TAP

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EDITORIAL
by
TOM EDISON

As 1975 comes to a close let us reflect upon some of the major events of the past year: the big fire in N Y Bell's C O touched off by Pa Bell's own arsonists in a feeble attempt to prove to the world the necessity of absolute monopoly over the communications industry; the never-ending rate hikes that Bell's puppet, the P.U.C., forces on us in the name of giving its shareholders a fair return and giving the rest of us a swift kick in the ass: the charge for directory assistance; the disclosure that Pa Bell monitored and recorded over 30 million calls using millions of dollars for Box detection equipment and salaries for untold overtime man-hours all paid for by increased phone rates with absolutely no improvement in "service" to the public; and finally, the change in the Fortress oscillator from a single tone to M F tone. Quite a year for Pa Bell- one of arson, greed, corruption, and invasion of privacy!!! Big Brother Bell is watching all of us! What can you do?

YOU CAN JOIN TAP! Tap is more than just the phone phreaks underground newsletter- it's a course in basic survival! Every reader has some information to share and we can all learn from each other. All it takes is a little time, some paper, a stamp, and an envelope. You don't have to be an expert to have a good idea. You may not have noticed it but in the last three months Tap has put out three issues- three damn good issues made possible by an increase in our staff. Help us to continue to put out the most informative newsletter since the Bell Journal.

MERRY CHRISTMAS AND HAPPY NEW YEAR

FROM THE TAP STAFF

AL BELL	DAVE
TOM EDISON	CHARLES
Mr. PHELPS	R. SYSTAT
B. J.	

Bell System

This cartoon was sent to us by a New York reader; where it was from, if anywhere, is unknown but we wanted to share it with our readers.

BLACK BOX BEATS BELL IN THE FOURTH!

We have had several issues dealing with Black Boxes, those wonderful little devices that allow the user to receive long distance calls at no charge to the calling party. This article will deal with the different designs that can be used.

The basic sections of most black boxes are the DC blocking capacitor, the power source, and the ring stopper.

The DC blocking capacitor prevents the central office equipment from starting the billing procedure. In some areas as much as 10 milliamps can flow through the line without starting billing, but why have any current flow if a capacitor can easily block it all? The answer is that by having a small amount of current drawn from the line, the power source can be eliminated, as we will see later. The capacitor should be .5 mfd. to pass the lowest voice frequencies. Raising this value only extends the low frequency response of the conversation, but does not greatly increase the volume. The capacitor should be non-polar, meaning it does not have a plus or a minus sign on it. If a polarized capacitor is used, the polarity of the line voltage must always match the polarity of the capacitor or it would lose capacitance and leak current instead of blocking current. The polarity of the line cannot always be guaranteed to remain constant, depending upon the type of phone office that serves the phone. However, if a line shows itself to be of constant polarity (required for Touch-tone phones)an electrolytic capacitor can be used, permitting a reduction in capacitor size. It should be rated at 150 volts or higher. at .5 microfarad, non-polar (which means non-electrolytic), and if electrolytic, it can be as high as 100 mfd., though only .5 mfd. is necessary.

To talk back to the calling party, the owner of the black box must have a small DC current to operate the carbon mouthpiece in the handset. By bridging the capacitor with a 10K resistor, enough current flows to activate the mouthpiece without drawing enough current to start billing. Some designs use low values like 6.8K but this does not insure that the equipment will not begin to bill for the call. To get a louder signal back to the calling party, a battery and a resistor can supply the talking current without drawing it off the line. 25 milliamps is a good current. The resistor needed can be calculated by Ohm's Law:

$$\text{Resistor(in ohms)} = \frac{\text{Battery Voltage}}{.025}$$

Example: 1 $1/2$ volt battery uses a $\frac{1.5}{.025}$ = 60 ohm resistor.

6 volts= 240 ohms, 9 volts = 360 ohms, 12 volts= 480 ohms.

The ring stopper allows a large surge to flow through the line for only an instant. If it doesn't flow long enough, the line doesn't stop ringing, and listening to the phone with the Black Box switched on one would hear a loud ringing sound. In between these rings one can usually talk to the caller, but this only works on some electromechanical exchanges, whereas in ESS systems (Electronic Switching Systems) the voice circuit is not connected until the called party answers the phone. Talking between rings can be difficult but it is cheap and Trixon did say we'd all have to make sacrifices before he phlebbed out of office. This method is almost immune to detection for the black box detectors available only test the line after the ringing has stopped.

If the ring stopper allows current to flow for too long, the phone equipment will think the phone has been answered, and then of course hung up, so the equipment will disconnect and send a new dial tone in 10 to 30 seconds. The ring stopper usually works best by letting the surge last just long enough to stop the ring, and no longer.

The Basic Black Box is illustrated in Figure 1. When the switch is opened, current and sound can only pass through the resistor and capacitor. They work as already described in the sections under DC blocking capacitor and power source. When the switch is closed, the phone acts normal.

To perform the ring-stopping function, the switch is closed and the phone is quickly picked up and hung up. Then the switch is opened and the conversation can take place. The circuit in Figure 2 is from Abbie Hoffman's Steal This Book. This circuit is basically the same, but the capacitor is now 100 mfd. When a call comes in, the switch is opened, and the phone is then picked up. The discharged capacitor soaks up a big pulse and thus acts as the ring stopper. After the pulse, it doesn't charge itself up any more and then performs the DC blocking function. Obviously the size in mfd's is critical in this design because it determines the length of time that the pulse lasts. When the switch is closed to make the phone act normally again, the huge capacitor is discharged by the switch through a 10 ohm resistor that limits the current. Without this resistor, this big capacitor will be damaged by the discharge surge.

Figure 3 shows a similar circuit that uses two 52 volt zener diodes back to back to stop the rings. To answer, the phone is picked up after the switch is opened, and the ringing voltage avalanches one of the zeners. The surge makes the line voltage drop, thereby taking the zener out of avalanche. This ring stopper is very quick, and is recomended by phone phreaks who are served by sensitive equipment.

Figure 4 uses a simple push button for the ring stopper. This provides manual control of the timing of the pulse. It can be hit quickly, and if it doesn't stop the ringing, it can be hit for slightly longer and longer times until the ringing is stopped. The power source is a 6 volt battery, which can be 4 D cells or C cells strung together in series.

The simplest Black box circuit published to date has been the one in Issue 11 of TAP (YIPL at the time). The capacitor is built into the phone, the ring stopper is the pick up and hang up procedure, and the only parts needed are a 10K resistor and a SPST switch. We have plans for the same thing for Automatic Electric phones for those customers of General Telephone, and for Western Electric phones serviced by Bell Companies.

Calls on Black Boxes are usually kept short for safety, and of course no other extensions can be picked up during the call or the call will be billed. Most phone phreaks remove Black Boxes from their phones at the first sign of suspicious activites on their phone line. For the ultimate simplicity in Black Box design, see letter below.

Dear TAP,
Here is a description of a poor man's mute. It requires no parts at all, just a trimline style rotary dial telephone. Here's what you do. When you want to mute a call pick up the handset from the cradle slowly and at the same time keep the hookswitch in the base held down with your left hand. Now with the hand holding the receiver move the dial as if you've dialed a "1" and let it return half-way. Then release the hang-up switch on the base. If you have done it right you will hear the ringing coming out of the earpiece, so to stop the ringing move the dial slightly back and quickly return it to the middle position. You will now be able to hear your friend but to talk to him you will have to yell into the earpiece, because the transmitter doesn't work on this cheapie mute as there is no resistor to let current through. One should practice manipulating the dial before trying to mute a long distance call.

This mute is very primitive, but the beauty is the fact that no alteration of the phone is required, so no evidence in case of a bust. Any dial type trimline will work. It won't work with other phone types because the earpiece is short when the dial is moved, so you would have to remove the shorting wire from the dial, and if you're going to do that you might as well go ahead and put in a resistor and switch. So let's see those trimline phones (for which you pay extra) put to good use.

-CALIFORNIA-

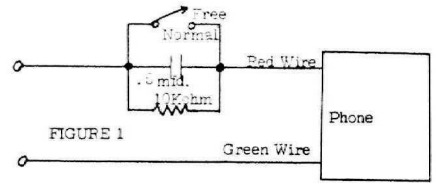

FIGURE 1

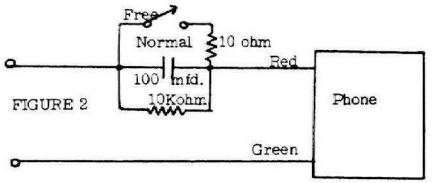

FIGURE 2

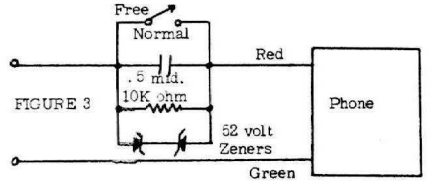

FIGURE 3

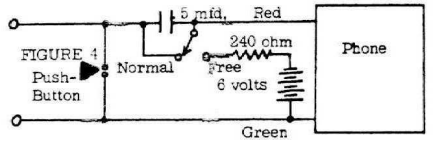

FIGURE 4

ASK Mr. PHELPS

Dear Mr. Phelps,
I've been hearing rumors from friends that the phoners are changing the tones in the Fortress phones around New York and that by January 1976 the Red Box will be obsolete. Is this true, and if it is, does anyone want to buy antique red boxes?

-DISCOURAGED-

Dear DISCOURAGED,
Barney here. Jim passed this letter on to me. It is true that the phone company is modifying the pay phones, but don't give up! We've discovered that the reason for modification is to allow automatic machinery in the future to replace all the human operators who presently listen for the tones and tell you how much to put in.This will actually make it easier to use Red Boxes than it is now! To prevent the machinery from accidentally being tricked into thinking money is deposited by the caller's voice frequencies, the p[illegible]s are being modified to generate Two tones instead o[illegible], but the timing of the tones is exactly the same. The old tone was 2200 Hertz. The new tones are 2200 and 1700 Hertz, so all Red Boxes can be easily modified by adding the 1700 Hertz oscillator and mixing it in at the same volume to the old oscillator. Plans for doing this will be published in the next issue of TAP, in time for the modifications of the pay phones to be near completion in New York.

Advisable Missions Force

Letters From Readers

Dear TAP,
This is Captn. Crunch, I would like to mention a few things. First, I'm glad to see you boys back in operation & am curious to why you stopped publication for a while. I also want to state my willingness in contacting as many would-be freaks as possible, in person only & not by mail. Therefore I am offering to anyone who wants to come see me in Mt. View all I know in electronics, computers & related technologies including freaking of course. However I dislike talking on the phone, nor communication by mail. If you even receive this letter, I would consider it a miracle. My current address is: J. T. Draper, 1905 Montecito Ave. Apt. #6, Mt. View, Ca. 94040 for those who want to set up a meeting by mail. Phone is (415)964-9041 and 965-4210. Of course I am not underground. A while back National Review published my phone number in the hopes that people would bug me by calling at 3 am etc. They didn't realize that I made hundreds of new friends & taught hundreds the art of freaking. Any people who want to visit me are welcome. They can stay with me up to a week (it usually takes that long to teach them). You might want to publish that fact.

I am starting a computer data-base of info for phone freaks & computer freaks. This data base will reside in the computer company I work for. There are 3 access levels of security which are:

1. General- Everybody and Anyone.
2. Protected-For sensitive numbers that would be changed if widespread.
3. Secure-Random scrambled data, accessable only over a non-tapped direct connection I cannot discuss here.

Cost 99¢/hour connect time charges, 12 midnight to 6 am. (PST), 3 am. to 9 am. (EST). Time includes IO and uses Standard TTY terminal. No WATS lines so people will have to figure out how to call it- Anyone interested, call 964-5331 (415). This is a company called "Call Computer". It uses an HP 2100A with 100 Megabyte storage. A very tap secure system, this is not a cheap HP2000F system but a much better BTI system-"Basic Timesharing System". So far we have 20 or so people, each with their own access code. I usually give a lot of information this way, more so than by phone, but less than in person. It's cheaper than Western Union, more secure but of course calling the computer costs money (or does it?). One could use credit cards because if the operator tried to call back a data tone would be reached. Good luck.

-JOHN-

Dear TAP,
I just had a new phone put in upon which my previously perfect black box no longer worked. It took some time but I finally realized that the red wire (from the wall to the L2 terminal) was backed up by the black wire (from the wall) which is not normally used in the phone hook-up (but which on my new phone was also connected to L2). Easy remedy to this of course is to remove both the red and black wires from L2 and connecting them both to the proper wire on the black box.

Phone installer friend of mine told me he was told to hook up both wires from now on but he didn't know why.

-CONNECTICUT-

Dear TAP,
Want to advise your readers how to get additional phone equipment from Pa Bell for free. I just got a long type stretch cord that the business office bills $22.50 for. The way to do it is not to deal with the business office but with repair service instead. Break any existing equipment you have (say you saw a snip and take commercial and cut your phone cord, then postponed moving) and call repair service. When they come, the guy will give you whatever alterations you wish. Not only did he give me a new cord but I got a new phone too. He said repair service would only forward a bill when this becomes habitual with a person.

-NEW YORK-

RAO Credit Card Codes

Area	RAO Codes and Locations
201	094 Newark, 091, 093
202	032 Wash. DC, 033
203	020 Hartford, 010
206	163 Seattle, 167
209	254 Stockton, 289 Fresno
212	072, 074 N. Y. C., 017, 018, 021, 024, 022
213	183, 184 L. A., 046, 182, 187, 332
215	041, 042, 043 Philadelphia
216	050 Akron, 082 Cleveland
218	126 Duluth
301	011
302	023
303	153
305	044 Miami
307	137
308	097 Omaha, 237
312	097 Chicago, 098 Suburbs, 234
313	083 Detroit, 013, 096
314	177 St. Louis, 143
315	303
401	019 R. I.
404	035 Atlanta, 022, 025, 063
406	154 Montana
408	293
412	030 Pittsburgh
414	088Milwaukee
415	158 S. F., 167 Berkeley, Cakland
416	476 Toronto
501	147
502	550
503	131 Portland
504	046
505	105
509	128 Spokane
513	185
516	127 Long Island
517	224 Lansing
601	059
602	064, 065
604	493 Vancouver
608	201
612	126 St. Paul
613	473
615	047 Nashville
617	001 Boston, 023 Worcester,
702	271 007, 008
703	033
704	319 Charlotte
713	151 Houston
716	534 Rochester
801	155, 383
813	152, 027
814	208
901	187 Memphis
914	066, 141

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5- Blue Box 1 → Early Model
6- Blue Box 2 → Early Model
7- Tuning your organ, 3-slot ripoffs
8- Credit Card Calls/1972 Code
9
10 → Black Box
11
12 Blue Box Plans
13 Int'l calls & Codes, Bluebox plans
14 More codes, AT&T Papers, Ca. Test numbers
15 1973 Credit Card Code, T network
16 Red Box plans
17 Red Box, Line Relay, Don't Get Busted
18 Outgoing long distance call stopper
19 Snoop light, Taping Fortress tones
20 Cheese Box(Conference line, or loop-around)
21 Automatic Phone Tap, Convention Report
22 Answeroo, "How we catch Red Boxers"
23 Free Electricity
24 Fraud Detectors, Index of TAP issues, 1974 CC Code
25 New Red Box, Free Gas
26 New Bluebox, Con Ed key (also 23, 29)
27 Free Electricity, Blue Box Correction
28 Reading Computer bills, loop suffixes
29 Improved Bluebox & Snooplite, Int'l codes
30 Fortress Pay Phones, Party Lines

FACT SHEETS -25¢ each
1. Credit Card Calling Hints
2. Receiving Long Distance Calls Free
(Same as Issue 11 for General Telephone Co. Customers instead of Bell Telephone Co.)
Displayed Red Box
2600 Whistle Perfector → 50¢ per set.
Dual tone oscillator
Anti-Bell Button-50¢ 10/$3

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Steal This Book-$2.25
Monopoly - $1.20

Courses-50¢ each: A-Basic Electricity, B-Alternating Current, C-Basic Phone Operation, D-Amplifiers.

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This Does Not Compute

First, there were the phone phreaks, those technological marvels who used blue boxes, black boxes and other colored boxes to fleece AT&T out of a few dollars. Now, it may be the dawn of a new space-age whiz, the keypunch crazies.

New Scientist magazine reports that a 15-year-old London schoolboy named Joe used a school computer terminal to crack the security system of one of the biggest time-sharing computers in England. With no formal computer training and just four months of schooling, Joe was able to gain access to top-secret information from various big businesses. He even went so far as change the data stored in the computer.

Spokespersons for the computer involved (even a computer has spokespersons these days) admitted that the boy wonder was in a position to completely take over the entire system, shutting off other users, changing passwords and altering bills sent to customers. And Joe could have gotten away with it had he only kept his young mouth shut. Instead, he sent a note completely confessing what he had done. A new security system for the computer was immediately installed.

from - Real Paper May 14, 1975

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