection

Next is RWT (Required Weekly Test) county selection. Only one county needs to be selected for this option. The default is your county of license. We recommend keeping this as your RWT county, and not adding other counties for the weekly test, since entering additional counties just lengthens the burst of FSK header code unnecessarily, taking more of your air

time. Otherwise, this step is identical to step 9, RMT County Selection. Press **<EXIT>** to continue.

Figure X.8.5

```
---        WEEKLY TEST COUNTIES        ---
EXIT TO KEEP OLD, ENTER TO ENTER NEW
While Editing:
ARROW TO SET, EXIT TO EXIT
```

Configure Headers

The last section of this county selection process is setting up the optional event headers. After exiting the weekly test setup, you'll see this screen at first:

Figure X.8.6

```
---        EVENTS/COUNTIES TO FORWARD        ---

PLEASE WAIT. . .
```

Then the following screen:

Figure X.8.7

```
---        EVENTS/COUNTIES TO FORWARD        ---
ENTER=DEFAULT: All Events, All counties,
and Send Now Priority
EXIT=Edit Individual Counties/Priorities
```

If you now press **<EXIT>**, you will now see the following screen if the unit has already been programmed with the defaults:

Figure X.8.8

```
---        EVENTS/COUNTIES TO FORWARD        ---
ARROW=ADV EXIT=EXIT ENTER=SET CLR=DELETE
PSH# EVT    PRIORITY          # OF COUNTIES
1    ADR    SEND NOW                8/8
```

PSH = Preselected Header Code; **EVT** = Event
PRIORITY = Maximum delay between receiving alert and forwarding alert
 # OF COUNTIES 8/8 = All 8 counties of the 8 counties in the viewing area are selected for

this event; if any of the counties in the viewing area are specified in the incoming message header code, the message will then be forwarded.

If you have pressed **<EXIT>** when you are at the screen in Figure X.8.7, you may see this screen if the unit has not been properly programmed already:

Figure X.8.9

```
---     EVENTS/COUNTIES TO FORWARD     ---
ARROW=ADV EXIT=EXIT ENTER=SET CLR=DELETE
PSH# EVT    PRIORITY        # OF COUNTIES
1    ADR    NEVER SEND            0/8
```

Notice that this is the same as Figure X.8.8 except that the priority is **NEVER SEND** and the counties is **0/8**.

If instead of **<EXIT>**, you have pressed **<ENTER>**, all events will be selected for all counties, and will be automatically re-sent as soon as they come in. The following screen will briefly appear, followed by the above screen.

Figure X.8.10

```
---    EVENTS/COUNTIES TO FORWARD    ---
Processing Defaults...Please Wait
```

When at the second-above screen (Figure X.8.9), you may edit any/every event. Note that the last line of the display is:

Figure X.8.11

```
1    ADR    SEND NOW               8/8
```

This refers to the first event header/selection, **ADR**, which is Administrative Message. You may use the **<\/>** to scroll down to the other events. If you have pressed either **<ENTER >** or **<EXIT>** when you were at the screen shown in Figure X.8.7, and you now press **<ENTER>** to edit an individual header, you will first see the following screen:

Figure X.8.12

```
---        SELECT EVENT PRIORITY       ---
ENTER TO SELECT, EXIT TO EXIT
_NEVER      15 MIN      10 MIN      5 MIN
>NOW
```

Select the event priority. This selection is for the first event only, which is **ADR**. **NEVER**

means "never send," meaning that it will not be automatically forwarded with the EAS-1/CG unit in automatic mode, but may be sent manually, if you wish. If **NOW** is selected, the alert will be automatically forwarded as soon as it comes in. The other options will delay automatic forwarding for 5, 10 or 15 minutes. The purpose of this is to allow you to manually forward the alert, if a worker is present, at a gap in programming within the time allowance. If you do not manually send the alert, then it will be automatically sent at the end of the time period, which may interrupt a commercial or other programming. However, if you are in any cable mode, the alert will automatically forward immediately. Press **<EXIT>** to continue, and you will then see the next screen:

Figure X.8.13

```
---        SELECT EVENT COUNTIES        ---
ARROW TO SET, EXIT TO EXIT
PRESS ANY KEY TO CONTINUE
```

Any key you press on the keypad will result in the list of already-selected counties being shown. The default is selection of all counties for each event. We recommend keeping this selection unless you have a compelling need to change it. Again, select/deselect counties with the arrow keys and **<ENTER>**.

In any case, after having used either **<ENTER>** or **<EXIT>** to go into the **EVENTS/COUNTIES TO FORWARD** editing mode, press **<EXIT>** again to return to the main selection screen shown in Figure X.8.8.

Below is a table of the 28 currently-approved optional codes:

Figure X.8.14

```
1 ADR Administrative Message
2 BZW Blizzard Warning
3 CEM Civil Emergency Message
4 DMO Demonstration Message
5 EVI Immediate Evacuation
6 FFA Flash Flood Watch
7 FFS Flash Flood Statement
8 FFW Flash Flood Warning
9 FLA Flood Watch
10 FLS Flood Statement
11 FLW Flood Warning
12 HLS Hurricane Statement
13 HUA Hurricane Watch
14 HUW Hurricane Warning
15 HWA High Wind Watch
16 HWW High Wind Warning
17 NIC National Information Center Message
```

```
18 NPT National Periodic Test
19 SPS Special Weather Statement
20 SVA Severe Thunderstorm Watch
21 SVR Severe Thunderstorm Warning
22 SVS Severe Thunderstorm Statement
23 TOA Tornado Watch
24 TOR Tornado Warning
25 TSA Tsunami Watch
26 TSW Tsunami Warning
27 WSA Winter Storm Watch
28 WSW Winter Storm Warning
```

There are also four required codes that are not set in this step:

Figure X.8.15

RWT: Required Weekly Test
RMT: Required Monthly Test
EAN: Emergency Action Notification
EAT: Emergency Action Termination

Setup Completion

Now press **<EXIT>** again to complete setup and return to the **STATION SETUP** menu.

Section XI: EAS-1/EAS-1CG DTMF Telephone Interface

This section is relevant only if you have the DTMF telephone interface installed. If you do, a 6/4 modular telephone jack will be visible in the back panel of your unit. If you do not have this feature, it may be added whenever you wish to do so.

1. First, check the phone support in the EAS-1/CG Utility Menu. To do this, first press the **<MENU>** key (**<7>** on the EAS-1/CG keypad). Using the keypad, enter the four-digit technician code. When the menu appears, press the **<V>** to scroll down until you reach the menu item 16 on the third screen, **PHONE SETUP**. Press **<ENTER>**. You will then see this screen:

Figure XI.0

```
    ---        SETUP PHONE SUPPORT        ---
    ARROW TO SET, EXIT TO EXIT
    > PHONE SUPPORT IS ON , ENTER TO CHANGE
    PHONE PARAMETERS, ENTER TO CHANGE
```

If the third line is **PHONE SUPPORT IS OFF. . .** then press **<ENTER>** on the keypad to turn it on. Press the **<V>**on the keypad to the fourth line, **PHONE PARAMETERS. . .** then press **<ENTER>**. You will then see this screen:

Figure XI.1

```
    ---        SET PHONE PARAMETERS       ---
    EXIT KEY TO EXIT, SELECT 1 OR 2
    1 # RINGS TO ANSWER     1 2>3 4 5 6 7 8 9
    2 # SECONDS TO HANGUP  10 20>30 40 50 60
```

These are the default values: 3 rings to answer (the EAS-1/CG will establish the phone connection after three rings) and 30 seconds to hangup (the EAS-1/CG unit will disconnect the phone connection if no signal is received on the phone line for 30 seconds). Press either **<1>** or **<2>** on the EAS-1/CG keypad, then use the **<V>** or the **</\>** to re-select the desired value. Then press **<EXIT>** three times to return to the operational screen.

2. Dial the appropriate number from a telephone. At this time, the EAS-1/CG display should include the phrase

Figure XI.2

```
    ENCODER: Incoming Phone Call...
```

3. The unit will establish the phone connection after the prescribed number of rings, as set in Utility Menu item #16, submenu phone parameters (see second screen, above). The default is three rings. When the unit answers, wait for a brief ACK tone ("acknowledged", a short burst of 2083 Hz.).

4. After you hear this tone, enter the four-digit passcode (operator password for your EAS-1/CG) from the telephone keypad, followed by the **<#>** sign. You should then hear another ACK tone acknowledging the connection. If you hear a NAK tone ("not acknowledged", a burst of dual tones 853 and 960 Hz., slightly longer than the ACK), the passcode was not accepted; try again.

5. After the passcode is accepted and the connection is established, you may use the phone interface. Pressing the **<*>** (asterisk or star) sign at this time should return a NAK tone.

6. The following operations may then be done from the phone (preceded by their phone pad codes):

<1><#> Send weekly test (RWT)

1# is all that's needed. The unit will automatically generate the three FSK header tones and the three EOM tones. The monitor display will be the normal RWT display.

<2><#> Send monthly test (RMT)

Automatically generated, including FSK header -> ATT tone -> recorded voice message -> EOM.

A voice message MUST be recorded first (**4#**). If no message has been recorded during the CURRENT phone session, a NAK tone will be returned. The monitor display will be the normal RMT display.

<3><#> Send civil emergency message (CEM)

Automatically generated, including FSK header -> ATT tone -> recorded voice message -> EOM.

A voice message MUST be recorded first (**4#**). If no message has been recorded during the CURRENT phone session, a NAK tone will be returned. The monitor display will be the normal CEM display.

<4><#>. . .<#> Record voice message

Press **4#**. After you then hear the short ACK tone, speak into the phone to record your message. When the message is finished, pause briefly, then press the **<#>** key again. You should hear another ACK tone that confirms completion of the voice message. A voice message must be recorded during the CURRENT phone session before you can send an RMT (required monthly test, **2#**) or CEM (civil emergency message, **3#**). There is no monitor display.

<5><#> Play back voice message

Press **5#**. You will hear a short ACK tone, followed by the currently-recorded voice message, followed by another ACK tone on completion of the message. This message may be from the previous phone session; if so, you must record a new message before an RMT (required monthly test, **2#**) or CEM (civil emergency message, **3#**) may be sent. There is no monitor display.

<6><#>. . .<#> Direct voice link

Press 6#. You should hear a double ACK tone. After the double tone, the connection is established and anything spoken into the phone will be put out over the air on all channels. Press **<#>** again to end the session. To confirm completion of the direct phone link you will hear another ACK tone. During direct voice access, there will be a crawl and an EAS background page.

<7><#>. . .<#> Direct voice link with ATT and recorded audio

Press **7#**. You will hear the ATT (attention) tone, followed by the one-minute audio recording ("tune-to" message); when the audio stops playing, you'll hear the double ACK tone. At this point, you can speak through the phone directly on air. Press **<#>** again to end the direct voice link session. Before direct voice access, there will be a "tune-to" crawl and EAS background page. During direct voice access, there will be a message crawl and EAS background page.

<8><#>. . .<#> Direct voice link with ATT

Press **8#**. You will hear the ATT (attention tone). When the tone stops playing, you'll hear the double ACK tone. At this point, you can speak through the phone directly on air. Press**<#>**again to end the direct voice link session. During direct voice access, there will be a message crawl and EAS background page.

<9><#>. . .<#> Direct voice link with no character generation

Press **9#**. You should hear a double ACK tone. After the double tone, the connection is established and anything spoken into the phone will be put out over the air on all channels. Press **<#>** again to end the session. To confirm completion of the direct phone link you will hear another ACK tone. During direct voice access, there will be no crawl or EAS background page.

<0><#> Disconnect (hang up)

Press **0#**. This must be done before physically hanging up the phone; otherwise the EAS-1/CG unit will not promptly disconnect from the phone session, but will wait for the number of seconds to hangup selected in EAS-1/CG menu item #16.

The background page that will appear first for the "tune-to" direct voice access,**<7><#>**, is as shown here:

Figure XI.3

LOCAL AUTHORITY HAS ISSUED A DIRECT COMMUNITY ACCESS TUNE TO CHANNEL 99 FOR FURTHER INFORMATION

The crawl is similar, reading

Figure XI.4

A LOCAL AUTHORITY HAS ISSUED A DIRECT COMMUNITY ACCESS. TUNE TO CHANNEL 99 FOR FURTHER INFORMATION.

The page that appears next for **<7><#>**, and the only page that appears for **<6><#>** and **<8><#>**, is as shown below:

Figure XI.5

> **LOCAL AUTHORITY**
> **HAS ISSUED A**
> **DIRECT COMMUNITY ACCESS**
> **BROUGHT TO YOU BY**
> **WOUB/TV**

The crawl is similar, reading:

Figure XI.6

```
      A LOCAL AUTHORITY HAS ISSUED A DIRECT COMMUNITY ACCESS
```

CAUTION: In the menu item for the phone connection on the EAS-1/CG, there is a hangup time specified, with a default of 30 seconds (but you may modify it for intervals from 10-60 seconds). The EAS-1/CG will automatically disconnect if no signal is sent over the phone line for this period of time. Therefore, if you are connected in a phone session but must pause for longer than this period, pressing the **<*>** key on the telephone keypad periodically (returning a NAK tone) will prevent hangup.