Naztec Operations Manual

For

Chronomax Pager System

Version 1.7

April 2003

Published by:

Naztec, Inc. 820 Park Two Drive Sugar Land, Texas 77478 Phone: (281) 240-7233 Fax: (281) 240-7238

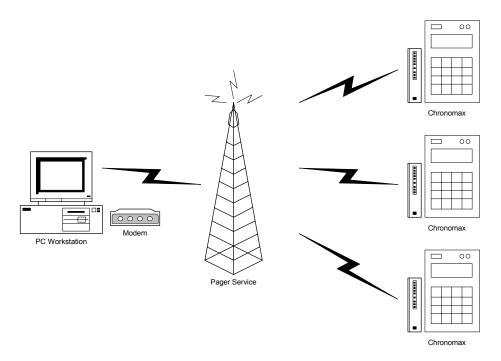


Table of Contents

1.	Introduction	
	1.1 System Overview	2
	1.2 System Highlights	
	1.2.1 Backwards Compatible	
	1.2.2 Fully Functional Time Switches	
	1.2.3 Once a Year Paging	
	1.3 Terminology	
2	Yearly Operation Mode	
۷.	2.1 Basic Setup	
	2.1.1 Chronomax Setup	
	2.1.2 Modem Setup	
	2.1.3 Verification Unit Setup	
	2.2 Configuring a New Zone	
	2.3 Configuring a New ID	
	2.4 Editing a Database	
	2.5 Downloading a Database	
	2.6 Editing an Alternate Plan	
	2.7 Downloading an Alternate Plan	
	2.8 Downloading Time of Day	. 12
	2.9 Downloading Manual Flash Output Commands	
3.	Menu Reference	. 14
	3.1 Edit Menu	. 14
	3.1.1 Zones	
	3.1.2 IDs	
	3.1.3 Database	
	3.1.4 Database Sub-Section Descriptions	
	3.2 Download/Transfer Menu	
	3.2.1 Database	
	3.2.2 Time of Day	
	3.2.3 Alternate Plan	
	3.2.4 Manual Flash	
	3.2.5 Zone Change	
	3.2.6 Direct	
	3.2.7 Auto Enable	
	3.3 Status Menu	
	3.3.1 Verification	
	3.3.2 History	
	3.4 Export	
	3.4.1 Zone List	. 31
	3.4.2 ID List	. 32
	3.4.3 Today's Day Plan	
	3.5 On-Call	
	3.5.1 Page Selected Tech	
	3.6 File Menu	
	3.6.1 System Setup	
	3.6.2 Technician Setup	
	3.6.3 Auto Download Setup	
	3.6.4 Exit	. 35
	V-V-T L-00	

1. Introduction

1.1 System Overview



The Chronomax Pager System utilizes the existing pager infrastructure and a pager module to enable the user to conveniently update time clock schedules, or override the schedule for emergency situations. Via the pager system, all four exception databases, the schedule database, the alternate plan schedule, and individual control of the beacons may be downloaded.

Typical use of the system involves the following basic steps:

- 1. School Zones are created by choosing a 'Zone ID' and 'Zone Location'. This data is entered into the software, which compiles a list of zones that can be sorted for later reference.
- 2. Chronomax Switches are assigned 'IDs' and 'ID Locations'. They are also linked to a particular school zone. This allows the user to identify an individual clock in a zone, and access it.
- 3. School Zone 'Databases' are edited to reflect the desired operating schedule. All zones are automatically assigned a database when the zone is defined. This step simply includes modification of the existing database to reflect the desired operation.
- 4. 'Downloading' a database usually takes place after all of the zones' databases have been defined. The user may download to all zones, or a specific zone.
- 5. Updating time can be done any time. However, it is the recommended last step in the typical setup scenario.

Once each of these five steps has been successfully completed, the Chronomax Pager System will be fully operational. It will then be possible to modify any database or download an alternate plan that will override the current schedule for the day.

1.2 System Highlights

1.2.1 Backwards Compatible

The Chronomax pager system offers the Chronomax user the fastest and most convenient upgrade path available. All Chronomax units ever manufactured may be made 'pager ready' by a simple software change and the addition of a pager module. This means that a customer may purchase Chronomax time switches and upgrade them to a pager system at their convenience.

1.2.2 Fully Functional Time Switches

The Chronomax pager system utilizes complete time switches. This maximizes unit autonomy and reliability. Any unit may be added or removed from the system without needing to change out the hardware. All units can be used in a traditional stand-alone scenario. The main advantage to this approach is that if any of the associated pager components or the service provider were to fail, then the time switches may be used in the traditional manner until the system is back on line.

1.2.3 Once a Year Paging

Since the system utilizes a complete time switch, the user may then take advantage of the availability of a full-feature database. This means that all holiday entries and days of operation may be entered and the complete database downloaded once. There is no need for weekly or daily updates, unless an emergency arises, at which time the user may individually control the beacons or override the schedule for the day. This also generates the minimal number of pages. In areas where the service provider charges for excess pages, this greatly reduces operating costs.

1.3 Terminology

The following is a list of simple terminology. It will help clarify descriptions and discussion.

Zone – a group of time switches usually located around a single school.

Zone ID – a four-digit number assigned to a 'Zone', or group of time switches.

Zone Location – a description of the physical location of the 'Zone', or group of time switches.

Time Switch – the field unit that executes the user commands in order to operate the beacons.

ID – a four-digit number assigned to a 'Time Switch'.

ID Location – a description of the physical location of the 'Time Switch'.

Database – the user program that controls the operation of the 'Time Switch'.

Downloading – the act of sending the database to the field unit via the pager service.

Schedules – a segment of the database that indicates the days of the week and the times at which the field unit turns on and off the beacons.

Exceptions – a segment of the database that controls the days of the year in which time switch forces all outputs off.



2. Yearly Operation Mode

The following sections will take you through a step-by-step typical operation/setup sequence for the Yearly Operation Mode. The Yearly Operation Mode is the advised way to use the system. It only requires one database download per year, and then updates on an as needed basis.

These sections only cover the material needed to complete the steps. Each menu option has a detailed discussion in the Menu Reference chapter. These sections are brief and meant for simplifying the process. A new user should closely consult the Menu Reference section and the Time Switch manual as they proceed through this process.

2.1 Basic Setup

2.1.1 Chronomax Setup

Only a few simple items need to be setup inside the Chronomax Time Switch to prepare it for pager operation. Consult the Chronomax manual for specifics on how to enter these entries.

Zone ID (Comm Setup) – this entry is chosen by the user and should contain the four-digit number that identifies a particular zone location.

ID (Comm Setup) – this entry should contain a unique four-digit number that is only assigned to a single time switch.

Baud Rate (Comm Setup) - for pager mode, the baud rate should be set for '9600'.

Pager Mode (Clock Parameters) – the pager mode entry should indicate 'On'.

Duty Cycle (Clock Parameters) – for DC applications this entry should be '40%', and '00%' for AC.

Daylight Saving Time (Daylight Savings) – if your area of the country utilizes daylight savings, then the entries should be 'MM=4 Sun 1' and 'MM=10 Sun L'.

2.1.2 Modem Setup

The modem allows the PC software to dial the service provider and transfer the downloading messages.

The system comes with a modem. It is recommended that the user does not use another modem. Pager services that are TAP compliant only require a 2400 Baud modem. Most modems on the market greatly exceed that speed at the expense of detailed setup. The system-supplied modem is a simple 2400 Baud external modem. The software expects to see this particular modem.

Since the software is pre-configured for a specific modem, then the only concerns for the user are that the modem is powered up and cabled to the proper serial port. The Edit -> Setup menu option allows the user to select the serial port to which the modem will be connected.

2.1.3 Verification Unit Setup

The verification unit is used to receive pages transmitted by the paging service provider. When a page is sent to the field units, the verification unit also receives that page. The computer then retrieves the page and compares the data with that which was just sent. If the data matches,

then the computer knows that the service provider successfully transmitted the page. If the pager does not match, then the computer can re-transmit the data.

The user of the unit simply needs to ensure that the unit is cabled into the proper serial port, and the transmit redundancy setting is set to the desired value. The redundancy setting indicates to the computer how many successful transmissions must be completed for each download. Put simply, it is the number of times that a message is sent out.

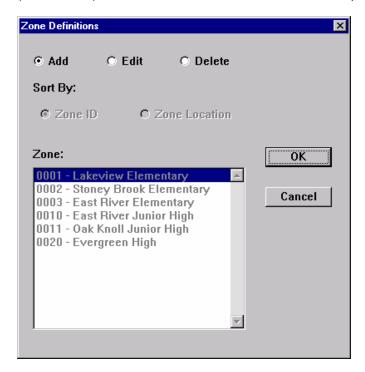
All of the verification unit settings can be found from the Edit→Setup menu option.

2.2 Configuring a New Zone

This section covers the specifics of creating a new zone. For more detailed information on adding, editing, and deleting, consult the chapter for Menu Reference.

A zone (school zone) is a group of time switches that share a common database. Typically the time switches are all clustered in a single physical locale. The system operates by associating a user-entered database with a zone. Therefore, each school zone only has one database that is transmitted to all of the time switches in that zone.

However, before a database may be entered or downloaded, it is necessary to create a zone (school zone). This is done from the Edit→Zone menu option.



The following instructions will add a zone:

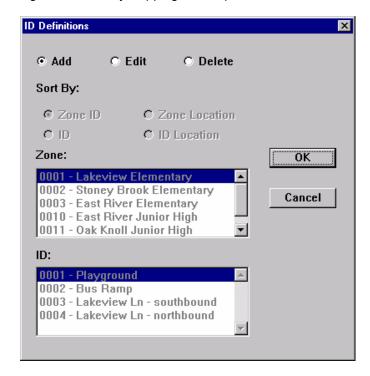
- 1. Select the "Add" radio button
- 2. Click the "OK" button
- 3. A new screen should appear with "Add Zone" on the title bar
- 4. Enter in the four-digit zone number (0001-9999). Use a unique number for each zone.
- 5. Enter in a description of the zone (i.e. Lakewood Elementary)
- 6. Verify that the data entered is correct
- 7. Click the "OK" button

8. The newly entered zone should appear in the list box. Select the "Edit" radio button to be able to scroll the list box.

2.3 Configuring a New ID

This section covers the specifics of creating a new time switch ID. For more detailed information on adding, editing, and deleting, consult the chapter for Menu Reference.

A time switch ID is a way of uniquely identifying all time switches in a jurisdiction. It also allows the user to organize the system by associating IDs with a particular zone. Alternate plans and beacon overrides may be transmitted on a per clock basis. Entering an ID number for each time switch is only necessary if you intend to address a clock individually, otherwise you can save significant time by skipping this step.



The following instructions will add an ID:

- 1. Select the "Add" radio button
- 2. Click the "OK" button
- 3. A new screen should appear with "Add ID" on the title bar
- 4. Enter in the four-digit ID number (0001-9999). Use a unique number for each time switch.
- 5. Enter in a description for the location (i.e. Playground, Bus Ramp)
- 6. Select the zone to which the time clock belongs from the pull-down list
- 7. Click the "OK" button
- 8. Select the "Edit" radio button
- 9. Select the "Sort By: ID" radio button
- 10. Move the slider bar in the list box to ensure that your entry was successfully made

Successfully executing these steps will create a new time switch ID.

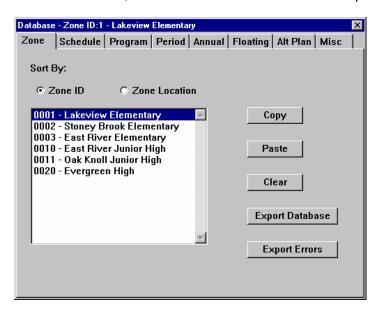
2.4 Editing a Database

This section covers the specifics of editing a school zone database. For more detailed information on adding, editing, and deleting, consult the chapter for Menu Reference.

Each school zone stores an associated database and alternate schedule. That database may be edited at anytime, and transmitted to the zone. One thing that should be kept in mind is that a zone database must be saved prior to downloading the new information. This, however, is done by default since the software requires the user to either save or discard edits each time they exit the editing screen.

Each database has six sub-sections. These sub-sections mimic the six database sub-sections found in the time clock itself. Consult the Menu Reference section for detailed information on the meaning of each database sub-section.

To edit a database, start from the Edit→Database menu option.



The following instructions will edit a database:

- 1. Select the "Zone" tab
- 2. Select the desired "Sort By:" radio button
- 3. Highlight the desired zone by clicking it with the mouse
- 4. Select the tab that identifies the sub-section you wish to edit
- 5. While inside the sub-section, click "Previous" and "Next" to move between entries
- 6. When satisfied with your changes, close the screen by clicking the 'X' in the top right corner
- 7. A prompt will appear asking if you wish to save your changes, choose "Cancel" to return to editing, "Yes" to exit and save, "No" to exit without saving.

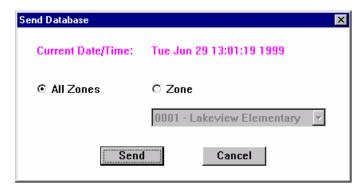
Successfully executing these steps will create/edit a school zone database.

2.5 Downloading a Database

This section covers the steps required to download a school zone database. For detailed information on this menu option, consult the Menu Reference chapter of the manual.

Once a single database or all databases have been edited to satisfaction, the user may then proceed to download them. Downloading a database can only be accomplished on a per zone basis. Since each time switch is identified by a zone number that associates it to it's physical school zone location, and each school zone unit typically operates on the same schedule, then it is natural that databases should be downloaded on a per zone basis.

To edit a database, start from the Download→Database menu option.



The following instructions will transmit a database:

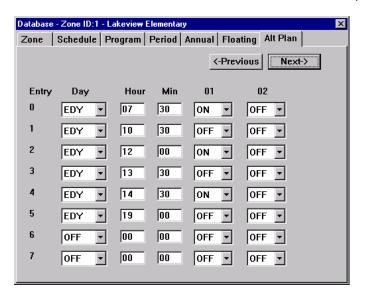
- 1. Select "All Zones" to transmit all databases or "Zone" to transmit a particular school zone.
- 2. If "Zone" is selected, then use the pull-down list box to highlight the desired zone
- 3. Once the zone is highlight, select "Send" to begin the transmission
- 4. A verification screen should appear that indicates the status of the transmission
- 5. Once all database messages are sent, the verification screen will remain until closed. However, closing is not necessary to proceed with using the software.

2.6 Editing an Alternate Plan

This section covers the specifics of editing an alternate plan. This is identical to the step-by-step process of editing a database. For more detailed information on adding, editing, and deleting, consult the chapter for Menu Reference.

Each school zone stores an associated alternate plan. That alternate plan may be edited at anytime, and transmitted to the zone. One thing that should be kept in mind is that an alternate plan must be saved prior to downloading the new information. This, however, is done by default since the software requires the user to either save or discard edits each time they exit the editing screen.

To edit a database, start from the Edit → Database menu option.



The following instructions will edit an alternate plan:

- 1. Select the "Zone" tab
- 2. Select the desired "Sort By:" radio button
- 3. Highlight the desired zone by clicking it with the mouse
- 4. Select the "Alt Plan" tab to bring up the alternate plan sub-section
- 5. While inside the sub-section, click "Previous" and "Next" to move between entries
- 6. When satisfied with your changes, close the screen by clicking the 'X' in the top right corner
- 7. A prompt will appear asking if you wish to save your changes, choose "Cancel" to return to editing, "Yes" to exit and save, "No" to exit without saving.

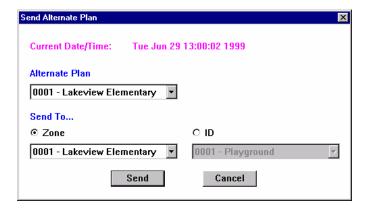
Successfully executing these steps will create/edit an alternate plan.

2.7 Downloading an Alternate Plan

This section covers the steps required to download an alternate plan. For detailed information on this menu option, consult the Menu Reference chapter of the manual.

Downloading an alternate plan causes the time switch to change into another mode of operation – the alternate plan mode. When the alternate plan mode is active, the time switch will ignore all standard database programming such as the schedule and holidays/exceptions. When making the minute-by-minute decisions, the time switch will only consider the commands in the alternate plan. When this plan is activated, it remains activated until midnight of the day in which it was sent. Updating the time after sending an alternate schedule will not affect the pager's mode – the unit will remain in the alternate mode until midnight.

To download an alternate plan, start from the Download → Alternate Plan menu option.



The following instructions will transmit an alternate plan:

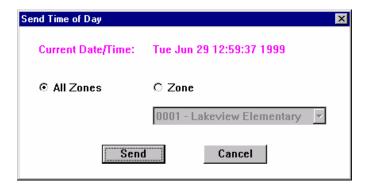
- 1. Select the source of the alternate plan from the pull-down list box
- 2. Select the target type radio button, "Zone" or "ID". "Zone" will send the alternate schedule to all time switches in the school zone, while "ID" will send the schedule to a specific time switch
- 3. From the pull-down list box, select the target
- 4. Click "Send" when the target and source are properly highlighted
- 5. A verification screen will appear that shows the status of the data transmission
- 6. Once the page is verified, the status screen will remain open until closed.

2.8 Downloading Time of Day

The last action to be made after downloading an alternate plan database is to update the time of day. The time of day transmission causes the unit to enter a search back mode in order to establish the proper state that the time switch should be in. This should be done last, because the process can be time consuming.

The time sent to the time switch is derived from the computer's system clock. Be sure that the computer's time of day is properly set prior to sending the time of day download.

To download the correct time of day, start from the Download→Time of Day menu option.



The following instructions will transmit the time of day:

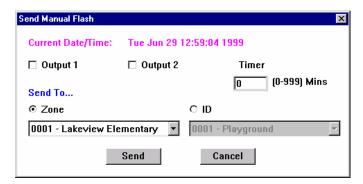
- 1. Select "All Zones" to transmit all databases or "Zone" to transmit a particular school zone
- 2. If "Zone" is selected, then use the pull-down list box to highlight the desired zone
- 3. Once the zone is highlighted, select "Send" to begin the transmission
- 4. A verification screen should appear that indicates the status of the transmission. Once all database messages are sent, the verification screen will remain until closed. However, closing is not necessary to proceed with using the software.

2.9 Downloading Manual Flash Output Commands

The user may turn each of the time switch's outputs on at any time. The user may also select the number of minutes for which the outputs will remain on. An important detail to be mindful of is the fact that the manual flash command does not override the holiday/exception entries nor does it override the schedule entries. This is done as a precautionary measure to prevent a zone from accidentally being left on, and to prevent manual control from conflicting with the entered schedule. If the user wishes to override the current schedule, then provisions have been made for this by transmitting an alternate plan.

If the user does utilize the manual flash command, then the outputs will remain in the commanded state for the designated amount of time until a schedule event occurs that changes the states, or unless a holiday/exception is active.

To download a manual flash command, start from the Download → Manual Flash menu option.



The following instructions will transmit a manual flash command:

- 1. Select "ID" to transmit a specific time switch or "Zone" to transmit a particular school zone
- 2. Use the pull-down list box to highlight the desired Zone/ID
- 3. Select which outputs you wish to turn on
- 4. Enter the number of minutes that you wish the output to remain on
- 5. Once the zone is highlighted, select "Send" to begin the transmission
- A verification screen should appear that indicates the status of the transmission. Once all database messages are sent, the verification screen will remain until closed. However, closing is not necessary to proceed with using the software.

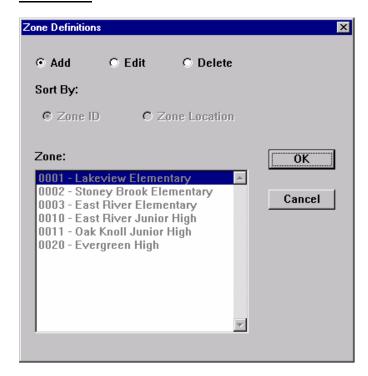
3. Menu Reference

The menu reference chapter covers the intricate details of each menu option. Here you can find information for advanced usage.

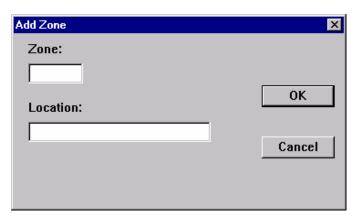
3.1 Edit Menu

The edit menu provides the options to edit/configure school zones, time switch IDs, and school zone databases.

3.1.1 **Zones**



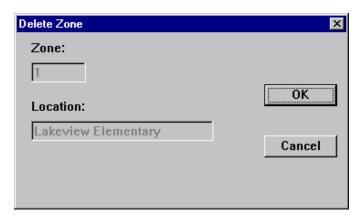
1.1.1.1 Adding a Zone



- 1. Select the "Add" radio button
- 2. Click the "OK" button
- 3. A second screen should appear with "Add Zone" on the title bar
- 4. Enter a unique Zone number (0001-9999)

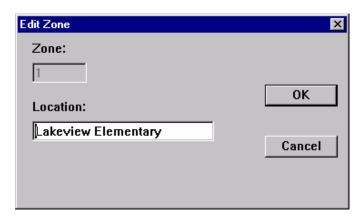
- 5. Enter a description of the Zone (i.e. Lakewood Elementary)
- 6. Click the "OK" button
- 7. Select the "Edit" radio button
- 8. Verify that the entry appears in the list box

1.1.1.2 Deleting a Zone



- 1. Select the "Delete" radio button
- 2. Choose the method for sorting the existing Zones (by ID, by Location)
- 3. Use the mouse to highlight the Zone to be deleted
- 4. Click the "OK" button
- 5. A second screen should appear with "Delete Zone" in the title bar
- 6. Verify that this is the zone you wish to permanently delete. The database will also be permanently deleted.
- 7. Click the "OK" button

1.1.1.3 Editing a Zone

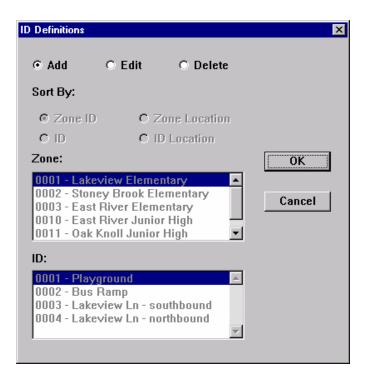


- 1. Select the "Edit" radio button
- 2. Choose the method for sorting the existing Zones (by ID, by Location)
- 3. Use the mouse to highlight the Zone to be edited
- 4. Click the "OK" button
- 5. A second screen should appear with "Edit Zone" in the title bar
- 6. Notice that you are unable to edit the zone number. See the discussion below for more information on editing a Zone number.
- 7. Change the location description information as desired
- 8. Click the "OK" button

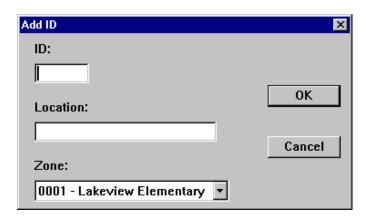
1.1.1.4 Editing a Zone number

It is intentional that the user is unable to edit a zone number. Changing a zone number would not only introduce the possibility of a duplicate zone, but will also cause all of the existing time switch IDs to become disassociated with the zone. In addition, if units were already deployed in the field, then it would require personnel to modify the assigned zone number − basically defeating the system. Simply put, zone numbers may not be edited. However, if you wish to change a zone number, but not lose the information contained within the database, it is possible to copy a zone's information into a new zone that has the desired number. To do this, create a new zone, then go to the Edit→Database menu option and copy the database from the old zone number into the new zone number. After all of the information is copied over, delete the old zone.

3.1.2 IDs

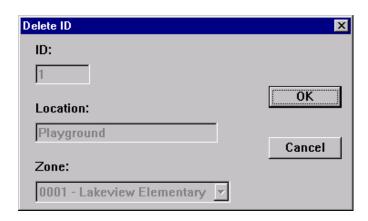


3.1.2.1 Adding an ID



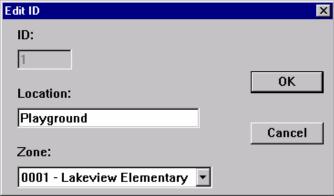
- 1. Select the "Add" radio button
- 2. Click the "OK" button
- 3. A second screen should appear with "Add ID" on the title bar
- 4. Enter a unique ID number (0001-9999)
- 5. Enter a description of the location (i.e. Playground, Bus Ramp)
- 6. Select the school zone to which the ID will be associated
- 7. Click the "OK" button
- 8. Select the "Edit" radio button
- 9. Choose the desired sort method
- 10. Verify that the entry appears in the list box

3.1.2.2 Deleting an ID



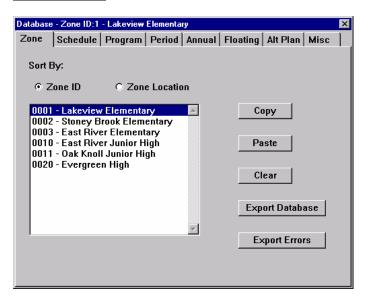
- 1. Select the "Delete" radio button
- 2. Choose the method for sorting the existing IDs (by ID, by Location)
- 3. Use the mouse to highlight the ID to be deleted
- 4. Click the "OK" button
- 5. A second screen should appear with "Delete ID" in the title bar
- 6. Verify that this is the zone you wish to permanently delete.
- 7. Click the "OK" button

3.1.2.3 Editing an ID



- 1. Select the "Edit" radio button
- 2. Choose the method for sorting the existing ID (by ID, by Location)
- 3. Use the mouse to highlight the ID to be edited
- 4. Click the "OK" button
- 5. A second screen should appear with "Edit ID" in the title bar
- 6. Notice that you are unable to edit the ID number
- 7. Change the location description information as desired
- 8. Change the zone assignment as desired
- 9. Click the "OK" button

3.1.3 Database



3.1.3.1 Selecting a Zone

- 1. Click the "Zone" tab at the top of the database editing screen
- 2. Click the "Sort By:" radio button to select zone sorting method
- 3. Select a school zone from the list box. When the new zone is highlighted, the database is immediately loaded, and the user is prompted to save or discard changes from prior modified zone databases.

4. If prompted to save changes, choose "Yes" or "No". "No" will discard all changes since last saving, and "Yes" will immediately save changes.

3.1.3.2 Editing a Sub-Section

- 1. Select the desired school zone whose database you wish to edit
- 2. Select the tab of the appropriate sub-section at the top of the screen
- 3. Modify each field by selecting from the pull-down options or entering numeric data
- 4. Use the "Next" or "Previous" button to move to the next set of 8 entries
- 5. To save changes, either close the window or select a new zone. At that time, you will be prompted as to whether or not you wish to save or discard changes.

3.1.3.3 Clearing a Database

- 1. Select the desired school zone whose database you wish to clear
- 2. Select the "Clear" push button to zero all entries in the database
- 3. To save changes, either close the window or select a new zone. At that time, you will be prompted as to whether or not you wish to save or discard changes.

3.1.3.4 Copying a Database

- 1. Select the desired school zone whose database you wish to copy
- 2. Select the "Copy" push button to put the database on the clipboard
- 3. Select the desired school zone to which you wish to paste the database
- 4. Select the "Paste" push button to copy the contents of the clipboard into the database
- 5. To save changes, either close the window or select a new zone. At that time, you will be prompted as to whether or not you wish to save or discard changes.

3.1.3.5 Saving Changes

- 1. Complete all editing changes
- 2. Select the "Zone" tab at the top of the screen
- 3. In the list box, choose another zone location
- 4. After you highlight the new zone, you will be prompted to save or discard changes before loading the new zone

or

- 1. Complete all editing changes
- 2. Close the editing window by pressing the 'X' at the top right corner
- 3. You will be prompted to save or discard changes

3.1.3.6 Export Database

The Export Database button allows the database for the currently selected zone to be exported to a text file. Selecting the button will activate a text editor and display the database text file. The file may be saved by selecting FILE, SAVE AS from the editor's menu, and typing in the desired name for the file.

3.1.3.7 Export Errors

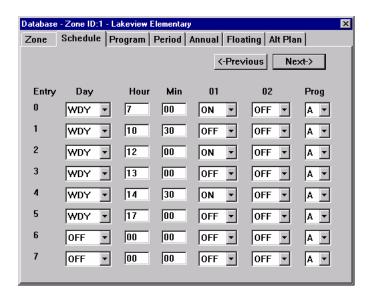
The Export Errors feature allows database error checking and reporting. Selecting the Export Errors button will run an error check on the selected zone. The results will appear in a text editor window. Results may be then be saved by selecting FILE, SAVE AS from the editor's menu, and typing in the desired name for the file.

3.1.4 Database Sub-Section Descriptions

The database is broken into six sub-sections – Schedule, Program, Period, Annual, Floating, and Alternate Plan. The first five sections, Schedule through Floating, compose the core of the time switch's database.

The following sections describe each database sub-section in detail.

3.1.4.1 Schedule



The schedule is the portion of the database responsible for the minute-to-minute actions of the time switch. There are a total of 64 entries available, ranging from 0-63. Each entry requires the user to enter the day or week, time of day, program number, and the output action to take place at that minute.

Day of Week

The day of week indicates which day(s) of the week that this entry will be active.

Abbr.	<u>Meaning</u>	Abbr.	<u>Meaning</u>
	Off	Fri	Friday
Sun	Sunday	Sat	Saturday
Mon	Monday	Edy	Everyday
Tue	Tuesday	Wdy	Weekday
Wed	Wednesday	Wnd	Weekend
Thu	Thursday		

Time of Day

The time of day is entered in HH:MM format. When the day matches the indicated day, and the time of day matches the indicated time, the outputs will obey the designated action if the program is active. The time is entered in 24-hour format so as to not introduce possible confusion between AM and PM.

Program

Each schedule entry is given a program letter (A-P). A program is simply a period of operation. In other words, it is a range of dates for which the entry will be active. As an example, summer school may span a range of dates such as June 1 – August 30, and the regular school year may span a range such as September 1 – May 30. If the user desired the clock to obey a different set of time of day actions during summer school as opposed to the regular school year, then two

programs would be defined. The first program might be designated program 'A', which would cover the regular school year, and the other may be 'B' which would cover the summer. In the 'Program' sub-section of the database, the user assigns the operation dates to each program letter. The unit defaults all entries to 'A' to expedite data entry.

Output Action

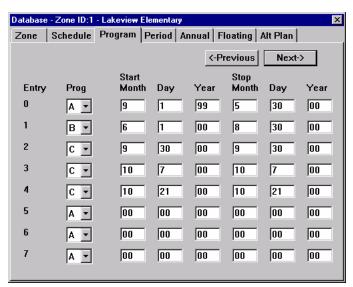
For each schedule entry, the user must also designate the state of each output. If the unit is operating in the DC mode (50% duty cycle), then both outputs are not treated independently. Only in AC mode, where the unit is controlling relays (00% duty cycle), can each output be configured to operate independently. When the day of week, time of day, and the assigned program are all aligned/active then the time switch executes the output action.

Abbr. Meaning

Y Yes, On, turn the output on No, Off, turn the output off

X No Change, do not alter the state of the output.

3.1.4.2 Program



A program associates a letter (A-P) to a range of dates. These letters are then assigned to the various schedule entries to select the dates through which the entry is active. Each of the 32 entries (0-31) may be assigned any program letter or range of dates. A single program may occupy all dates, or the total entries may be divided among any group of the 16 available (A-P). Each program range is designated with a start and stop date. These dates are inclusive, which means that the program is considered active on the start and stop date. If the user wishes to specify a single day, then the stop and start date should be the same.

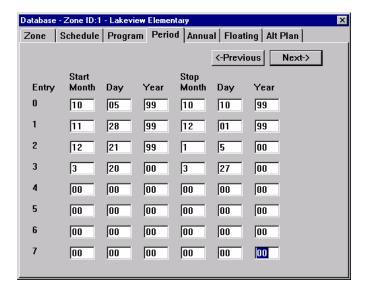
Start Date

The first day upon which the assigned program letter is considered active

Stop Date

The last day upon which the assigned program letter is considered active

3.1.4.3 Period



A 'Period' is part of a special group of entries called Exceptions. Exceptions are basically holidays. These are dates upon which none of the program letters are active. The exceptions override all clock action.

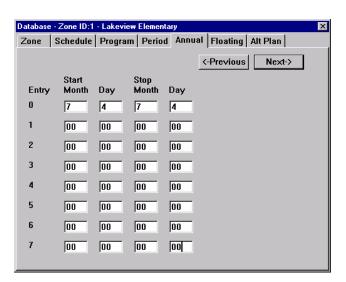
Start Date

The first day upon which the period exception is considered active

Stop Date

The last day upon which the period exception is considered active

3.1.4.4 Annual



An 'Annual' entry is identical in function to a 'Period' entry; however, the user does not indicate a year. Any entry made in the annual exceptions is considered valid every year. It is also considered an exception. Exceptions are basically holidays. These are dates upon which none of the program letters are active. The exceptions override all time switch action.

An example of an 'Annual' holiday would be Independence Day – it always occurs on July 4th, regardless of the year.

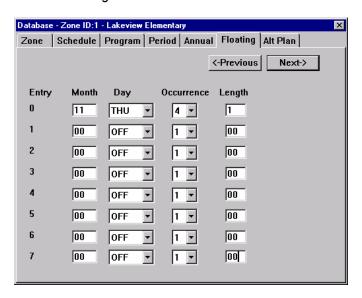
Start Date

The first day upon which the period exception is considered active

Stop Date

The last day upon which the period exception is considered active

3.1.4.5 Floating



A 'Floating' entry is considered an exception. Exceptions are basically holidays. These are dates upon which none of the program letters are active. The exceptions override all time switch action. A floating holiday is a holiday that happens on a specific occurrence of a specific day of week, in a specific month.

An example of a 'Floating' holiday would be Thanksgiving Day – it always occurs on the 4th Thursday of November, regardless of the year.

Month

The month in which the holiday/exception occurs

Day

The day of week upon which the exception begins

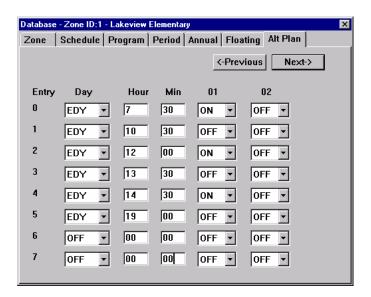
Occurrence

The occurrence of the day of week within the month (1st, 2nd, 3rd, 4th, Last)

Lenath

The number of days to extend the holiday/exception after the starting day

3.1.4.6 Alt Plan



An alternate plan is a special form of a schedule. On the day that it is transmitted to the clock, it is considered active until midnight of that day. It offers the user the ability to enter the day of week, time of day, and output actions. It is functionally identical to the normal schedule except it is not controlled by program dates or holidays, and is considered the only active schedule once transmitted.

Day of Week

The day of week indicates which day(s) of the week that this entry will be active.

Abbr.	<u>Meaning</u>	<u>Abbr.</u>	<u>Meaning</u>
	Off	Fri	Friday
Sun	Sunday	Sat	Saturday
Mon	Monday	Edy	Everyday
Tue	Tuesday	Wdy	Weekday
Wed	Wednesday	Wnd	Weekend
Thu	Thursday		

Time of Day

The time of day is entered in HH:MM format. When the day matches the indicated day, and the time of day matches the indicated time, the outputs will obey the designated action if the program is active. The time is entered in 24-hour format so as to not introduce possible confusion between AM and PM.

Program

Each schedule entry is given a program letter (A-P). A program is simply a period of operation. In other words, it is a range of dates for which the entry will be active. As an example, summer school may span a range of dates such as June 1 – August 30, and the regular school year may span a range such as September 1 – May 30. If the user desired the clock to obey a different set of time of day actions during summer school as opposed to the regular school year, then two programs would be defined. The first program might be designated program 'A', which would cover the regular school year, and the other may be 'B' which would cover the summer. In the 'Program' sub-section of the database is where the user assigns the operation dates to each program letter. The unit defaults all entries to 'A' to expedite data entry.

Output Action

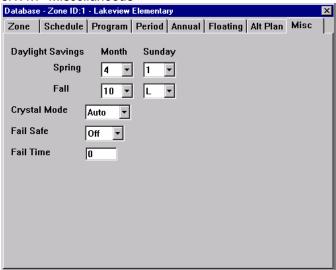
For each schedule entry, the user must also designate the state of each output. If the unit is operating in the DC mode (50% duty cycle), then both outputs are not treated independently. Only in AC mode, where the unit is controlling relays (00% duty cycle), can each output be configured to operate independently. When the day of week, time of day, and the assigned program are all aligned/active then the time switch executes the output action.

Abbr. Meaning

Y Yes, On, turn the output on No, Off, turn the output off

X No Change, do not alter the state of the output.

3.1.4.7 Miscellaneous



Daylight Savings

The daylight savings entry allows the user to select the spring and fall month in which the daylight savings transitions occur. The user may also select the Sunday on which the transition occurs. Units are shipped from the factory with Spring Month = 4, Spring Sunday = 1, Fall Month = 10, and Fall Sunday = L.

Crystal Mode

The crystal mode entry selects the clock time source. When in "Auto" mode, the unit will use the 60Hz line reference when it is present, otherwise it will use the internal crystal. "Crystal" mode allows the user to force the unit to always utilize the internal crystal. This is only done to either test the accuracy of the on-board crystal, or to eliminate problems that occur from noisy power lines. The unit is factory shipped in "Auto" mode.

Fail-Safe

The fail-safe option selects the "non-active" state of the relay. When the selection is set for "off", the relay conducts through the normally closed contact when it is inactive. When the selection is set for "on", the relay conducts through the normally open contact when inactive, and the normally closed when active. This feature allows the user to wire the cabinet such that the flasher will be enabled if the unit were to fail.

Fail Time

The fail time entry is typically used when the unit is being used with the remote activation protocol. The entry selects the number of minutes to inhibit checking the programmed schedule after having received a remote activation message. This is a fail-safe mechanism, so that if the

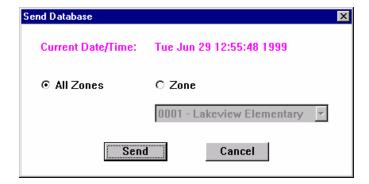
unit were to lose communication with the remote master, then it will resort to a pre-programmed schedule.

3.2 Download/Transfer Menu

3.2.1 Database

The database download screen allows the user to select the school zone whose database will be updated. The user may choose to send the data to a particular school zone, or download the information to all school zones.

The data to be sent is edited from the Edit→Database menu option. If the unit is in the alternate plan mode, this does not affect it – it remains in the alternate plan mode. It is also advised that after a database is downloaded, the user update the time in each time switch to ensure that the time switch will revert back to its proper operating state.



The follow sequence will transmit a database to a school zone.

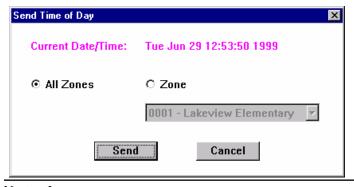
- 1. Choose "All Zones" or "Zone"
- 2. If you chose "Zone", then select the zone from the pull-down list
- 3. Select "Send"

The transmit verification screen will then appear to monitor the progress of the transmission

3.2.2 Time of Day

When downloading the time of day, the current time of day that will be sent is displayed in the upper portion of the dialog box. The time of day is derived from the system clock and is in 24-hour format. It is critical that the time reflects this format. 7 AM is displayed as 07:00, while 7 PM is displayed as 19:00 (07:00 + 12:00).

The user may also download the time of day to all zones, or to each zone individually. It is highly advised that the operator download the time of day as the final action – after the zone's database has been transmitted. Transmitting the time of day as the last action allows the unit to establish



its proper operating state.

- 1. Choose "All Zones" or "Zone"
- 2. If you chose "Zone", then select the zone from the pull-down list
- 3. Select "Send"

The transmit verification screen will then appear to monitor the progress of the transmission.

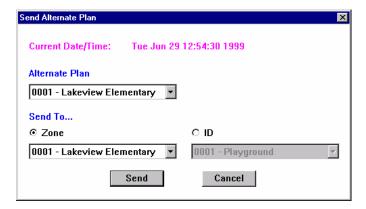
3.2.3 Alternate Plan

An Alternate Plan is a schedule that overrides the current operating schedule for one day. Each school zone's alternate plan is edited along with the rest of the database. When the user wishes to put the time switch in the alternate plan mode, it is at that time the alternate plan data itself is transmitted to the time switch – not during a normal database transmit.

Once the alternate plan is transmitted and received by the time switch, the time switch will begin executing the alternate plan until midnight of the day on which it was sent. The alternate plan will override all programmed schedule and holidays/exceptions.

For precautionary reasons, there are no provisions made to remove the unit from the alternate plan mode. The plan may be updated or changed once in the mode, but it may not be removed from the mode.

A unique feature to the alternate plan download is the ability to send one zone's alternate plan to another zone. This is done to allow the user to store multiple alternate plans. It is possible to designate a range of school zone IDs that store nothing but additional alternate plans.



The following sequence will transmit a user plan.

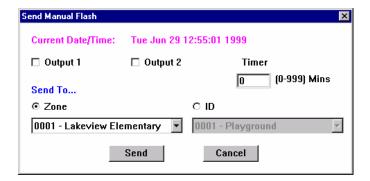
- 1. From the "Alternate Plan" pull-down list, choose the source of the alternate plan
- 2. Choose to "Send To" either a Zone or an ID
- 3. From the associated pull-down list, choose the Zone or ID to which the plan will be sent
- 4. Select "Send"

The transmit verification screen will then appear to monitor the progress of the transmission

3.2.4 Manual Flash

The manual flash download command allows the user to transmit a message to either an individual time switch or an entire school zone and change the state of it's outputs. The manual flash command does not override the current operating schedule or holiday/exception schedules. This is done as a precautionary measure to prevent a user from manually conflicting the schedules. If the user wishes to override the operating schedule, then that can be accomplished via the alternate plan.

The manual flash is intended for testing purposes, and for extending the flashing of the operating schedule. If the school zone requires that the units flash additional time, then the manual flash may be used as long as a scheduled event does not occur, or a holiday/exception is not active. In other words, the manual flash is used to turn on the time switch during non-typical operating hours, such as the evening or weekends.



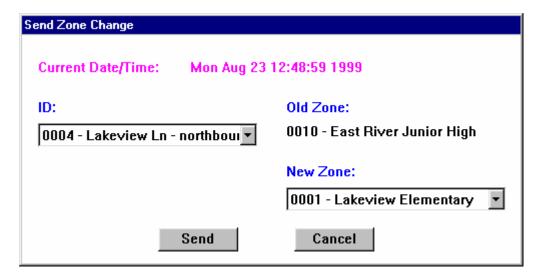
The following sequence will transmit a manual flash output command to the field.

- 1. Select the output(s) you wish to activate
- Select the amount of time in minutes you wish to maintain this state before turning all outputs off
- 3. Choose to "Send To" either a school zone, or an individual time switch by ID
- 4. From the associated pull-down list, select the target system
- 5. Select "Send" to transmit the data

The transmit verification screen will then appear to monitor the progress of the transmission

3.2.5 Zone Change

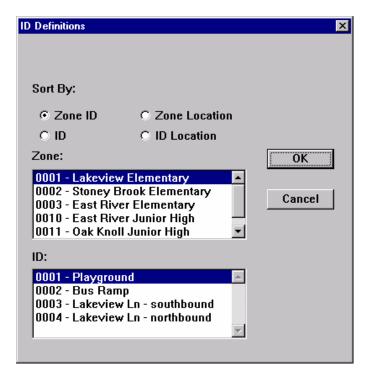
The Chronomax Pager System Software has the ability to send a new zone address to any time switch over the remote network. By selecting Zone Change, from the Download Menu, the following screen will be displayed for the selected zone.



The time switch to be changed is selected from the ID: drop down list. The new zone ID may be selected from the New Zone drop down list. To complete the change, select the Send button and the new zone ID will be sent.

3.2.6 Direct

This feature allows the direct connection from the central computer to a time switch. By connecting a cable from the central computer's dial-out port to the RS-232 port on the time switch, a database may be downloaded without the use of a pager. This is a useful maintenance feature that allows for programming time switches at the shop, or using a laptop to program replacement time switches in the field when the remote carrier system is inoperative. The user may also retrieve a database from the time switch. This data will replace the data currently in the database for that zone.



Simply select the specific clock ID that the PC is connected to. The upload/download is done by clock ID only. Transfers cannot be accomplished on a per zone basis.

3.2.7 Auto Enable

The Automatic Download features may be enabled by selecting Auto Enable from the menu screen. A check will appear next to the menu, indicating that Automatic Download is enabled. Select Auto Enable again to disable Automatic Download and remove the check.

3.3 Status Menu

3.3.1 Verification

The verification screen displays the current status of the communications ports. It is automatically displayed each time a transmission is initiated. It holds the status of each transmission since the software was last started. When the software is closed, the transmission verification screen is cleared.

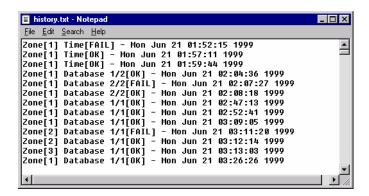
Each entry in the screen indicates that target system (ID or Zone), it's identification number in brackets ([#]), the number of transmissions for that command and its placement among them (1/10 mean the first message of 10), and the final status of the message (Fail, Okay).

These same entries are stored in the software's history file, so the user may later evaluate the service level of the pager system provider.

3.3.2 History

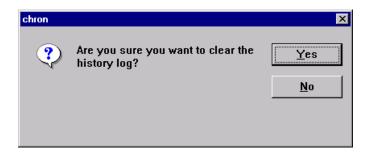
The history menu gives the user access to the verification status of all the past transmissions, and the options to clear them.

1.1.1.1 View



Selecting "View" will load the history file into Windows Notepad. At that point the user may print it, copy it to the clipboard, modify it, or save a copy under a new filename.

1.1.1.2 Clear



Selecting "Clear" will erase the contents of the history file and make them un-retrievable. This is a permanent action. If the user wishes to trim down the contents of the file, they may consider copying it before they clear it out if the history content is of importance.

3.4 Export

The export menu allows database information to be exported to a text file. Exported data is automatically displayed by the system text editor and may be printed, edited, and saved using the text editor's facilities.

3.4.1 Zone List

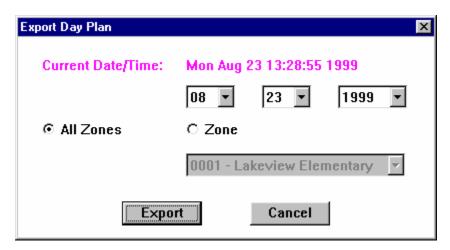
Selecting Zone List will export a list of all Zones. Each zone and description will be indicated, followed by a list of IDs assigned to that zone.

3.4.2 ID List

Selecting ID List will export a list of all IDs, with description and the zone to which they are assigned.

3.4.3 Today's Day Plan

Selecting Today's Day Plan will export the entire day plan for the selected day. The following screen will appear:



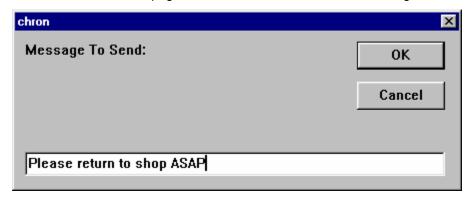
Use the drop down lists to select the date desired, and then click the Zone radio button to select the desired zone from the drop down list. Alternately, click the All Zones radio button to export the day plan for all zones. When ready, select the Export button to generate the report.

3.5 On-Call

Use this menu to select the on-call technician to be paged in the event of a remote carrier system failure. Click on the technician name to be designated. A check box will appear by that technician's name. To disable on-call paging, click on "none".

3.5.1 Page Selected Tech

Use this item to send a page to the on-call technician. The following screen will appear:

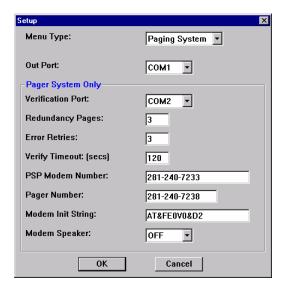


Enter the desired message to send and click on OK to send the page.

3.6 File Menu

3.6.1 System Setup

The Edit → Setup menu option allows you to alter the software's communications settings.



Menu Type

The menu type entry allows the user to modify the way the system menus are presented. In "Pager System", the software allows access to all of the software's features. Since most of the menu options pertain to the pager software, a second menu option of "Direct Connect" is offered to simplify the interface by eliminating pager related options from the menu. When the menu system is changed, the change goes into effect the next time the software is started. Therefore, you must close and restart the software if you want to use the newly selected menu system.

Dial-Out Port

The dial-out port selects the port number to which the modem is connected. This pull-down list allows the user to select any of the first four ports. To properly operate, the verification and the dial-out ports must be different.

Verification Port

The dial-out port selects the port number to which the verification unit is connected. This pull-down list allows the user to select any of the first four ports. To properly operate, the verification and the dial-out ports must be different.

Redundancy Pages

The redundancy pages options selects the number of times a successful page will be resent. For instance, if the user selects the value '2', then the software will send all pages until it either errors out, or send 3 pages that verify. Notice that the number of pages sent is one greater than the redundancy value. The error retry counter is reset for each page.

Error Retries

This parameter determines the number of consecutive failed transmissions that must occur for a transmission to be aborted. In other words, if the Error Retries value is set for '3', then the unit must fail to successfully transmit a message 3 consecutive times for the message to be aborted. If a message fails during a string of messages, such as a database page, which could contain up to 10 pages if fully loaded, then the entire string/sequence if considered to have failed.

Verify Timeout

The verify timeout values is the amount of time in seconds that must transpire without a response from the paging service, after a page has been sent, before the software fails the message. A recommended value is 120 seconds (2 minutes). This value will vary depending upon the responsiveness of your pager service provider. It is best to set this value for the peek traffic time, such as 12:00 noon and 5:00 PM.

PSP Modem Number

The software sends data to the time switch via the pager service provider's modem connection. This allows the PC to send alphanumeric data. The service provider provides this number. This entry should also include any necessary prefixes, such as "9," to reach an outside line, or "*70" to disable call-waiting.

Pager Number

In order to identify the pager units, the service provider provides each pager a unique telephone number. This number also serves as an identification number for the pager service provider's modem connection. This phone number should be entered without any spaces or '-"s. If the service provider requires an area code, then this must also be entered.

Modem Init String

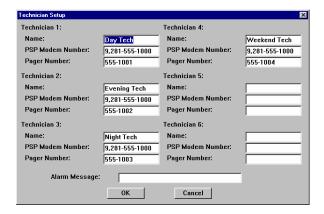
The modem initialization string is sent to the dial-up modem each time the software accesses it. The default string is provided for the modem that comes with the system. Should another modem be required, then that string will have to be customized for the particular make. It is important to know that the pager service provider, if they are TAP compliant, communicates at 2400,E,7,1. Therefore, a simpler and less costly modem is the wiser choice.

Modem Speaker

This parameter allows the user to turn the modem speaker on or off.

3.6.2 Technician Setup

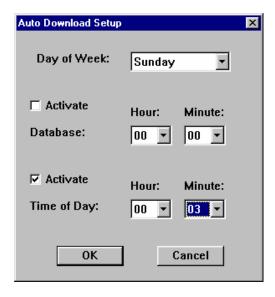
The Chronomax Pager System Software has a provision that allows a technician to be automatically paged by the system if a malfunction in the remote carrier service is detected. Up to six different technicians may be paged.



For each technician, a name, PSP Modem number, and Pager number may be entered. The technician to be paged and message to send is set up under the On-Call menu. Enter the message to be sent to the technician in the box labeled Alarm Message.

3.6.3 Auto Download Setup

The Chronomax Pager System Software provides the ability to automatically download timer programs and time-of-day on a regularly scheduled basis. The automatic downloads may be programmed to occur on a daily or a weekly basis. Downloads may also be scheduled for every weekday or every weekend day.



To set up automatic download, select the day of week from the pull down menu. Then select the time of day for the download using the Hour and Minute pull-down menus. Click on the "Activate" check box for Database and/or Time of Day to activate the desired feature(s). Automatic download will not occur until enabled from the Download – Auto Enable menu.

3.6.4 Exit

The exit menu option closes the program. If exit is selected and Auto Download is enabled, a warning message will be displayed.