Blue Box Equipment And Usage

by Fred Steinbeck

For all you blue box fans out there, here are a number of suggestions for your little devices that you may be interested in. Also in this article are some comments on Nick Haflinger and Ted Vail's blue (green) box in Issue number 68, and the use of blue boxes in the Bay Area.

Speakers

Many phreaks are fond of using telephone earpieces as speakers. This is a thing with a four foot cord to an 1/8" phono plug, gets Vail's blue (green) box in Issue number 68, and the devices that you may be interested in. Also in this article are some comments on Nick Haflinger and Ted Vail's article on Phreaking.

There is, however, a problem with the inductive coupler. In order for it to be loud enough to be heard, you need an inductive coupler, and this is probably just because inductive couplers are not as efficient as speakers.

Keyboards

For me, finding a good 4x4 matrix keypad was a bit of a problem. However, Advanced Computer Products, Inc. (P.O. Box 1729 / La Grange, Illinois, 60525 / (714) 558-8813) manufactures a number of 4x5 (encouraged) keyboards, which are only 2" on a side. A vast improvement. I don't know if Grayhill sells directly, as I haven't talked with you who you could buy their products from.

The Green Box In #68

In issue number 68, Nick and Ted's article on the green boxes was printed, along with a set of schematics for such a device. There are a few comments I would like to make on this schematic.

The LM 747 Output Pin

In the schematic, one of the outputs of the LM 747 op-amp is not numbered on the diagram (i.e., there is no pin number going with that output). Just take the second output. It should be pin number 12. If you have issue #68, you might want to make the connection now, to save time later.

Op-amps In General

For my version of the green box, I'm using an LM324 op-amp. This produces 100 milliwatts, which is more than the LM747 can produce. The LM324, however, has a problem when it comes to biasing correctly. Why, I don't know.

Parts For It

I have had trouble finding 40103's around here. Again, Advanced Computer Products (address above) saved my neck. They carry 40103's, they just don't advertise them. They cost $4.25 each. If someone could find a better (pronounced "cheaper") place, please let us all know.

Fred Steinbeck Issue

I managed to get a couple 27016 CMOS PROM's from National Semiconductor. I think these might be the only PROM's that would take a small enough amount of current to make the project practical. My fully assembled green box takes 42 ma standby current, and 47 ma when producing tones.

For those of you who don't like wiring crystals (no - I hate buying capacitors), Jameco Electronics (1355 Shoreway Road / Belmont, CA 94002 / (415) 592-8097 (COD's accepted)) makes a little plastic package which has four pins, but fits in a 14 pin socket. Give it +5 VDC on one pin, ground on another, and a third will produce a 1 MHz square wave. It costs $9.95, part number 062-1500. The only problem with this device is that it draws 20 ma typical. So use the conventional circuit and you just about halve the current consumption.

Boxing From The Bay

In using a blue box around here (East Bay), WATS numbers and information don't seem to work too well. Or more accurately, at all. So, the method I have been using is this: call a long distance number one that you know can be bleeped off. Then, as the phone on the other end starts to ring, bluff off. Unfortunately, if the number you call sues, your money will be gobbled at the end of the call.

Also, I boxed off of a 415 number the other day, but when I played my tones, every time I got a 1.

This brings up the point of "Why box when you can just dial with your handset?" In my opinion, putting 'em through yourself is more fun, that's why!

Comments, suggestions, bitchin', ideas, etc., should be sent to Fred Steinbeck, c/o TAP.

Cheats won't ring Bell any more

The telephone company is cracking down on cheats who make long-distance calls from pay phones and bill them to someone else's number.

Operators in some parts of the nation are now required to verify any numbers given for billing by calling the referred-to phone number and confirming with whoever answers that the caller lives or works there. If no one answers at the number to be billed, or if someone answers and says the person calling is unknown to them, the call is rejected.

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Tricksters using the confidence game cost American Telephone & Telegraph Co. more than $44 million last year, the company said.
The ARPANET
(Part I: An Introduction)
by Fred Steinbeck

What It Is

The ARPANET is one of the largest governmental computer networks in existence. It was established in the late 1960s as an experimental network. It was originally sponsored by the Defense Advanced Research Projects Agency (DARPA), the National Science Foundation, the Department of Defense Communications Agency (DODCA), and the National Aeronautics and Space Administration (NASA). It was the first successful implementation of a packet-switched computer network. The ARPANET was primarily designed to provide a means of communicating with computers across long distances.

Access To The ARPANET

Are you curious enough to find out how to connect to the ARPANET? You can probably send electronic mail over the network. This is fun, but not truly anything to get overheated about. If you have a computer connected to the ARPANET, you can probably send electronic mail over the network. This is fun, but not truly anything to get overheated about.

There are two basic ways of getting access to the network. The first method is to find the dial-up number for the ARPANET in your area. Then call the number and use it to connect to the computer that you want to access. It is possible that the computer may have a dial-up port, but it may not be available to you. If it is not available, you may not be able to access the computer through the dial-up port.

There are two commands we are concerned with. The first command is to connect to the specified host and imp. To use this command, type: "NICGUEST" or "NIC® and hit return. This will connect you to the Network Information Center at SRI International. The network information center is the central authority for information on the ARPANET. It maintains a database of all the computers connected to the ARPANET, including their hosts and imp addresses. This information is used by the ARPANET to route messages between computers. The network information center is available 24 hours a day, 7 days a week, and is staffed by trained professionals.

Getting A TIP or TAC Number

Next major universities and colleges are connected to the ARPANET. Also, large corporations and computer-dedicated businesses are connected. Here are some specific places that have TIP's or TAC's:

- Center Air Force Station, AL
- Environmental Measurement Laboratory, MIT
- University of Southern California
- University of Utah
- Stanford University, CA
- University of California, San Diego
- University of Southern California
- University of Utah

Use the ARPANET to send electronic mail to other users on the network. This is a fun way to communicate with people around the world. You can send messages to anyone with an ARPANET account.

Stay cool 'til then.

Part II: Use Of The Net

If you have the dial-up for a TAC, type a control-Q (c-q). You should then get the system on the host/imp address for this is "0/73", so the connection is "o/73". If you have the dial-up for a TAC, type a control-Q (c-q). You should then get the system on the host/imp address for this is "0/73", so the connection is "o/73".

The Network Information Center (SRI=-NIC) will require an account. It is worth noting that, if you have access to a computer that is connected to the ARPANET, you can probably send electronic mail over the network. This is fun, but not truly anything to get overheated about.

As far as now, we are in a crisis and we are on the move. We have to be quick and we have to be right. We have to be on the move.

Part III: Getting A TIP Or TAC Number

We have to be quick and we have to be right. We have to be on the move.
Welcome again to a collection of odds and ends that are likely to pass unnoticed by the average reader.

**ESS's**

Ah, yes, the infamous ESS, or Electronic Switching System. The very mention of this system brings to mind the days of dialing a number and waiting for the busy signal. Today, ESS is used by most major telephone companies to provide long-distance service. It is said to be more accurate than the older systems, and it is expected to be in use for many years to come.

**New Payphone**

In the March '82 issue of Bell Labs' Record magazine, I read an article about a new payphone called the Payphone. This phone is supposed to appear in 1983. It is said to be a cross between a regular payphone and an automatic credit card terminal. It is expected to be popular with the public.

**Automated Coin Toll Service (ACTS)**

This service allows users to make long-distance phone calls using coins. It is said to be more efficient than the old systems, which used to require the user to manually insert the coin and count the dimes.

**books to get**

An excellent book I have just discovered is "Signalling in Telephone Networks" by Samuel Wein. This book discusses many aspects of signalling, including common channel signalling, CCIS (common channel interoffice signalling), and many other topics. Highly recommended.

**Books I'd like to get**

In issue number 68, The San Jose number in 1 number 65 is 781-3111 San Jose.
UNIX Wizardry
by Fred Steinbeck

In this column, I shall try to show a few tricks I have picked up while hacking on the UNIX operating system. This is not meant to be a tutorial; I assume you are relatively familiar with UNIX. Enough to know what I'm talking about, in any case.

I use the UNIX systems here at U.C. Berkeley, so a few notes about them: First, they run Version 7 UNIX, and generally run under the C-shell. I think that most systems around use the C-shell today, though not version 7, so that shouldn't be any problem.

Directories & Terminals: Some good directories
to mess with are /etc, /usr/doc, /usr/spool, and /dev. This last directory, /dev, contains all the devices (peripherals) on the system.

UNIX treats all I/O devices as files, which means that there are some special things you can do with them. First, all terminals hooked into the system have a file associated with them. At UCB, most of the terminals are /dev/dz##, /dev/bx###, or /dev/mxt#. The "#" signs are digits. This last directory, /dev, contains all the devices (peripherals) on the system.

In any case, the "who" command prints out the names of the terminals people are on. So, let's say that a friend of yours has logged on, using terminal "dz28". Well, the filename which corresponds to terminal "dz28" is /dev/dz28. Following this to its logical conclusion, if we type

```
cat /usr/dict/words > /dev/dz28
```
and hit return, we will cause the entire 50,000 word dictionary (in the file "/usr/dict/words") to be printed on his terminal. If he happens to be on a 300 baud dialup, well, so much for him.

You can probably see the difference between this and the "write" command. "Write" prints "message from so-and-so" (your name where it says "so-and-so") on his screen. Well, "cat"ing into another person's terminals doesn't reveal your identity to them, so it is less likely that they will be able to retaliate.

Another good command, when used in conjunction with terminal filenames, is "stty" (set tty). The command

```
stty 0
```
causes you to be logged off. But, if we specify a terminal to send this command through, it will effect the user of that terminal. Therefore,

```
stty 0 > /dev/dz28
```
will logout your aforementioned friend (boy, you sure treat your friends rotten, don't you?)

Well, it's 2 in the morning right now, so I'd best leave you to your UNIX wizardry, and me to my sleep. But there's more...soon: anonymous messages in the system bulletin board program.

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ACTS Update
by Fred Steinbeck

I wish to apologize for some misinformation in a previous column of mine (Gibberish II). In this column, I mention ACTS, the Automated Call Toll Service computer which is replacing operators for all incoming calls at pay phones. I gave the impression that ACTS would be hard to use red boxes on, as it, being a computer, would be able to detect timing differences between red boxes and the pay phone.

I have never been more wrong. I have witnessed successfully boxed calls using a manual red box—one where the length of the tone is determined by how long the switch is held down. In other words, the button is pressed twice to simulate a dime. ACTS happily accepts this, so I conclude that it doesn't know a millisecond from a hole in the ground.

I should mention another possibility. If ACTS suspects toll fraud, it allows the call to go through, and then notifies an operator. This probably isn't so. Occasionally an operator will come on the line and ask for money, but this only seems to happen when the "money" is deposited too fast.

On a related subject, I have found what seems to be the best way to blue box from the Bay Area. Call a number you know can be blue boxed off from a pay phone, using your red box. Then disconnect and re-route your call with your blue box. The most it will cost you is a nickel.

I know a girl who did this the other day. A few days later the person she called got a call from Bell Security. They knew the number she called, the number she called from (which is why you should use a pay phone), the time of day the call was placed, and the length of the call. So it might be prudent only to do this when scanning for operator codes, etc., unless you know the person you are calling won't talk.

Q. In his fascinating book "Russia," Robert Kaman claims that there are no telephone switchboards in the Soviet Union lags 50 years behind the U.S. In creature comforts the Soviet Union has its own phone, its own separate phone number, its own outside lines. In creature comforts the Soviet Union lags 50 years behind the U.S.

A. As a phone phreak, we are all called upon from time to time to explain to our less technical friends "How it all Works." Now there is a book you can hand them, (or tell them to get) called All About Telephones, by Van Waterford. The book glosses over the history of telephone service in the U. S., and then explains the workings of the inside of the phone. His explanation of the network inside the phone left much to be desired, and he didn't explain fully why there were so many harmonics available from the ringer. Then again, that wasn't what the book was really about.

Most of the book seems to describe what telephone hardware is out there in the marketplace, and how to hook it up. It goes into modular connectors, cordless telephones, decorator phones, repeater dialers, calculator phones, scramblers, security alarms, facsimile, and mobil radio phones.

It includes a glossary, which is pretty good for the new comer. Most important, it has a list of suppliers, including addresses, of all the companies mentioned in the book.

The blurb on the back of the book also mentions The Handbook of Telephones & Accessories ($9.95 paper, order #997) which I hope to review in a future issue.

All About Telephones (order number 1997) is available for $5.95 from Tab Books, Dept TAP, Blue Ridge Summit PA, 17214.

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Book Review

by Cheshire Catalyst

Curling up in front of the fire

As a Phone Phreak, we are all called upon from time to time to explain to our less technical friends "How it all Works." Now there is a book you can hand them, (or tell them to get) called All About Telephones, by Van Waterford. The book glosses over the history of telephone service in the U. S., and then explains the workings of the inside of the phone. His explanation of the network inside the phone left much to be desired, and he didn't explain fully why there were so many harmonics available from the ringer. Then again, that wasn't what the book was really about.

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