
AES•Net7000

WIRELESS NETWORK MANAGEMENT SOFTWARE INSTALLATION & OPERATION MANUAL

<< AES•IntelliNet Radio Network Management System Ver. 1.4x >>

Message Control Site Programming Database sYstem (c)1993-1996 AES Corp.

Tues Mar 07 12:57:01 1996 <5500 #00 -> 0000 (LNR) Unit Check In...>
(Data 010: Unit 7054 is OK (New) Type=Supervisory ID=5500 Zone 000)

To Select Entry: Use Cursor Keys + Enter, Type Entry Number, ESC to Exit

AES•IntelliNet

AES Corporation

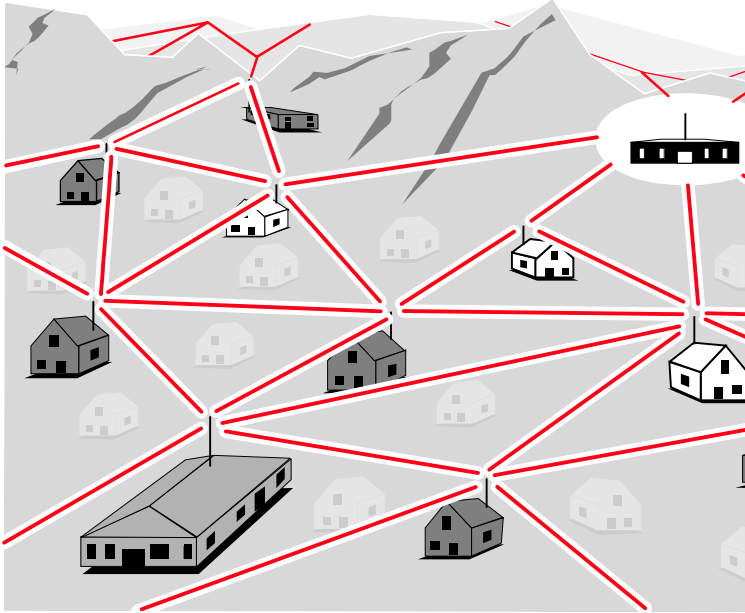
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System Overview



The AES•IntelliNet Central Alarm Reporting System uses two-way radio to monitor alarms at remote locations. It requires no phone lines, which are subject to both tampering and general failure.

What sets the AES system apart is its "smart" communicator, called the subscriber unit. Each subscriber unit takes input from a local alarm panel and relays alarm information to a central station. If a subscriber unit is too far away to reach the central station by direct radio transmission, its message will be relayed by another subscriber unit closer to the central station. This unique, built-in "repeater" capability creates a highly reliable security link. This message relay is completely automated - the subscriber units establish *themselves* in the network. Furthermore, by eliminating the need for a separate repeater tower, the AES system dramatically reduces the cost of setting up a wireless monitoring system.

The AES•IntelliNet software provides the central station operator with the means to control and adjust the network when needed.

Program Functions

- Query and Poll remote subscriber units for status;
- Send and receive text messages to and from subscriber units equipped with data terminals;
- Remote reset, deactivation and reactivation of subscriber units;
- Remote changing of check-in time intervals;
- Remote control of relay-switched functions;
- Remote zone configuration;
- Databasing of basic information on network structure.

NOTE: It is assumed that the 7000/2 Central Receiver and the 7100 Network Controller are up and running. The receiver and computer must be linked by an RS-232 cable. It should be connected to the chosen computer COM port (usually COM 2) and to the "active" side of the 7000/2 Dual Central Controller. See manual sections on setting up central station hardware.

Loading Software

AES Net7000 software is specifically designed to run on the AES7100 network controller. Certain valuable features will only function if the Net7000 system is installed on the AES7100. Net7000 software requires the use of a COM port through which it is linked to the 7000/2 Dual Central Receiver. To load the software, follow the instructions on the diskette provided. An installation program will automatically load the software onto the hard drive.

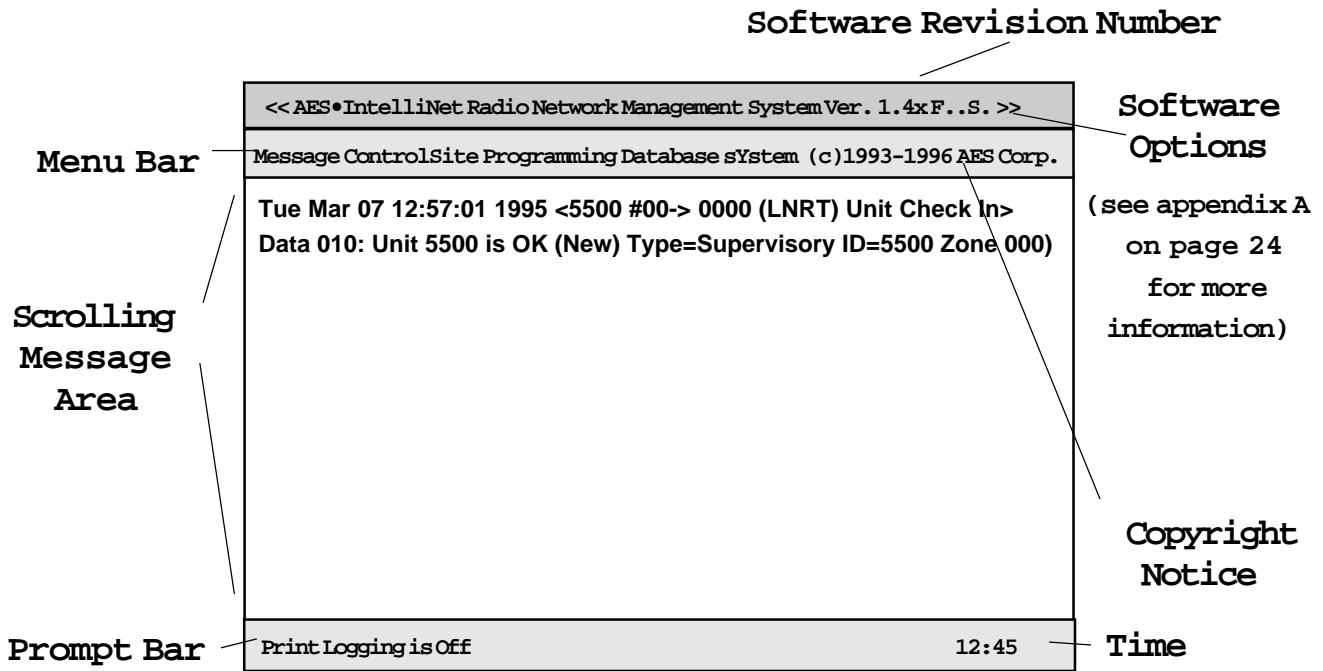
If you are loading V 1.4 to replace an earlier version of Net7000 software, the install program will store your old software and database files under a separate directory. Should you need to reactivate the old version, a "revert" program is included with your V 1.4 software.

Starting Net7000 Software

To start the program, type "NET7k" while in the c:\AES directory.

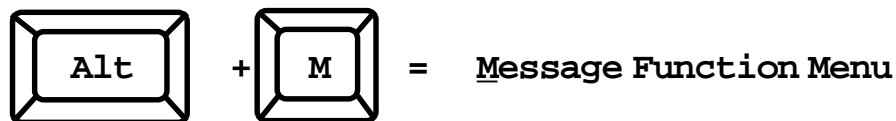
Alternately, you may type "Net7000" from any directory if the root directory is part of your path. A file named Net7000.bat has been loaded in the c:\ (root) directory.

System Overview



The basic AES•IntelliNet monitoring screen is illustrated above. Most of the screen displays network activity. Network information scrolls up the screen. In normal communications monitoring mode, all radio data "traffic" in range of the central station is displayed. This is a valuable tool for monitoring network activity. This data can be logged to a printer on LPT1 (or the DOS device PRN), which is toggled on or off by the <F9> key.

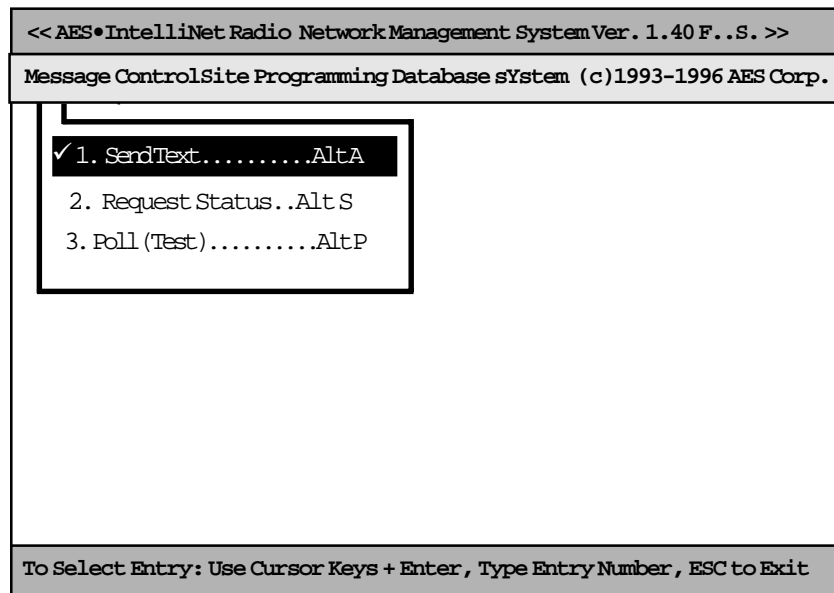
There are five function groups, including "Message," "ControlSite," "Programming," "Database" and "System." They are accessed from the menu bar in the upper part of the screen. Each of the menu bar function groups has a highlighted (red) letter. Menu function groups are selected by holding down the <ALT> key and pressing the function group's highlighted letter on your keyboard. Pressing F1 will also select the menu group.



System Overview

FUNCTION GROUPS

For example, you might want to select the "Message" function group. The word "Message" on the menu bar has the first letter "M" highlighted in the color red. This group is selected by pressing the <ALT> key plus the <M> key. The Message Group pulldown menu will now appear under the word "Message" on the menu bar.



The first of the pulldown functions, "Send Text," will be highlighted as illustrated above. Other functions within the pulldowns are selected using the arrow keys. The highlight bar follows the cursor. The pulldowns functions are executed when the user presses <ENTER>. Alternately, pulldown functions can be executed by pressing the line number of the desired function.

Alternate menu bar function pulldowns can be selected by using the left and right arrow keys. Pressing the <ESC> key will close the pulldown menu and return you to normal communication monitoring mode. Pressing the <ESC> key within a function block also will return you to normal communication monitoring mode.

NOTE: When a pulldown, or function block popup is being displayed, new network communications messages are temporarily stored in a buffer. Should the system experience an extremely high level of transmission activity while an operator function is being carried out, the program will automatically return itself to normal monitoring operation, thereby ensuring that no messages are missed.

Note also that many of the NET7000 functions can be accessed directly by "hot key" combinations like "<ALT> <T>, <ALT> <A>, etc." Hot key notations appear on the same line as the function descriptions. See the "SHORTCUTS" sections on later pages for the quickest methods of executing commands.

System Overview

PICKLIST POPUP

When a function is chosen from a function group, a popup picklist, illustrated at right, appears. You will be asked to select the ID number of the subscriber unit you wish to contact. Highlight the appropriate ID number using arrow keys and select it by pressing <ENTER>. New subscriber units automatically register themselves here upon activation.

| | | | | | | | | | | |
|---|--|------|------|------|------|------|------|------|------|------|
| << AES•IntelliNet Radio Network Management System Ver. 1.40 F..S. >> | | | | | | | | | | |
| Message ControlSite Programming Database sYstem (c)1993-1996 AES Corp. | | | | | | | | | | |
| <p>Enter Origin ID, or Use#\$, PGUP, PGDN to Scroll Thru List. Home Moves to Start End Moves to End Hit <ENTER> to Complete Selection</p> | <table border="1"> <tr><td>0001</td></tr> <tr><td>1002</td></tr> <tr><td>2003</td></tr> <tr><td>3004</td></tr> <tr><td>4005</td></tr> <tr><td>5006</td></tr> <tr><td>6007</td></tr> <tr><td>7008</td></tr> <tr><td>8009</td></tr> </table> | 0001 | 1002 | 2003 | 3004 | 4005 | 5006 | 6007 | 7008 | 8009 |
| 0001 | | | | | | | | | | |
| 1002 | | | | | | | | | | |
| 2003 | | | | | | | | | | |
| 3004 | | | | | | | | | | |
| 4005 | | | | | | | | | | |
| 5006 | | | | | | | | | | |
| 6007 | | | | | | | | | | |
| 7008 | | | | | | | | | | |
| 8009 | | | | | | | | | | |
| There are 9 IDs | | | | | | | | | | |
| To Select Entry: Use Cursor Keys + Enter , Type Entry Number , ESC to Exit | | | | | | | | | | |

Routing Communications

Since each subscriber unit in your AES•IntelliNet system acts as a radio repeater, you have a wide variety of routing options for communication with those units. The routing options you may choose from are compiled by the NET7000 software databasing system. Routing records are constantly updated to provide a completely accurate record of all routes used by your subscriber units in communicating with your central station.

Due to varying radio traffic conditions, different routes may be more expedient than others at different times. The flexibility of both the AES•IntelliNet system and the NET7000 software ensures that messages will not be delayed in reaching your central station.

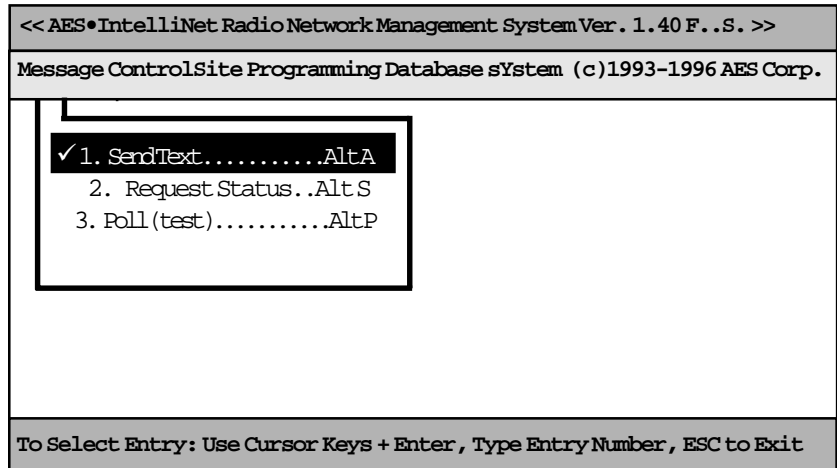
Each time a message is received from a unit, the NET7000 software extracts the subscriber unit ID number, as well as the message's routing information. That information is automatically stored in the NET7000 database. That database of information is utilized whenever an operator sends a command of any kind to a subscriber unit from the central station.

When sending a message, you may choose to use one of the routes stored in the database. You also have the option of manually entering a route of your own.

The Message Function Group

ACCESS

To access the Message function menu group, hold down the <ALT> key and press <M>. The popup illustrated at right will appear. Use the arrow keys to highlight a message function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.



SHORTCUTS

EXPLANATIONS

SEND TEXT

- Hold <ALT>, press <A>
- Select Target Unit
- Press <ENTER> for route
- Type text message
- Hold <ALT>, press <S> to send

•This function sends text messages to a remote subscriber unit. It is only used when a remote unit is equipped with a terminal or has a 7041 programmer attached. (While this feature is useful in systems with dedicated data terminals, it is seldom used in the day-to-day operation of alarm monitoring systems.)

REQUEST STATUS

- Hold <ALT>, press <S>
- Select Target Unit
- Press <ENTER> for route
- Hold <ALT>, press <S> to send

•This function queries a remote unit for its current status, requiring a report back to the central station. The resulting return message will provide the current status of the remote unit (see the manual section on messages types and interpretations, pp 19-22).

POLL (TEST)

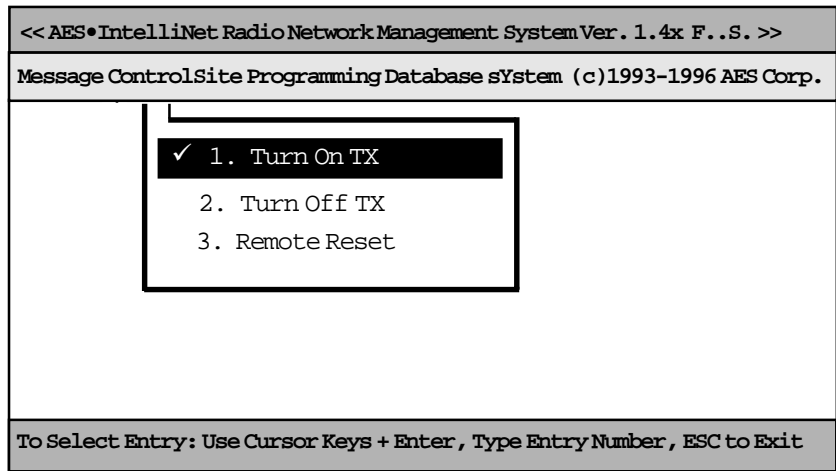
- Hold <ALT>, press <P>
- Select Target Unit
- Press <ENTER> for route
- Hold <ALT>, press <S> to send

•This function performs a quick test of a remote unit. No message is returned to the command center except in the case of a failure to communicate with the designated unit.

The ControlSite Function Group

ACCESS

To access the ControlSite function menu group, hold down the <ALT> key and press <C>. The popup illustrated at right will appear. Use the arrow keys to highlight a control function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.



SHORTCUTS

EXPLANATIONS

TURN ON TX

- Hold <ALT>, press <C>
- Press <1> or <ENTER>
- Select Target Unit
- Press <ENTER> for route
- Type text message
- Hold <ALT>, press <S>

•This function re-enables transmitting on a remote subscriber unit that has been turned off.

TURN OFF TX

- Hold <ALT>, press <C>
- Press <2>
- Select Target Unit
- Press <ENTER> for route
- Hold <ALT>, press <S>

•This function disables a remote subscriber unit should the need arise, such as when an alarm system fails and causes the transmitter to activate repeatedly. The operator can temporarily disable the remote unit from the central station using this feature. **NOTE:** The unit is not literally turned off, but is prevented from transmitting until it receives the "Turn On" signal (above).

REMOTE RESET

- Hold <ALT>, press <C>
- Press <3>
- Select Target Unit
- Press <ENTER> for route
- Hold <ALT>, press <S>

•The remote subscriber units can be reset from the central station. A reset may be used to restart the check-in interval timer. The new interval will commence at the time of reset. The reset function is the same as physically pushing the reset button on a subscriber unit (see subscriber manual).

The Programming Function Group

ACCESS

To access the Programming function menu group, hold down the <ALT> key and press <P>. The popup illustrated at right will appear. Use the arrow keys to highlight a function and press <ENTER> to select it. Proceed by selecting your target unit and choosing a route of communication.

The screen illustrated at right enables an operator to change the timing parameters of a subscriber unit from a central station.

Check-in intervals and the timing for secondary alarm accumulation, debounce delay and communication timeout time limits can be programmed using this screen.

```
<< AES•IntelliNet Radio Network Management System Ver. 1.40 F..S. >>
Message ControlSite Programming Database sYstem (c)1993-1996 AES Corp.

1. Timing Parameters
2. Control Relay Outputs
3. Zone Configuration

To Select Entry: Use Cursor Keys + Enter, Type Entry Number, ESC to Exit
```

```
<< AES•IntelliNet Radio Network Management System Ver. 1.40 F..S. >>
Message ControlSite Programming Database sYstem (c)1993-1996 AES Corp.

ID # Timing Parameters [Default]
Check In Interval [24 Hrs]: 12 (Hrs) 10 (Mins)
Secondary Accum. Interval (0 to 80 Sec) [10]: 10
Contact Debounce Delay (.05 to 2.5 Sec) [0.10]: 0.10
Enable Test Time Supervision (Y/N) [N]: N
Communication Timeout (60 to 300 Sec) [90]: 90
Last Updated On: Mon, Mar 06 09:30:23 1995

Press Alt S to Send/Save, Alt E to erase Fields, else ESC to Exit
```

TIMING PARAMETER PROGRAMMING FEATURES

•**CHECK IN INTERVALS:** When the above screen appears, a cursor will be flashing at the check-in interval area. The intervals should be programmed at between thirty minutes and 24 hours (you will notice that the default setting is at 24 hours). To minimize radio air traffic, an interval of 12 to 24 hours is recommended, except in high security applications. The ability to change this timing feature by remote is a key advantage of the two-way AES•IntelliNet system. When you have entered a check-in time interval, press <ENTER> to move on to the next field. **NOTE:** If unit has not been programmed before, Net 7000 will ask you to do so before changing timing parameters.

•**SECONDARY ACCUMULATION INTERVAL:** This feature allows a subscriber unit to accumulate alarms, after its initial alarm report, for a programmed time period. When an alarm has occurred at a remote subscriber site, the Net7000 system at your central station is notified immediately. The secondary accumulation interval allows a remote unit to compile additional subsequent alarms for a period of time, so that a more comprehensive packet of alarm data can be sent to the Net7000 system all at once, thereby reducing network air time.

The Programming Function Group

•TIMING PARAMETER PROGRAMMING FEATURES continued

The default setting for this feature is 10 seconds. If you choose to change the accumulation interval, just enter the new value and press <ENTER> to move to the next field.

•**CONTACT DEBOUNCE DELAY:** Whenever the position of an electrical switch is changed, there is a period of several milliseconds during which the parts of the switch vibrate. If the report from such a switch were completely instantaneous, each vibration would be transmitted as an event, resulting in a flurry of alarm transmissions for one event. By programming a debounce delay into your subscriber units, you can prevent this from occurring. The default setting on the debounce delay is .10 seconds. If you choose to change this setting, simply enter the new value and press <ENTER> to move to the next field.

•**ENABLE TEST TIME SUPERVISION:** This feature enables the Net7000 software to alert an operator if a subscriber unit fails to report in at its scheduled time. The default setting for this feature is "N" for no. If you would like to enable the test time supervision feature, change the setting to "Y" for yes and press <ENTER> to move to the next field.

•**COMMUNICATION TIMEOUT:** If a subscriber unit tries to communicate with the central station and does not receive acknowledgment within the time parameters set by the Communication Timeout function, it will record the communication interruption for its next status report, alerting the operator to any potential problem in communications. With the addition of an optional local output unit (order number 7072), a communication timeout will result in a warning of possible difficulties at the remote unit site.

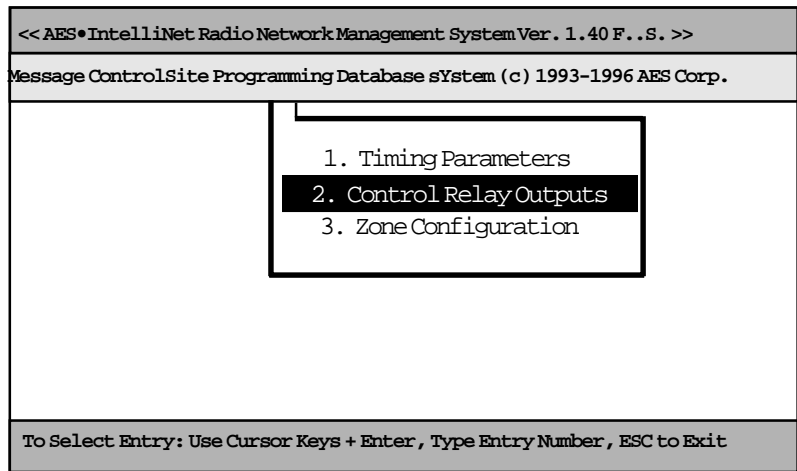
The default setting for this feature is 90 seconds. If you choose to change the Communications Timeout period, simply type in the new value, hold <ALT> and press <S> to complete and send your timing parameter data. **NOTE:** Please remember to save and send your actions by pressing <ALT> and <S> whenever executing a command.

•**LAST UPDATED ON:** This feature displays the last time the subscriber unit you have selected has communicated with the central station. It is there for informational purposes only and cannot be accessed or changed by the operator. All information of this kind is constantly updated by the Net7000 databasing system.

The Programming Function Group

CONTROL RELAY OUTPUT

This feature controls optional relay outputs (part number 7065) at subscriber units. Using this remote control capability, an operator may open gates, activate cameras or control any device at a remote location. The basic relay output uses eight relays, but as many as 64 may be controlled.



Each relay can be individually addressed from the central station. Access the above screen by highlighting the "Control Relay Outputs" function on the Programming menu and press <ENTER>, or by pulling down the Programming menu as shown above and pressing the number <2> key. Complete the popup control form as instructed below.

THE CONTROL RELAY OUTPUT BLOCK

Using the control block illustrated at right, the operator can turn on, turn off or toggle any switch connected to the subscriber unit relay board from the central station. Each box represents a relay. If a box is left blank, no change is made in the status of the switch.

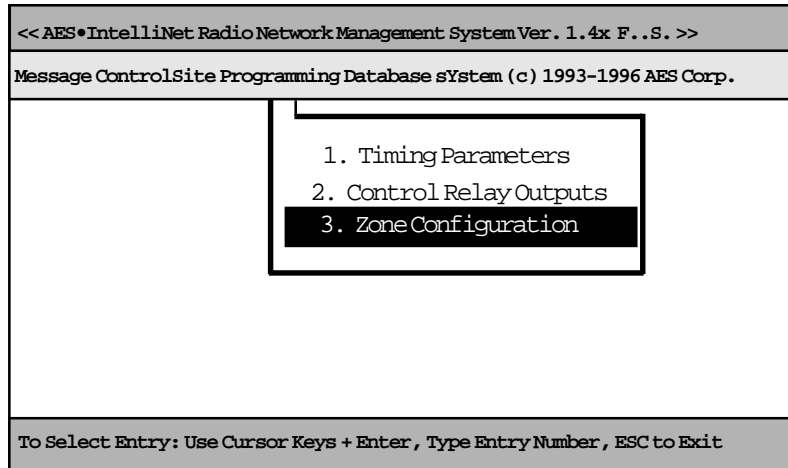
| ID # Control Relay Outputs | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|---------|----|----|----|------------|----|----|----|----|----|----|----|
| Function Keys | | | | | | | | | | | | | | | |
| <+> | | | | <-> | | | | <T> | | | | | | | |
| ☐ = ON | | | | ☐ = OFF | | | | ☐ = Toggle | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |

•USING THE CONTROL RELAY OUTPUT BLOCK Using the arrow keys, place the cursor on the box representing the relay you wish to activate or deactivate. To activate a relay, press the <+> key. To deactivate a relay, press the <-> key. To toggle a relay, press the <T> key. To make no change in the relay setting, simply pass over the box using the arrow keys. To erase to no change, press the space bar. Move through the control relay output boxes by using the arrow keys. To send the command and save it in the database, hold down the <ALT> key and press the <S> key. The relays are latching; when a function has been turned on, a separate command must be sent to turn it off.

The Programming Function Group

ZONE CONFIGURATION

This feature allows an operator to configure alarm zone inputs at a remote unit to "normally open (circuit)," "normally closed (circuit)," or "bypassed." Once the "normal" state has been programmed, it is possible for the unit to notify you of any change in the state of the alarm circuit.



Should an event occur at one of those zones, it is also possible, using the Zone Configuration feature, to request a communication from the unit upon restoral of its "normal" state. Up to 72 separate zones on each remote subscriber unit can be addressed from the central station. Access the Zone Configuration function by highlighting it on the Programming menu and hitting <ENTER>, or by pulling down the Programming menu as shown above and pressing the number <3> key. Complete the Zone Configuration control block as instructed below.

ZONE CONFIGURATION CONTROL BLOCK

The zone configuration control block at right offers five options for the programming of each alarm zone. The underlined letters below designate the state of the circuit.

1. Normally Open
2. Normally Open + Restoral
3. Normally Closed
4. Normally Closed + Restoral
5. Bypassed

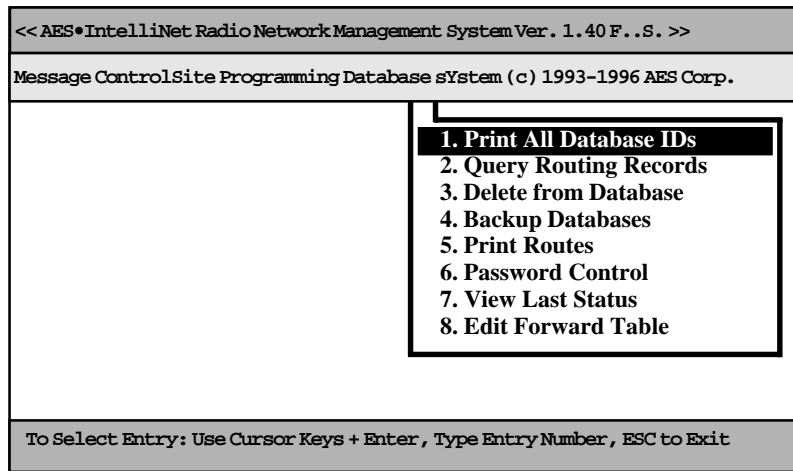
| ID # Zone Configuration | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|---------------|----------|----------|----------|----------|----------|----------|----------|----|--|--|--|--|--|--|--|
| <ALT> S When Done | | | | | | | | NO Circuit | | | | | | | | | | | | | | | |
| | | | | | | | | NO + Restoral | | | | | | | | O | | | | | | | |
| | | | | | | | | NC Circuit | | | | | | | | OR | | | | | | | |
| | | | | | | | | NC + Restoral | | | | | | | | C | | | | | | | |
| | | | | | | | | Bypassed | | | | | | | | CR | | | | | | | |
| | | | | | | | | B | | | | | | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | | | | | | |
| <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | | | | | | | | |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | | | | | | | | |
| <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | | | | | | | | |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | | | | | | | | |
| <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | | | | | | | | |
| 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | | | | | | | | |
| <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | <u>£</u> | | | | | | | | |

•USING THE ZONE CONFIGURATION CONTROL BLOCK: Using the arrow keys, place the cursor on the box representing the zone you wish to address. Each zone has two sections. The left side of the box indicates the normal state of the circuit (Open, Closed or Bypassed). The right side of the box indicates the Restoral setting. If you would like the subscriber unit to communicate a Restoral after an event, type an "R" in the right side. To make no change in the zone setting when editing a previously programmed setting, simply pass over the filled in box using the arrows on your keyboard. To send and save the zone configuration command, hold down the <ALT> and <S> keys. Zones that are not programmed will return to a default setting of Normally Open.

The Database Function Group

ACCESS

To access the Database function group, hold down the <ALT> key and press <D>. The popup screen illustrated at right will appear. Use the directional arrows on your keyboard to highlight your choice and then press <ENTER>.



NOTE: The AES•IntelliNet database automatically stores routing data on all subscriber units registered in the system. The data is stored on the computer hard drive in the subdirectory c:\aes\db. The Database function group allows the computer to retrieve information on specific subscriber units and to perform basic data "housekeeping."

| SHORTCUTS | EXPLANATIONS |
|---|--|
| <p>PRINT ALL DATABASE ID'S</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <1> | <ul style="list-style-type: none"> •This function allows the operator to print all the ID numbers in the current database. This list is identical to the ID number pick list. |
| <p>QUERY ROUTING RECORDS</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <2> •Select Target Unit | <ul style="list-style-type: none"> •This function allows the operator to check on the routing records of any given subscriber unit. Routing records are automatically updated by the Net7000 system. |
| <p>DELETE FROM DATABASE</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <3> •Select Target Unit | <ul style="list-style-type: none"> •This function allows the operator to delete the current records of any given subscriber unit. Should that unit check in at a later date, it will be automatically entered into the routing database. <p>NOTE: All specific programming for the deleted unit will revert to default settings if a deleted unit checks in again.</p> |

The Database Function Group

| SHORTCUTS | EXPLANATIONS |
|--|---|
| <p>BACKUP DATABASES</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <4> •Insert disk in drive A •Press <ENTER> | <ul style="list-style-type: none"> •This function backs up the current Net7000 database on a floppy disk. NOTE: While the Net7000 is backing up its database, all other communications are temporarily stored in a buffer. It is therefore best to carry out this function at a relatively "slow" time of day. |
| <p>PRINT ROUTES</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <5> | <ul style="list-style-type: none"> •This function allows the operator to print out all routes used by all subscriber units. Be sure, when using this function, that the printer is toggled on. If it is not, simply press <F9> to turn the printer on. |
| <p>PASSWORD CONTROL</p> <ul style="list-style-type: none"> •This function is not supported in this version of Net7000. | <ul style="list-style-type: none"> •Though not active in this version of Net7000, Password Control will soon enable the operator to add, delete or change passwords for access to different Net7000 functions. |
| <p>VIEW LAST STATUS</p> <ul style="list-style-type: none"> •Hold <ALT>, press <D> •Press <7> •Select Target Unit | <ul style="list-style-type: none"> •This function is a quick and convenient way of checking on the last known status of a subscriber unit. This information is automatically updated by the Net7000 system when each unit reports in. |

The Database Function Group / Re-Transmission

EDIT FORWARD TABLE

This function programs the computer to automatically forward messages received from specific subscriber units to one or more other subscriber units. This "re-transmitted" data can be sent to fixed subscriber units equipped with optional output devices or to Mobile Monitoring Units mounted in patrol vehicles. The operator can select what types of data are to be forwarded, such as alarms and/or check-ins, using the Forward Table "filters."

FIG. A

Send 5555 messages to:

FIG. B

<< Edit Forward Table >>

Origin ID: 5555 Forward To: 8790
 Memo: Address, etc.

Forward Filter Flags: Type Y/N

| | | | | | | | | | | |
|----------|------------|--|----|----|----|----|----|----|----|----|
| ALARM: £ | --> Zones: | | #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 |
| | | | £ | £ | £ | £ | £ | £ | £ | £ |
| ZREST: £ | --> Zones: | | #1 | #2 | #3 | #4 | #5 | #6 | #7 | #8 |
| | | | £ | £ | £ | £ | £ | £ | £ | £ |

| | | | |
|---------|----------|---------|---------|
| STAT: £ | CHKIN: £ | DATA: £ | HPBU: £ |
| TEST: £ | ZDATA: £ | VLS: £ | TEXT: £ |

Alarm Automation Message: £

Alt S to Save, Alt E to Erase All Fields, Alt D to Delete, ESC to Exit

There is also an area where the operator can type a text message (such as an address) to be forwarded along with each forwarding communication.

ACCESS: Highlight the "Edit Forward Table" on the Database Function Menu or press the <8> key. Choose the ID number of the unit whose messages you'd like to forward. In the box illustrated in Fig. A, type in the I.D. number of the unit to which you'd like to have messages forwarded. Fill out the Edit Forward Table function block (illustrated in Fig. B and explained below). Then hold <ALT> and press <S> to save the command.

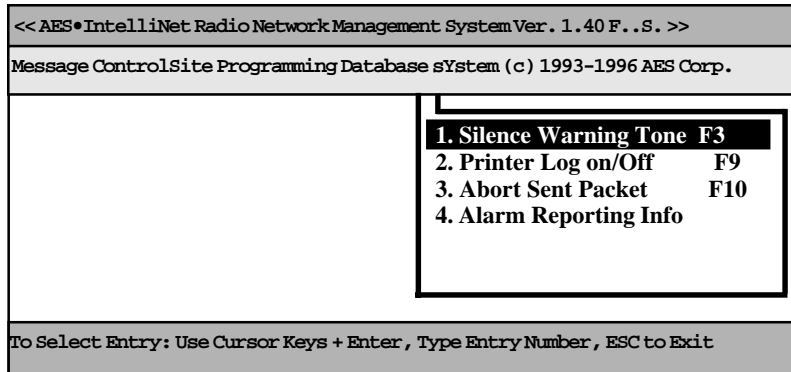
THE EDIT FORWARD TABLE CONTROL BLOCK: This function block will allow you to choose which messages to have forwarded from the unit of origin to the selected unit. See Appendix B on page 24 for more information.

- **MEMO:** This area allows the operator to send a text message along with all non Alarm Automation messages.
- **ALARM (ZONES):** If marked <Y>, the unit of origin will forward all alarm messages from the selected zones.
- **ZREST (ZONES):** If marked <Y>, the unit of origin will forward all zone restoral messages from the selected zones.
- **STAT, CHKIN, DATA, HPBU, TEST, ZDATA, VLS, TEXT:** If marked <Y>, the unit of origin will forward reports of each of these communication types to the selected receiver unit. The types are, respectively, "Status Report," "Checkin," "Data," "Host Parameter Block Upload," "Poll or Test," "Zone Data," "Vehicle Location System," and "Text."
- **ALARM AUTOMATION MESSAGE:** If marked <Y>, the unit of origin will automatically forward ONLY computer formatted alarm automation messages. If left blank or marked with <N>, text messages can be sent. Alarm Automation applies only to the Alarm, Restoral, Status and Checkin fields. **Forwarded data is NOT FOR PRIMARY MONITORING use.**

The Systems Function Group

ACCESS

The Systems Function group menu can be accessed by holding <ALT> and pressing <Y>. All but one of the Systems functions can be accessed, as well, by pressing the function key (i.e. <F3>) assigned to that function.



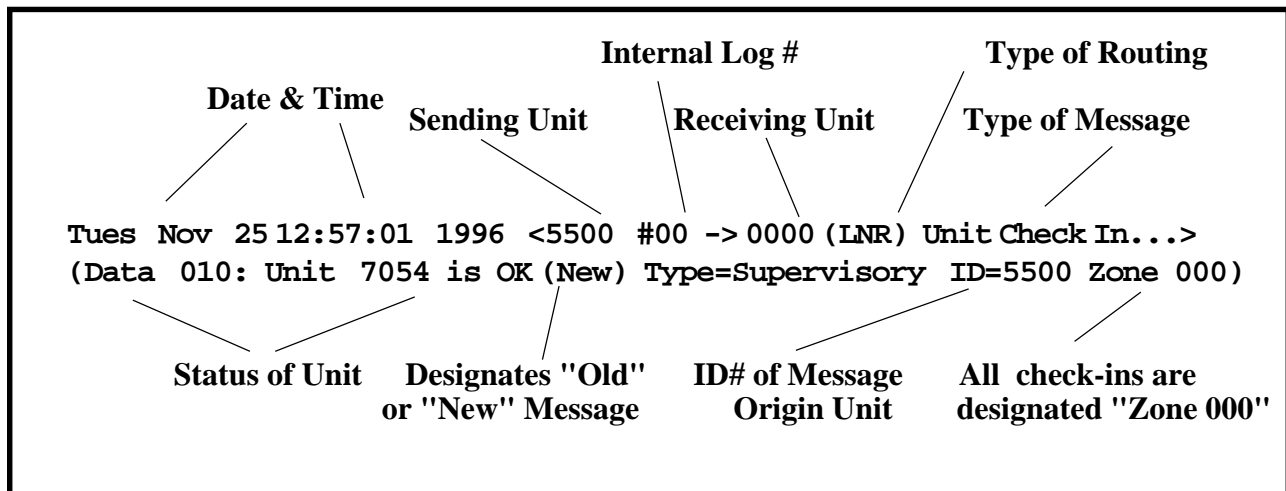
| SHORTCUTS | EXPLANATIONS |
|---|--|
| <p>SILENCE WARNING TONE</p> <ul style="list-style-type: none"> • Press <F3> | <ul style="list-style-type: none"> • This function silences the warning tone that sounds whenever monitoring mode is changed to either remote or local (a Concentrator function-see page 23 for more on the Concentrator). It also silences the tone that warns of a function failure or error. |
| <p>PRINTER LOG ON/OFF</p> <ul style="list-style-type: none"> • Press <F9> | <ul style="list-style-type: none"> • This function toggles the printer on and off. <p>NOTE: Remember to turn on the printer when using any of the printer functions.</p> |
| <p>ABORT SENT PACKET</p> <ul style="list-style-type: none"> • Press <F10> | <ul style="list-style-type: none"> • This function allows an operator to quickly cancel a packet sent to a subscriber unit. |
| <p>ALARM REPORTING INFO</p> <ul style="list-style-type: none"> • Press <6> • Complete table • Hold <ALT>, press <S> | <ul style="list-style-type: none"> • This feature (a Concentrator Alarm Automation Forwarding function), enables the operator to program a different account reference number for alarm reporting in the event of remote monitoring. |
| | <p>NOTE: The AES•IntelliNet Concentrator is explained on page 23.</p> |

Interpreting Screen Messages

BASIC SCREEN COMMUNICATIONS

The network communications which scroll up your monitoring screen are really unscrambled data packets as sent and received by the command station. Once the basic codes are understood, the messages are clear and easy to interpret.

SAMPLE CHECK IN MESSAGE:



WHO, WHAT, WHEN, WHERE...

The following information can be extracted from the sample message above:

- The message was sent on November 25, 1996 at 12:57:01.
- The message was sent by subscriber unit #5500.
- The message was received by Unit #0000 (the designation for the central station unit).
- This message is a Unit Check In. It is simply telling you, on schedule, that all is well.
- The type of routing used by the unit in its communication.
 - (EXR): an explicit route was specified by an operator or computer.
 - (LNR): automatic routing was used.
 - (LNRT): automatic routing was used, but a trace was placed on the route.
- "Data" refers to all the information this communication contains. In this case, the data indicates that the unit is fine.
- The direction of data flow has also been established. The unit ID before the "->" is the originating unit and the one after the "->" is the destination unit.

Interpreting Screen Messages

SAMPLE TEXT MESSAGE, USING ANOTHER SUBSCRIBER AS REPEATER

```
Tues Mar 08 09:54:40 1995 <0000 #98 -> 8970 (EXR) Text Data...>
  Enroute Via ->5500>
(Data 011: Hello
Tues Mar 08 09:54:40 1995 <5500 #98 -> 0000 (LNR) Packet Acknowl-
edged...>
(Data 000: )
Tues Mar 08 09:54:41 1995 <0000 #98 -> 8970 (LNR) Text Data...>
  Via -> 5500>
```

WHO, WHAT, WHEN, WHERE...

The above example shows a text message being sent to a subscriber unit via another unit.

- The message originated from the central station unit #0000 (shown on line 1, above)
- The message was sent to subscriber unit #8970 using an explicit (EXR) route (line 1) through subscriber unit #5500(line 2). Subscriber unit #5500 is acting, in this exchange, as a repeater.
- The message was acknowledged by unit #5500, acting as a repeater (lines 3 & 4)
- Note that when a message is being transmitted from the central station, the words "Enroute Via" appear. When a message is being transmitted through an intermediary unit, the word "Via" appears.
- **NOTE:** Consecutive transmissions alternate in color from yellow to white on your screen. This feature exists only to make the distinction between transmissions clearer. It is not an indication of the transmission's origin.

Interpreting Screen Messages

SAMPLE ALARM MESSAGE:

```
Tues Mar 08 10:37:46 1995 <7003 #12 -> 0000 (LNRT) Alarm...>
Data 007: (New) Type= Alarm ID= 7003 Zone 003
Tues Mar 08 10:37:46 1995 <0000 #12 -> 7003 (LNR) Packet Acknowledged...>
Data 000: )
```

WHO, WHAT, WHEN, WHERE...

The above illustration is a sample of an alarm message and acknowledgment. The following information can be extracted from this message...

- The alarm event occurred at 10:37:46 1995 (line 1).
- The subscriber unit reporting the alarm event is ID # 7003 (line 1).
- The message type is an alarm (lines 1 & 2).
- The alarm event occurred in Zone 3 of the subscriber unit (line 2).
- The alarm transmission is described as "New" (line 2). This means that the alarm was not previously transmitted. If the same alarm event had been transmitted before, the notation would have read "Old."
- The alarm event transmission was acknowledged by a message from the central station unit #0000 (lines 3 & 4). This is indicated by the phrase "Packet Acknowledged" (line 3).
- **NOTE:** All alarm event transmissions from the unit of origin appear in red on your screen.

COMMON MESSAGE TYPES

The following is a list of common message types and explanations

| | |
|--------------------------------|---|
| Packet Acknowledged | Information received correctly by destination unit |
| Packet Not Acknowledged | Information not received correctly by destination unit. |
| Packet Rejected | Information received, but cannot be accepted. |
| Receiver Not Ready | Unit cannot receive data. |
| Receiver Ready | Unit capable of receiving data. |

Interpreting Screen Messages

| | |
|----------------------------------|---|
| Request for Reply | Unit gathering repeater data; building routing database. |
| Receiver Not In Service | Unit not operating until further notice. |
| Request for PBU | Request for parameter information. |
| Parameter Block Upload | Delivery of parameter information. |
| Receiver Status | Check in caused by subscriber unit equipment fault. |
| Alarm | Alarm event transmission. |
| Status | Status transmission. |
| Unit Check In | Scheduled transmission of status. |
| Data | All information sent by unit or central station. |
| Host Parm Upload | Central station request for parameter information. |
| Fault Code | Fault at subscriber unit (see fault code list in the AES•IntelliNet Central Station manual. |
| Test | Poll of subscriber unit. |
| Zone Restoral | Report of return to normal status. |
| Zone Data | Non-alarm zone data from subscriber unit. |
| Vehicle Location Sys | GPS system information. |
| ASCII Data | Text message. |
| Data Confirmation | Message confirmation in case of multiple repeaters. |
| Route Failed | Transmission through designated route not possible. |
| Subscriber Poll | Test of subscriber unit. |
| Subscriber Poll + Routing | Test of subscriber unit with routing trace. |
| Subscriber Tx Off | Subscriber unit disabled. |
| Subscriber Tx On | Subscriber unit enabled. |
| Subscriber Reset | Subscriber unit hardware reset. |
| Subscriber Requests PBU | Central station request for parameter block information from subscriber unit. |
| Subscriber Parm Upload | Subscriber unit delivers parameter block information to central station. |
| Subscriber Trace On | Subscriber traces all routes. |
| Subscriber Trace Off | Subscriber does not trace routes. |
| Alarm Retransmission | Forwards alarm directly to another location (Fire Dept., Police Dept., etc.) |

The 7150 AES Concentrator

SPECIAL CONCENTRATOR FEATURES

The AES 7150 Concentrator is an upgrade for the AES•IntelliNet central station software and hardware. It enables an AES Net7000 system to relay alarm data to a remote monitoring location via telephone lines.

The special Concentrator software provides several key functions:

- It "concentrates," or stores check-in messages for later transmission, allowing for efficient use of telephone line time. The software can be configured to concentrate as few as one or as many as 400 such messages before downloading to the central station. Also, an "anti-stale" download function can be programmed to ensure that downloads are made on a regular basis.
- It instantly forwards all alarm messages to the remote monitoring site.
- It allows the use of up to six outbound phone lines or modems (two modems are supplied).
- It will automatically try up to ten phone numbers, through up to six modems. Furthermore, if a phone number or phone line is consistently found to be unusable, the software disregards it and uses an alternate number or line.
- It provides flexibility. You may choose to use "local" or "remote" modes for the monitoring of your alarm activity. The system automatically changes over to the opposite mode if it detects a problem. Current system mode is always noted on the basic monitoring screen.
- It provides password protection to prevent unauthorized access.

Appendix

A: SOFTWARE MODES

There are several software options available from AES Corporation for the Net7000 software system. The software option mode currently in use is noted on the upper right of the screen, using the following abbreviations:

- **F**: Forwarding mode
- **Pt**: Partial forwarding mode.
- **C**: Concentrator mode
- **L**: Local monitoring mode
- **S**: Supervision mode
- **A**: ArcView version of IntelliTrak
- **K**: Klynas version of IntelliTrak
- **D**: Dice version of IntelliTrak

B: EDIT FORWARD TABLE FUNCTION

This function is limited to 2 subscriber units and is intended as a sampler. Contact AES for more information on the message forwarding and retransmission software.