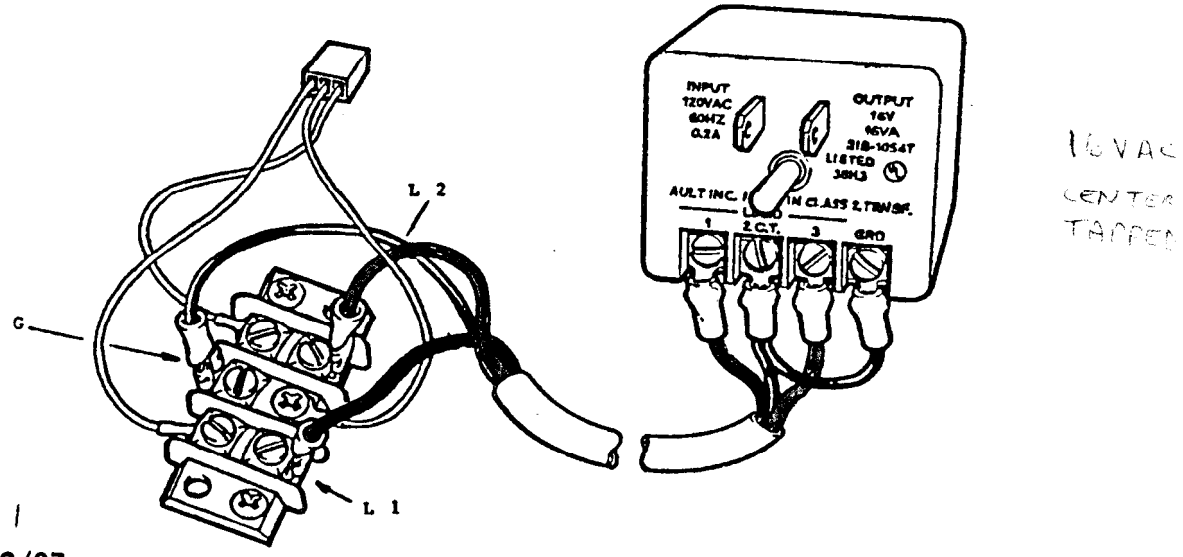
THE TROUBLESHOOTER

Every week, we receive a number of calls relating to problems encountered by our customers in the field. Quite often, we hear the same or similar questions. Bimonthly, through "The Troubleshooter," we will present answers to those questions and helpful hints to assist you with the technical side of your payphone business.

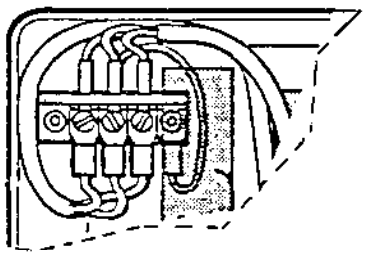
- ☐ Remember to always wear a static ground wrist strap when handling a PCM assembly (Payphone Control Module printed circuit board set) and when installing software chips and rating chips and modules. Ground the wrist strap to the case of the phone. If no ground strap is available, be sure to touch the housing ground to discharge whatever static electricity you may have accumulated.
- ☐ If there will be twenty-five or more feet of exposed phone line between the telco interface box and the payphone, install a gas tube surge protector at the paystation. This surge protector is in addition to the surge protector provided by the telco. Note that exposed phone line is phone line that does not pass through a metal conduit and is not shielded by braided cable around the tip and ring wires.
- ☐ If you find that the payphone has incorrect rates, the problem may not be with the rating chip or module. Other electrical devices on the same line can cause spikes and surges that can cause a reload of the rating chip or module, erasing owner-programmed changes. If this is a problem, obtain a dedicated power line for the payphone. Loose connections and incorrect grounding are also capable of causing such malfunctions in the performance of the payphone. Ensure proper electrical connections and grounding as necessary. After these items have been checked and adjusted as necessary, reload the rating chip or module, and reprogram any necessary changes. If the problem persists, contact Customer Service. If you determine that the rates in the rating chip or module are not according to what you ordered, contact the Rates Manager.
- ☐ In some locations near radio broadcasting antennas, if a 50-foot power line is used, it may be necessary to bring a special ground wire from a nearby water pipe to ensure that the radio signal does not interfere with the call completion detect circuit. This special ground may be connected directly to the center (ground) terminal in the lower housing from the nearby water pipe. Some water pipes, however, may not be a true ground due to the use of PVC plastic pipe between the water meter and the incoming water line, removing the ground. A copper ground rod may be a necessary substitute.
- ☐ When preparing the RJ11C interface, ensure that the tab side of the RJ11C connector (6-position, 4-terminal modular plug) is facing upward when inserting wires. Insert the four wires into the open end of the connector. Ensure that the red wire enters second from the right and the green wire enters third from the right. Note that the other wires occupy the first and fourth positions. Crimp with an RJ11C crimping tool.
- ☐ If the coin relay will not operate to collect or return the coinage, improper connection of the Molex connector-terminated cable from the coin relay-hopper assembly to the PCM assembly is often the cause. Ensure that the side of the connector with the three open slots is facing downward. Reseat the connector, ensuring that the holes line up with the three pins of the jack.

  Another frequent cause of this problem and other problems as well is incorrect wiring on the transformer or on the terminal block, in the lower housing. With the Series-1, 2, and -4 payphones, connect the wire from 1 on the transformer to L1 on the terminal block, the wire from 2 C.T. on the transformer to G on the terminal block, and the wire from 3 on the transformer to L2 on the terminal block. Use the following illustration to ensure that your wiring is correct. Note the jumper wire from 2 C.T. to GRD.



On some transformers, the transformer terminals are designated 1, C.T., 2, and GRD. In such cases, connect the wire from 1 to L1, the wire from C.T. to G (and a jumper from C.T. to GRD), and the wire from 2 to L2.

On Series-3 payphones, ensure that the ground or center tap wire (from C.T. or 2 C.T. on the transformer) connects with the second terminal from the left (the center terminal) on the terminal block, which is mounted in the upper left of the cabinet. Each of the other two wires from the transformer connects with one of the other two terminals. Also, in the Series-3, a cabinet ground jumper wire is connected from the center terminal on the terminal block to the right mounting screw of the terminal block. The other jumper wire on the transformer must still connect the center tap (C.T. or 2 C.T.) to the ground (GRD). An illustration of the Series-3 terminal block follows. The transformer is the same as for other models.



☐ For a power cable from the transformer to the payphone, Elcotel recommends the use of 18-gauge wire if the transformer is to be located no more than 25 feet from the payphone; however, for distances from greater than 25 feet through 50 feet, use 16-gauge wire. Do not locate the transformer more than 50 feet from the payphone.

SOFTWARE UPDATES

Since the release of the addendum to the manual, Elcotel has issued three software releases as follows:

Software Release Number 4.0.22

Enhancements include the ability to reroute NTS (National Telephone Service) calls to AT&T. To do this, use the following format:

1. Turn on Option 138, sending for 0+ calls to NTS.
2. Turn on Option 139, sending for 0- calls to NTS.
3. Turn on Option 140 to dial local switch.
4. Turn on Option 141 to delete first digit.
5. Turn on Option 144 to look for tone after answer.
6. Turn on Option 150 to turn off BONG.
7. Turn on Option 156 (new) to allow reroute.
8. Ensure that Register 262 contains the NTS access number.
9. Ensure that Register 263 contains the NTS ani/ID number.
10. Ensure that Register 276 (new) contains the reroute access number.

Software Release Number 4.0.23

Enhancements include coin return for underpaid calls. Being a smart payphone, it calculates the amount of the call and deducts the original deposit (25 cents). The voice then instructs the caller to deposit this amount. In some cases, we have found that the caller does not realize that the original deposit (25 cents) has already been deducted, and that the quoted cost is the adjusted cost. The caller then makes the mistake of doing this adjustment himself/herself and deposits less than the amount requested by the payphone's voice. To prevent this problem, the payphone can now return the original deposit (25 cents) prior to quoting the cost of the call. To use this feature, Option 159 must be turned on.

In addition, an inactivity timer (Register 277) was added. If set to 00, it will be off; however, if it is set at any setting from 01 through 99, representing a number of hours, the payphone will call home at the time indicated by the setting and report that no calls have been made in that period. This inactivity may indicate that the payphone is not located in the best possible area, or, more often, it indicates that something is wrong with the payphone, and that it requires corrective maintenance. To start the timer after setting it, make a completed call from the payphone, and ensure that the phone has a home number programmed into Register 243.

Software Release Number 4.0.24

Enhancements include the ability to enter the call telemetry mode with both modem and voice. To do this, Options 129 and 130 must both be turned on.

In addition, Option 158 was created to deal with low speed pulse dialing. It is designed to be used when central offices cannot recognize high speed pulse dialing. If the option is turned off, the payphone is set normally, for 10 pulses per second. If the option is turned on, the payphone is set for 7.5 pulses per second.

Software Release Number 4.1.0

This software consists of payphone software supporting LD*OS℠, and that software will be officially released in October. The next newsletter will contain a detailed description of the new variables.

ELCOTEL INC.
TELECOMMUNICATIONS SYSTEMS
6428 Parkland Drive, Sarasota, Florida 34243

ELCOTELLER

THE TROUBLESHOOTER

Published by Elcotel Inc. **April 1988** **Volume 1 Number 2**

EVERY WEEK, WE RECEIVE A NUMBER OF CALLS RELATING TO PROBLEMS ENCOUNTERED BY OUR CUSTOMERS IN THE FIELD. QUITE OFTEN, WE HEAR THE SAME OR SIMILAR QUESTIONS. PERIODICALLY, THROUGH THE "TROUBLESHOOTER," WE WILL PRESENT ANSWERS TO THOSE QUESTIONS AND HELPFUL HINTS TO ASSIST YOU WITH THE TECHNICAL SIDE OF YOUR PAYPHONE BUSINESS.

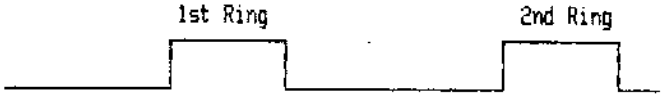
ANSWER SUPERVISION "RULE OF THUMB" ADJUSTMENTS

If mic. opens **before 1st ring**, increase Register **228*** by 1

If mic. opens **during 1st ring**, increase Register **227** by 1

If mic. opens **after 1st ring**, increase Register **226** by 1

If mic. is **delayed** in opening turn Option **149** on; then repeat above steps.
If you are in an area where many of the telco messages do NOT have S.I.T., time the message and insert the value in Register 232 (value should not exceed 10 seconds).



IF MIC. OPENS HERE	IF MIC. OPENS HERE	IF MIC. OPENS HERE
ADJUST **228***	ADJUST **227**	ADJUST **226**

* Using 4.2.X software adjust 226 instead of 228.

4.1.5 SOFTWARE
(Released 4/20/88)

ENHANCEMENTS:
1. Improved recognition of "Wink" signal.
2. Improved operation with PNM on series 2 boards.
3. Improved operation with LD*OS.

For customers in rural areas or those who have phones connected to antiquated L.C.O.'s (local central office) who are experiencing problems accessing LD*OS, we recommend using 4.1.5 software. This level of software detects a precise 400 HZ tone before transmitting information necessary for LD*OS to process calls. In some areas, noise on the telco line will cause data to be transmitted out of sync. with the LD*OS's reception. This causes the call to drop off to dial tone. However if you are not having this problem or any of the above mentioned items, you don't need this software.

AUTO-DIALER GROUP USAGE

If you would like your office phone number to be a free service call, why not use the automatic dialer group?! You can do this by just programming your paystation as shown below:

321*NPANXXXXXX*

Note that the register number can be any number from 321- through 369. If you would like the call to be charged the normal rate just insert a "#" sign at the end of the number instead of a "*" at the end of the number.

321*NPANXXXXXX#

One important fact to remember is that your home office number must be entered into the paystation's program in exactly the same format as dialed from that specific location. The number will be automatically dialed whenever a user enters "#21" (or the last two digits of the register you used) or the complete phone number.

INACTIVITY TIMER

It appears that some of you, even after the 1200-4 manual has been released, are still a bit confused about how the "Inactivity Timer" works. The Inactivity timer alarm is tripped when no calls are made during the specified time period set in register 280. Example: You have a value inserted in register 280 of "8". What this means is that if 8 hours elapse since the last call (gauged by answer supervision), the phone will call the home primary number and attempt to report either "No Calls" or "No Dollars". In order for this to happen you should make sure that the following options and registers are properly set.

OPTION 129 (VOICE TELEMETRY) ON
OPTION 130 (MODEM TELEMETRY) ON
REGISTER 243 (HOME PRIMARY NUMBER) (XXX-XXXX)**
REGISTER 244 (HOME SECONDARY NUMBER)(XXX-XXXX)**
REGISTER 245 (STATION I.D.)

These numbers **MUST be entered exactly as they need to be dialed from the payphone. (1+area code if needed) This information can also be found on page 40 of the new Model 1200-4 SERVICE AND INSTALLATION MANUAL.

MATERIAL RETURN AUTHORIZATIONS

Anytime there is a need to return products of any type to Elcotel, an R.A. (return authorization) is required. This is usually done by calling the Customer Service department and describing what you need to return and why. Here are some basic guidelines that must be followed in order to obtain an R.A.

1. If you are returning a P.C.M. (payphone control module) (board), you must first collect the following information before calling Elcotel. Serial number, series (2,3,4), level (modem and or timer), and most important a brief description of the problem.
2. When mechanical telephone parts are defective, it is necessary to return the entire assembly. This is the **only** way that the warranty can be honored.
3. With all the returns for credit, we request that you provide us with the invoice number you received with the new product so that we can issue a credit directly to that invoice. This eliminates hunting for the correct invoice and significantly decreases the time that it takes to enter the credit.
4. Products sent to us for any reason and that do not have an R.A. will not be checked into our system. They will be refused.

4.2.X SOFTWARE RELEASE

4.2.X software is out of the Beta testing phase, and is being scheduled for release in early May. 4.2 has many exciting features and enhancements that deserve your consideration.

RECEIVING THE "TROUBLESHOOTER"

If you would like to receive the "Troubleshooter" on a regular basis, please call us here at Elcotel:
1-800-ELCO-SVC (352-6782) or 1-813-751-7585

ELCOTELLER

THE TROUBLESHOOTER

Published by Elcotel Inc. June 1988 Volume 1 Number 3

SHORTLY AFTER WE HAD MAILED THE LAST "TROUBLESHOOTER," WE RECEIVED A FLOOD OF CALLS: SOME CALLERS MERELY REQUESTED THAT THEY BE PUT ON THE MAILING LIST, WHILE OTHERS ASKED THAT WE DISCUSS AND EXPLAIN CERTAIN UNCLEAR TOPICS. THIS TYPE OF RESPONSE IS EXACTLY WHAT WE WANT, AND IT IS ONE OF THE REASONS WHY THE "TROUBLESHOOTER" WAS REVIVED. IF YOU HAVE SOMETHING THAT YOU THINK WOULD BE BETTER EXPLAINED ON PAPER INSTEAD OF OVER THE PHONE, CALL US. MAYBE OTHERS ARE HAVING THE SAME PROBLEMS, AND THE "TROUBLESHOOTER" CAN COME TO THE RESCUE.

LIGHTNING

Lightning is a phenomenon that we know little about. One thing that is known is that the tremendous voltage produced by lightning (several million volts) can take its toll on electronic circuits, especially computer circuits. We have seen it all, from minor components needing replacement to entire circuit boards being charred beyond recognition. No one can prevent a lightning strike, but there are several things that you can do to minimize the damage that lightning can cause. First make sure that the telephone company has a lightning protector at the interface box. Next, avoid running exposed telephone lines for any distance, especially if the runs are aerial runs or on top of buildings. Putting the telephone cable as well as the power cable inside grounded conduit is also strongly recommended. In addition, Elcotel is now providing a lightning protector (LP-1) that is mounted directly inside the payphone. It is very easy to mount on the floor or the back of either type of payphone, and it has a 9" RJ-11 pig-tail which makes the installation as well as the maintenance on the payphone simpler. The cost of the LP-1 is minimal ($12.00), and barely covers the cost of manufacturing. The LP-1 comes complete with installation instructions and the needed hardware to mount it either to a GTE or AT&T cabinet.
We will be taking a stronger stand this year regarding the repair of products that have been struck by lightning, especially considering the availability of the LP-1. We strongly believe that an ounce of prevention ($12.00 lightning protector) is worth much more than a pound of cure ($50.00 or more repair charge).

4.2 SOFTWARE

It is necessary when converting from 4.1 software to 4.2 software to get a new rating device. With the Series 2 product, the EPROM type rate module is needed. With the Series 3 and Series 4 products, most will want to convert to the new EEPROM. The EEPROM has two distinct advantages. First, it is as stable and non-volatile as the EPROM. Second it can be electronically erased and reprogrammed (hence the term EEPROM). However, one thing that should be pointed out is that it is necessary to program the EEPROM the first time via the PNM package in order to "initialize" it. After this, the EEPROM can be adjusted by either voice telemetry or through PNM. Also with the Series 4 product, the 981 (precision dial tone detector) is supported in the 4.2 software and greatly adds to the protection against fraudulent calls, especially when the "WINK" signal is not available.
Some are having difficulty understanding the 4.2 rating package. The most important thing about filling out this questionnaire is to know what you want the phone to do before you sit down with it. Try to fill out the questionnaire, and, if you still don't understand the macros and call types, don't hesitate to call us in the Customer Service department. Everyone should have recently received a product brochure, explaining the new products and prices. If you did not, please let us know, and we will make a special effort to see that you get one.

Payphone Network Manager 1.0.7

The new version of PNM is now available. It offers several enhancements that you will likely find attractive. Here is a brief list of the changes and enhancements. If further clarification is needed, you can order 1.0.7 and read the "what's new help files" or as usual, don't hesitate to give us a call (1-800-ELCOSVC).

A. "SCAN" now remembers the last record you were using. When you re-enter the SCAN mode you will return to the record that you last saw. You now will go back to SCAN when you have finished an off-line edit.

B. Added "FIND" key to SCAN mode. This allows you to search for a particular ID while in the SCAN mode.

C. Added 'Payphone NPA-NXX-XXXX' field to the main database. You can overlay this field into register 284 when downloading the rating module file.

D. Changed database editor to allow the blanking out of the authorization code field.

E. Changed the method of controlling the modem stop function. This corrects the loss of modem control under certain conditions.

F. Corrected a problem where PNM's retry flag could get stuck in the on condition. This problem created the appearance that PNM was changing to other dialing lists.

ELECTRONIC TROUBLESHOOTER

In the near future (maybe the next version), we will make it possible to receive the TROUBLESHOOTER through your computer and modem program in addition to providing the "hard copy" mail version. What you will need for this type of space age media is an IBM compatible computer, a Hayes compatible modem, and a modem program resident on your hard disk. If you are familiar with how to set up your modem program, be ready when we release the protocol. Then, all you need do is call us here in the Customer Service Department to get a password and get "on-line". If you do not understand how to set up your computer to do all of this, then as always call us and we will get you pointed in the right direction. What this means is that when the TROUBLESHOOTER is updated, all you have to do is call the access number, enter your password, and you can have the latest information according to Elcotel at your fingertips. This information could range from customer service tips to service bulletins to special pricing and deals, and even to news in the ever-changing arena of private pay telephones and alternate operator services. Chances are that if you already have the Payphone Network Manager working, you have all that is necessary to get "on line" with this state of the art information network.

ELCOTELLER

THE TROUBLESHOOTER

Published by Elcotel Inc. July 1988 Volume 1 Number 4

THE TROUBLESHOOTER IS PUBLISHED FOR YOUR INFORMATION AND ASSISTANCE. IF YOU HAVE ANY QUESTIONS OR WOULD LIKE US TO COVER UNCLEAR TOPICS IN THE NEXT ISSUE, PLEASE LET US KNOW. WE VALUE YOUR INPUT AND QUESTIONS. THIS IS ONE OF THE WAYS WE GROW AND CONTINUE TO BE THE LEADER IN THE PRIVATE PAYPHONE AND ALTERNATE OPERATOR SERVICE INDUSTRIES.

DOWNLOADING PHONES WITH 4.2 SOFTWARE

Since the release of 4.2 software many questions have been asked concerning its use and compatibility with our product line. 4.2 software can be used with series 2, 3, & 4 PCM's. If you elect to use 4.2 with a EEPROM the PNM computer software program must be used to burn the information the first time. Afterwards changes can be made through the keypad, or through remote voice telemetry, or of course through PNM. (Pages 6 & 7 Software product manual.)

After filling out a 4.2 rating package questionnaire we will send you a rate center file which is simply a rate module on floppy diskette. This rate center file must be copied onto your PNM directory as follows: Move to your PNM directory and use the DOS copy command COPY A:*.* (Page 34, 4.2 Software product manual.)

Prior to downloading a phone with 4.2 you should make sure that certain site specific items are in the overlay editor in PNM (Page 36-38 4.2 Software product manual.) After the phone has been called and communications have been established hit the F4 key for MORE. Move the highlighted bar to "Download whole rate module" and hit enter. (Page 38-39 4.2 Software product manual.)

This will burn the EEPROM with all the information that is in the selected rate center file. This process will take approximately 5 minutes to complete and a burn successful message will appear on the screen along with a window selection screen. Now move the highlighted bar to <<<< RELOAD PHONE RAM >>>> and hit enter. The phone will reload the ram with the information you just burned into the EEPROM, automatically "hang-up," and is now ready for use.

NOTE 1: It is recommended that when you are downloading phones initially, that you have someone on site to make sure that everything works properly and that the phone is ready for public use.

NOTE 2: You must be careful to only highlight "Download whole rate module," and "<<<< RELOAD PHONE RAM >>>>" DO NOT highlight "Burn General Registers." This was already done when you selected "Download whole rate module." If you select "Burn General Registers at this time the payphone will take the values that are in RAM and burn them into the EEPROM. Since you don't have any values or rates in RAM then you would be burning 0's into the EEPROM. If you check the phone's band charges and they are all zero, chances are you tried to burn the general registers before downloading the module file and loaded the RAM with "NOTHINGS."

SOFTWARE PRODUCT MANUAL
SOFTWARE RELEASE 4.2

Many of the items just mentioned are directly quoted out of the 4.2 software product manual. Please refer to it, it is a very comprehensive manual and it is your best source of information. If you have 4.2 software in the field and do not have a manual, please let us know we will see that you get one.

ELECTRONIC TROUBLESHOOTER

We are beginning our "Beta" testing on the electronic version of the "TROUBLESHOOTER." If you would like to participate in this test, call us here in Customer Service @ (1-800-352-6782.) You will need an IBM compatible computer, a 300/1200 Baud modem, and a modem program. (i.e. Bitcom, P.C. Talk, Crosstalk, etc.) If you have PNM, you have most if not all of these items. When you call we will give you the necessary instructions to link up with the "TROUBLESHOOTER", including your user I.D. and password. The "TROUBLESHOOTER" will be a "Closed" bulletin board system (BBS) which means that a password will be required and that it is not open to the general public.

NEW AREA CODES

Below you will find a list of new Area Codes and the date of their effectivity.

State	New area code	Effective
Massachusetts	508	July 1988
Colorado	719	March 1988
Florida	407	March 1988

If you have rate devices (modules, chips, rate center files), that don't include this new Area Code information, you will want to make sure that you compensate in one way or another. We recommend that you take this opportunity to upgrade your software and rates package to the new 4.2 version. The next best way is to order new rate modules / chips with the updated rating information in it. Don't forget that if you elect to put these new Area Codes in the exceptions group temporarily, that they will only be in RAM and will be subject to erasure in the event that your phone does a RAM Re-load (for whatever reason.)

SERVICE / CREDIT DESK

One of the options in the new 4.2 software package is the Service / Credit desk. With this feature you can establish your own service / credit desk. Your service operator can take the information from a caller, command the payphone to issue an audible SMDR report, and if this audible report matches the report from the user, the service operator can issue credit to the payphone and allow the call to be made again without another deposit of coins. After this credited call has been made the phone will charge calls normally. Your operator must be equipped with a "four column keypad phone." The difference between this phone and a regular phone is the extra column of keys on the right hand side labeled A,B,C,D. This type of telephone is required to send the special commands to the payphone in order to allow SMDR and issuing credit. These phones are obtainable through many sources. The source that we use is: Micro Communications, 3305 Castor Street, Santa Ana, CA. 92704 (714)-540-3700 Attn: Stan Scott.

ELCOTELLER

THE TROUBLESHOOTER

Published by Elcotel Inc. August 1988 Volume 1 Number 5

PNM VERSUS PAYPHONE COMPATIBILITY

When using PNM 1.0.7 you can only use features that are supported in the software of the payphone. I.E. SMDR must be used with nothing less than software versions of 4.2.2. Burn features, (Whole module, General Registers, etc.) must be complimented with 4.2.0 or higher and a EEPROM. Failure to follow these simple requirements can create strange results. The reason for this is the requirement that PNM be capable of supporting all versions of payphone software but all versions of payphone software do not support all features of PNM. (with the exception of 4.2.2)

RATING DEVICE COMPATIBILITY

We have also heard questions on the compatibility of different types of rate modules/chips/EEPROMS with the various PCM's manufactured by Elcotel. Sometimes this information becomes confusing when conveyed over the phone, so one of our engineers suggested making a table that puts all of the facts on the same page for easy reference.

RATING DEVICE	COMPATIBLE WITH				
SERIES DESCRIPTION	PCM-1	PCM-2	PCM-2.5	PCM-3	PCM-4
1 RATE MODULE (BLACK OR GREEN CASE)	YES	NO	NO	NO	NO
2 RATE MODULE (BLACK OR GREEN CASE)	NO	YES	NO	NO	NO
2 RATE MODULE (RED CASE)	NO	YES	YES	YES*	YES
2.5 RATE MODULE (RED CASE)	NO	NO	YES	YES*	YES
2.5 EEPROM MODULE (RED CASE, BLUE LABEL)	NO	NO	YES	YES*	YES*
3 EPROM (RATE CHIP)	NO	NO	NO	YES	YES
3 EEPROM (RATE CHIP)	NO	NO	NO	YES	YES
4 RATE MODULE (RED CASE)	NO	NO	YES	YES*	YES
4 EEPROM (RATE CHIP)	NO	NO	NO	YES	YES

* NOTE: CHIP MUST BE REMOVED FROM RATE MODULE AND INSTALLED INTO "RATE CHIP" SOCKET ON PCM.

PCM 2.5 MODIFICATION

It is now possible to have your series 2 PCM's modified to handle 8 K worth of rates. More importantly it can support an EEPROM. This modification must be done at the factory and will include the modem and time-clock upgrade. The cost to upgrade to a 2.5 MT will be $50.00 for a 2MT, $75.00 for a 2M & $100.00 for a basic 2.

PNM BACKUPS

Remember how long it took you to enter all of your PNM database? Even though PNM is designed to safeguard your data, circumstances beyond your control (disk drive failure, power fluctuations, etc.) can cause file corruption or complete data loss.

We recommend that you have at least 2 backups of all data, alternating them between changes. Every time you change something on your files your backups become obsolete to the extent of your changes. The more often you backup your database the less information you are likely to lose.

BACKUP PROCEDURE

1. Make sure you have at least 2 formatted diskettes plus 1 diskette for every additional 150 phones. I.E. if you have 500 phones on your database you will need 5 formatted diskettes on hand before you begin your backup.

2. Type: CD \PNM <ENTER> (unless you are already in the PNM directory.)

3. Type: BACKUP C:\PNM\CHAT.* A: The following DOS message should appear:
   Insert Archive Diskette 01 in Drive A:
   WARNING: All Files Will Be Deleted !
   Press Any Key To Continue, Control-C to Abort

4. Follow the DOS instructions by inserting a diskette in Drive A: and pressing any key to continue or Control-C to abort.

5. Follow the DOS instructions for the additional diskettes.

6. Be sure to number each diskette accordingly as you will need to restore them in exactly the same sequence.

RESTORE PROCEDURE

1. Type: RESTORE A: C:\PNM\CHAT.*

2. Follow the DOS instructions by inserting Archive diskette 01 into drive A: and pressing any key to continue or Control-C to abort.

3. Continue to follow the DOS instructions and insert the backed up diskettes in numerical sequence.

ELECTRONIC TROUBLESHOOTER

The Electronic Troubleshooter now offers items that can't wait for the monthly paper version in the form of Weekly Updates. Also the Electronic Troubleshooter offers bulletins about new products, new software releases and even a copy of the 4.2 Rating package short form. For your I.D. and password call us here in Customer Service @ 1-800-ELCOSVC or 1-813-751-7585.

ELCOTELLER

THE TROUBLESHOOTER

Published by Elcotel Inc. September 1988 Volume 1 Number 6

EXTENSION PHONE

With 4.2 software the payphone may be used as an extension phone on incoming calls. In the example below the call is answered, and the payphone is picked up as an extension:

(1) Turn Option 176 ON to allow the payphone to be used as an extension.
(2) Turn Option 170 ON to allow real (C.O.) dial tone.

When the handset receiver is lifted and C.O. dial tone is not detected, the payphone will :

(A) Open the payphone's mic. and receiver.
(B) Disable the keypad.
(C) Initiate "Anti-fraud" control features.

PNM OVERLAYS

It is important to note that when editing or adding to your PNM database and using the overlay feature, you should enter all of the information required in the highlighted areas. If you omit entries from any of the overlaid registers, you will hear what sounds like static or noise when accessing the register through voice telemetry. The applicable registers are: I.D. Number, Bypass code, AOS access number, Auth. Code and Phone NPA-NXX-XXXX.

BAR CODE WARRANTY

As of July 1987 every product shipped has a "Bar Code" affixed to it for both warranty and serial number tracking purposes. To insure that every customer gets their full warranty, we decided to offer a 60 day "grace period" until October 1988. Now, anything that does not have a Bar Code sticker affixed to it is definitely out of warranty. Now when you call in for an R.A. number we will be asking for the Bar Code number of the component in order to determine its warranty status. Even if a PCM is out of warranty we will still offer repairs for a nominal charge. However, since we do not repair payphone housing components (keypads, hook-switches, coin relays, etc.) we will not authorize the return of such a component whose warranty has expired. Out of warranty repairs will be done on Elcotel PCMs only, and a "60 day repair warranty" will be extended. The repair warranty only covers the actual repair of the reported symptom. In order for you to get the most out of the repair warranty, you need to be as accurate as possible when conveying the problem to the Customer Service Rep.

TAG MODE

With PNM 1.0.7 there is a new option added to allow modifications that were made to one rate module file to be reflected on any or all rate module files.
This procedure should be done in the following manner:

(1) From the "MAIN MENU" select 4) File Editors
(2) From the "FILE EDIT MENU" select 2) Edit module file
(3) Press "F1 LOAD" and using the the up/down arrow keys select the EDITED rate module file.. press <ENTER>.
(4) Press the F3 key TAG to enter the "TAG" mode.
(5) Highlight the desired register sub-heading and press <ENTER>
(6) Using the space bar, place an asterisk next to the changed register(s). When you are finished "tagging" the registers, press the "down arrow" key until the "EXIT TO MENU" is highlighted and press <ENTER>.
(7) Press the F5 function key for the "AUTO" mode and again, using the space bar place an asterisk next to each affected rate center file and press <ENTER>.
(8) A message will appear in the upper left hand corner of the screen "PROCESSING NPA-NXX-XXXX."
(9) When the processing is complete you will be back at the "Edit Module File Screen." Press the F7 key to exit.

BURN GENERAL REGISTERS

In the July issue of the Troubleshooter we mentioned that when you "Download whole rate module", and "<<<<RELOAD PHONE RAM>>>>" that you shouldn't "Burn General Registers" at this time. We explained that when this is done you would be putting 0's into the EEPROM and the RAM. This is not entirely true even though the result is the same.

When you "Download whole rate module" and "<<<<RELOAD PHONE RAM>>>>" you have done everything necessary to make the phone work properly. However, if you wish to change something in the General Registers at a later date, before you edit them you must upload and save them to PNM. What this actually does is establish a pointer to let the phone know where the rates are stored. (This pointer actually varies with the size of the rates file) After you have uploaded the general registers and saved them you can edit them on or off line, and save, send and burn them. In the next release of PNM for your convenience, we will be doing this process automatically for you.

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Published by Elcotel Inc. October 1988 Volume 1 Number 7

PNM RETRY FEATURE

The retry feature is accessed by pressing the F3 key from the main screen, then 1 from the OPTION MENU, and then 7 from the OPTION MENU. From this screen a selection of 0 will disable the retry feature, and any other number will cause PNM to retry the phones (that were not reached in a scheduled poll) that number of times. This feature is generally used when trying to determine if a phone was BUSY at the time of the poll or if maybe it has some problem that actually prevented it from being polled (telephone line problem, payphone power failure, or even a hardware failure.)

Where the confusion begins is realizing that this feature is activated **ONLY** when a **SCHEDULED POLL** is done, and **NOT** a manually forced poll (F8 AUTO.) PNM assumes that if you execute a manual poll that you are sitting right there watching it and an automatic retry feature would not be practical.

DOS TIDBITS

If you're not in the PNM directory and try to run PNM or PNM commands, you may get some surprising DOS messages such as "1 or more critical system files are damaged or missing!" or "Chat.log or Chat.opt File(s) Missing".

First, you want to make sure PNM is out of your path. What is a path? A path is a DOS command which is usually part of your autoexec.bat file (explained in the following paragraph) and this is how it works. Your path contains the directories that the computer will search through when a specific command is given. The problem becomes evident when you issue the PNM command from a directory that doesn't have your PNM files in it, but you have loaded PNM into your path. The computer will search your path for the filename, (CHAT, PNM, etc.) and it will find it. But there are several other files that PNM requires to run properly and of course they are in another directory (PNM.)

To eliminate this problem always issue the PNM or CHAT command from the PNM directory, or remove the PNM directory from your path. (If you issue the command PNM from a directory and PNM is not in your path you'll get the DOS message "Bad command or filename.")

To check your path type PATH, press <ENTER> and you should see something like the following example.

```
PATH=C:\;\DOS;\UT;\SK;\WORDSTAR;\BITCOM;
```

It's always a good idea to include in your path the directory where your DOS commands are located, so you can issue external commands like BACKUP, RESTORE, CHKDISK, from any directory.

AUTOEXEC.BAT

Your autoexec.bat file contains a series of DOS commands for your system to **AUTO**matically **EXEC**ute when you initially turn your computer on or re-boot. You can create or edit an autoexec.bat file using any good page editor (that doesn't add command codes) or the DOS line editor called "EDLIN." To eliminate the problem mentioned in the previous paragraph, try removing PNM from your path, as in the example below using EDLIN.

1. From the root directory, type: EDLIN AUTOEXEC.BAT and <ENTER>. If you don't have an autoexec.bat file you'll get the response "New file," in which case you'll have to create an entire autoexec.bat file. If you do have one (in most cases you will) you'll get the response "end of input file."

2. Type L and <ENTER> to list the file.

3. Type the line number the path is in and <ENTER>. (In the example below the path is in line 3.)

```
1:*SETCOLOR B=blue F=WHITE
2: prompt $p$g
3: path c:\;\ut;\PNM;\sk;\wordstar;\bitcom;
4: cls
5: dm
```

4. Re-type that line excluding the \PNM; and <ENTER>.

```
1:*SETCOLOR B=blue F=WHITE
2: prompt $p$g
3: path c:\;\ut;\sk;\wordstar;\bitcom;
4: cls
5: dm
```

5. Type E and <ENTER> to end EDLIN, and save your changes.

6. Re-boot your computer. PNM is now out of your path.

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Published by Elcotel Inc. November 1988 Volume 1 Number 8

TROUBLESHOOTING YOUR MODEM

It's Monday morning and you're sitting down at the computer to begin calling some of your phones. PNM says "Doesn't take ID" for the first five phones you call. So you call the phones manually to check if the phone gremlins visited your phones over the weekend and changed the ID's. To your surprise all the ID's match those in your database. What to do next? First you should determine if the problem lies in the phones or the computer. Most likely the problem will be in the computer if THAT many phones cannot be contacted. If it is the computer, do a "CHECKSYS" to ensure the computer and PNM are seeing the modem. To do this you would go to DOS, (still in the C:\PNM directory) type CHECKSYS and select MODEM. PNM will tell you which comport the modem is on, the baud rate (300), number of data bits (8), number of stop bits (1) and parity (none). You should then verify your modem is on the indicated comport and that comport is selected in PNM. If everything seems in good shape there may be something wrong with the modem. What you then need to do is get the switch settings on your modem and call Customer Service. Be prepared to either tell us what each switch setting does in both the on and off position or fax us the information from the manual. We can then determine what the proper switch settings should be and tell you how to change the settings accordingly. Should any switch settings be changed you must reboot the computer for those changes to become effective. Another message you might receive is Modem failure. This doesn't neccessarily mean the modem is bad. You may have the wrong comport designated in PNM. If you change your comport selection you must exit PNM and return again for the change to become effective. If you suspect the modem itself to be defective, prove or disprove this by installing another known good modem.

CREATING NEW RATE FILES

As an alternative to burning site specific general registers, or using overlays you may want to have a rate file specially designed for each phone. You can create new .ZAP files from an existing .ZAP file so you can assign each of your phones its own file. Begin from the DOS prompt in the PNM directory (C:\PNM>). Choose a rate file that you want to create from, (NPANXX01.ZAP) and using the copy command create the foundation for the new file. (copy NPANXX01.ZAP NPANXX02.ZAP) You can continue to do this for each new file needed and of course name them anything that you like as long as the extension is .ZAP. Once your new files have been created and edited you can then assign each phone in your database it's new module file name. Just remember that each file takes up 8k of disk space memory, so, you may want to store these files on floppies to preserve your data and save disk space.

COMPUTER COMPATABILITY

At Elcotel we are always striving to certify which hardware (computer, modem, monitor etc.) is compatible and what problems you might have with specific units when using the PNM package. When the following conditions are COMBINED, undesirable results will probably occur.

1. Running PNM on a Hard Drive larger than 30 megabytes.
2. Using MSDOS version 3.3 or later.
3. Drive partitioned in sections larger than 30 megabytes.
4. Press option 5 (parameters) from system menu.

The result will be an indication of "Divide overflow". When this happens the only fix is re-boot. None of our customers to date have experienced this problem. However, we will be compensating for this bizzarre problem in a future releases. For the time being ... don't press the parameters key.

CINDI

"CINDI" is ELCOTEL'S new automated receptionist. Now when you call, "CINDI" will help you to reach the person or department that you are trying to contact. When you call Elcotel or LD*OS you will be greeted with **"Thank you for calling, you may enter an extension number at anytime....Press 1 for Elcotel or 2 for LDOS...If you continue to hold an operator will assist you momentarily."** "CINDI" will also continue to instruct you via audible menus until you reach your party. Once you have reached your party it is a good idea to get their extension number in case you have to call them again. Remember you may enter an extension at anytime and if the line is busy you will have the option of leaving a message for the person you are trying to reach or continue to hold for a live operator. Remember if you have trouble using our new automated receptionist, don't do anything...just wait for our live operator to answer.

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Published by Elcotel Inc. December 1988 Volume 1 Number 9

CASHBOX AMOUNT, TOTAL CASHBOX AND TOTALIZER

These functions comprise a special feature that is intended to be used for accounting purposes. Occasionally, we are questioned on the meaning of these similar terms, so let's try to define each and see how they can be used for your benefit. The "TOTALIZER" is the amount of money the phone has accumulated since it was purchased. Every time you clear status registers (962) the cashbox amount will be added to the totalizer. This is a "read only" register and is non-resettable. The "CASHBOX AMOUNT" is the amount of money presently in the cashbox. The "TOTAL CASHBOX" is the amount of money accumulated from...the cashbox amount each time you clear status registers from PNM. Actually there are two ways to use these functions. The first way is to call the phone with PNM and send the command to "CLEAR STATUS REGISTERS. "The second way is to send the status information from the phone to the computer, using the call home command 961. Bear in mind you must have "CLEAR STATUS REGISTERS" highlighted under the AUTO-LOAD SELECTIONS for that particular phone and of course incoming calls must be turned on. In both cases the cashbox amount will be added to both the totalizer and the total cashbox.

ANSWER SUPERVISION TRICKS

Occasionally we still get calls about phones collecting money on ring no answer or busy signals. This is usually due to the mic opening up sometime during the ring or busy cycle. You should determine when it is opening up and adjust the answer supervision registers accordingly (see April '88 Troubleshooter.) However, you may run into a situation where the mic is opening every time and regardless of how you adjust the filters it continues to open and collect. The problem could be originating in the phone line, the A.C., or the board. Here's a little trick to help narrow it down. Set the phone for rotary dial by turning register 125 on. Make a call and while the phone is dialing pull out the RJ-11 line plug from the receptacle on the board. (You'll know that the phone is dialing when you hear the pulse relay clicking.) If the mic doesn't open this time, you've probably got noise or hum on your phone line. If it does open up, the problem lies either in the board, the A.C. power or the grounding. Noise on the A.C. power line might be the culprit in which case, you should ensure that NO devices such as refrigerators, or soda machines are on the same circuit as the payphone. This is the reason that we stress the phone MUST be on its own circuit. If you have determined that the problem is in the A.C. power, additional grounding may be required.

CHARGE ALL 7 DIGIT CALLS AS LOCAL

When you are filling out your rate questionnaire you need to determine if your phones are in a 1+ calling area. If you are in a 1+ calling area all long distance calls must be preceded by a 1. So, you should answer "YES" to "Charge all 7 digit calls as local" on your questionnaire. If you are not in a 1+ calling area it is not necessary to dial a 1 first for long distance calls within the same area code. In this case you should answer "NO" to "Charge all 7 digit calls as local." Here's an example of each. Let's say you want to call the neighboring LATA and you are in a 1+ calling area. Since it is a long distance call you must dial a 1 before the number. Otherwise you will recieve SIT tones and a telephone company message telling you to do so. Now, let's say you want to call the other side of a large metropolitan area such as New York City. This large local calling area is divided into local calling zones. Zone to zone calls are priced higher than a normal toll call but are still considered local because they reside in the local calling bands and require only 7 digits. Zone calling can also occur within an area code. In New Jersey, you can call from lata to lata dialing 7 digits providing you're calling within the same area code. The telephone company Central Office knows how to price the call and so should the payphone. Your rates will be programmed so that the payphone will look for that exchange in the rates table, determine if it is a local or long distance call and price it accordingly. This is where register 164 can be of use. In case a customer dials a number within this local calling area incorrectly, the phone will add or delete the 1 when necessary. But 164 can only be activated if you have answered "NO" to "Charge all 7 digit calls as local."

QUESTIONS AND ANSWERS

If you have any suggestions or ideas concerning Elcotel products and policies or the phone industry in general, please write them down on the enclosed pre-addressed form, fold it in thirds and return it to us. Although all of the suggestions/ideas cannot be implemented each will be carefully considered. Thank you in advance for your cooperation and participation.

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