It's very convenient (and cozy) to have extension phones where you need them.

**The Complete Telephone Information Center**
- How to handle obscene telephone company employees
- How to get the best from your telephone
- How many attachments can you wire to your telephone line?
- What you can get for a dime (which is refundable)
- How to call long distance toll-free
- dialing direct, area codes, long distance rates or something else about your telephone service?
Just a Note....

You apparently are interested in what TEL has to offer or you wouldn't have responded to the advertisement that brought you what you are now reading. Starting in January—TEL will include a complete telephone engineering course in monthly chapters beginning with the basics; TEL will answer readers questions and publish letters with greatest potency; TEL will compile an information exchange from readers tips listing the phone company's test code numbers and routing now in use; TEL, among many other feature articles, will include in each issue Current News Items, Plans, Illustrations, Stories, History, Comics, Games, Projects, and the secrets Ma Bell's toll not.

Telephone Electronics Line is the only publication of its kind, revealing the demanding secrets of the nationwide telephone monopoly. TEL is supported entirely by each and every one of its subscribers and therefore contains absolutely no advertisements. If the TEL staff were to convince you to sell just one subscription to a friend, a neighbor, a relative, your employer or employee, a teacher, or just about anyone for that matter, you would be holding a booklet with twice as many pages and the knowledge of a dozen telephone company employees.

If you have not already signed up for a subscription or would like to give a friend a New Years present, you still have time to send in the form that appears on page 10 for the January issue. It's not too late to receive all the 1975 issues of Telephone Electronics Line—delivered to your door each and every month of the year by an authorized agent of the U.S. Government.

MERRY CHRISTMAS

Hoping this issue reaches you in good spirits, the staff of Telephone Electronics Line wishes its readers the greatest of a New Year and a Merry Christmas.
Editorial

By Jack Krzywyk

Educator Mary Harris had her students harass homebodies on the telephone, as if Peter Piper picked a peck of people numbers and punished them with a poor time.

The academic object was to discover whether innocent victims answer hostility with hostility, according to Behavior Today magazine. University of New Mexico graduate students were instructed to make random wrong number phone calls, harass answerers and then record results.

Pestered people lose patience, learned Ms. Harris, a finding any listed human being would have known without testing. Friend Burt Prelutsky admits as much in the same issue. Sometimes I think educators taking surveys on hostility and aggression raise the ambient levels of hostility and aggression simply by adding to the natural static abroad in our land.

Other observations of the obvious from the Albuquerque experiment were that victims gave male callers more lip than female, turning surly sooner and cutting off the connection earlier. That's because males make more mischief on the telephone; who ever heard of an obscene caller with a soprano voice?

What the best didn't examine was the calling end of the interruptive wrong number. Why do people who make a mistake, even an honest mistake, want to punish the innocent person on the receiving end?

I've had an extraordinary experience along these telephone lines because I have one phone reserved for business calls. When that phone rings during non-business hours, I'm almost positive it's a wrong number call.

But to play it safe, I always play polite; I pick up the phone with a fairly friendly hello. "Morris?" a voice may say. "No," I'll answer, "no Morris here, you must have a wrong number.

Almost half the time the errant caller will then say, "Who is this?" And I will then say, who are you? Only idiots tell perfect strangers their names.

The person who dialed the wrong number invariably becomes angry when I refuse to identify myself. Maybe the caller is angry at himself or herself for having lost a last dime, perhaps, or for having been handed a mistaken message. But the anger is turned outward, at me. As if I had no rights to privacy now that Morris the mystery isn't available.

The more polite Morrie-seekers will ask, "What number is this?" And I usually say, sorry, its unlisted, because if the caller is a crank I don't want him cranking right back.

If educator Harris were really doing original research, she'd have students trying to figure out why people who dial wrong numbers take their frustrations out on wrong victims. Their behavior is the interesting, infantile response—a child who believes a table for being there when a baby stubs a toe on it.

People don't behave that poorly in face-to-face situations. Someone who mistakenly slaps someone else on the back apologizes profusely for imposing on the wrong party. Such a someone may be embarrassed—and afraid of a punch on the nose.

The telephone is different; it prevents physical aggression and permits anonymous aggression. The victim can't fight back, except verbally. So the first person to make a mistake makes matters worse by adding insult to interruptive injury. The telephone is a perfect disguise for breaking and entering.

Don't call me with your inquiries, Ms. Harris, and I won't call you. Morris don't live here anymore and I respond poorly to academic provocation.
HOW TO CALL LONG DISTANCE TOLL-FREE

By David Rees

Many of you have probably read various articles published in well-known magazines which describe the activities of the notorious "Phone Phreaks." Three such articles which might prove to be of interest are "Hello World-Tricks With A Little Black Box" published in the April 21, 1973 issue of the Canadian magazine, The Province, "Regulating The Phone Company In Your Own Home" published in the June 1972 issue of Ramparts Magazine, and "Secrets Of The Little Blue Box" published in the October 1971 issue of Esquire.

The Ramparts article was of a highly controversial nature because it published not only information about phone-phreak activities, but in addition, described how to build a "Black Box," "Blue Box," or any of the various electronic toll fraud implants. There are a multitude of tricks and methods which may be employed by any member of the general public despite his or her electronic knowledge. Most of these methods, though sometimes not as effective as a "Blue Box" or similar contrivance, often are more easily used and convenient at the spur of the moment.

Ever since its introduction, the credit card has developed the greatest notoriety as a means for committing toll fraud. The acquisition of someone's credit card number may mean plenty of free telephone calls at the issuer's expense. The codes follow a pattern which consists of the following elements: the 7-digit telephone number of the credit card holder + a Revenue Accounting Office (RAO) code. Unfortunately, we do not have the 1975 credit card code, however, we hope to acquire it soon. This code allows the operator and those who know the code can make up credit card numbers on the basis of a specific key digit in the telephone number + a Revenue Accounting Office (RAO) code. Unfortunately, we do not have the 1975 credit card code, however, we hope to acquire it soon. This code allows the operator to check the validity of the credit card number in question, and those who know the code can make up credit card numbers which check out as valid by the operator.

Much of the toll fraud committed is accomplished through the use of telephone company established test circuits and test numbers. Phone Phreaks who make it a practice of being "parasitic" on these test circuits to accomplish free long distance telephone calls are called Number Phreaks. The Average Number Phreak collects many numbers of call diverters, tie lines, and loop arounds.

The best known and the most effective of the above are the loop arounds. Loop arounds are test circuits which are accessed by two standard 7-digit telephone numbers. Each number is called by two parties respectively, they are connected together audibly and may speak through the loop around circuit. This is useful in evading message unit charges. Even though the two parties may be 3 or 4 message units apart, the loop around may be a number which is in the local calling area to both parties.

Completion of the free telephone calls is not reserved only for those with the technical knowledge and skill to construct a "Blue Box" and use it properly, nor to those who build a "Black Box," "Red Box," or any of the various electronic toll fraud implants. There are a multitude of tricks and methods which may be employed by any member of the general public despite his or her electronic knowledge. Most of these methods, though sometimes not as effective as a "Blue Box" or similar contrivance, often are more easily used and convenient at the spur of the moment.

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This use of the loop around test circuit barely approaches their full potential. Some loop arounds are set up in such a way that when the operator checks the number for the loop around will be referred to as a "side" of the box. Some loops do not charge the caller, even if he is calling long distance. Though these loops are not common in specific area codes, there are nearly 100 loops across the country that are non-supervising (do not charge callers). They are somewhat rare, and dangerous to use. For those of you who can hear and recognize the supervisory signals which mean they are being billed for a call, there are no surprises. But some unfortunate souls have hit the ceiling when they discover that some sneaky switchman made the "non-supervising" loop around they were using supervising, thus billing them for hours of long distance calling. This is hard to explain to a cranky and sceptical business office person. In a future article dealing with long distance circuits, TEL will attempt to teach the method of detecting when billing occurs and how to hang up in time to avoid it.

Regular loop arounds, which are much more common, have their potentials. It is very handy to know plenty of loop numbers in your area and the areas you wish to call. Some methods for exploiting this resource are as follows:

Let us say, for instance, you are on vacation and wish to call a neighbor or friend. You place a person-to-person collect call from a pay telephone to his line to signal him that you wish to speak. He knows then to call a local loop around number because you have pre-ar-ranged this with him. You then make a collect call to the other side of this same loop around. The operator who is placing your call will then be connected with your neighbor who is on the other side awaiting your call. He obviously accepts the collect call on behalf of the loop around and the bill is sent to the central office where the loop is located. They don't pay but are at a loss to find out who should!

Another method: Place a call from a location where there are two pay telephones. With one, dial one side of a loop around, the other, call the operator and place your call to the long distance number you desire. Bill the charges to the other side of the loop. When she calls to verify, you are connected through to her on the other pay phone and you accept of course. This is good to make calls only in companies or people who will not give you away.

Many of you probably know of these loop arounds. For those who don't, you must find them. The most effective way of doing this is by sequence dialing a set of numbers with characteristics similar to those of loops. Most loops end in suffixes which are truly telephone company type numbers. Tel. Co.'s favor suffixes with "1", "9", or "9" appearing recurrently. Here is a set of known loop suffixes for specific areas. It is by no means complete. We would therefore appreciate any contributions anyone might make with respect to improving and enlarging our list.

<table>
<thead>
<tr>
<th>AREA CODE</th>
<th>STATE</th>
<th>LOOP ENDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>NJ</td>
<td>9929-9930</td>
</tr>
<tr>
<td>213</td>
<td>CO</td>
<td>0004-0005</td>
</tr>
<tr>
<td>215</td>
<td>PA</td>
<td>0004-0006</td>
</tr>
<tr>
<td>303</td>
<td>IL</td>
<td>9920-9931</td>
</tr>
<tr>
<td>312</td>
<td>MI</td>
<td>9920-9931</td>
</tr>
<tr>
<td>313</td>
<td>MI</td>
<td>9930-9937</td>
</tr>
<tr>
<td>412</td>
<td>NY</td>
<td>0092-0093</td>
</tr>
</tbody>
</table>

HOW MANY ATTACHMENTS CAN YOU WIRE TO YOUR TELEPHONE LINE?

I was once asked jokingly by a Telephone Enthusiast, "If I can plug anything I want into my power line, why can't I plug anything I want into my phone line?" Truly, the phone company in most cases frowns upon the practice of hooking up one's own telephones, answering devices, and assorted other telephone accessories directly to the telephone lines.

Telephone companies are usually regulated by a commission located in their state which is established to limit public utilities with respect to their prices and practices. This is done because all utilities constitute geographical monopolies. In most cases, the connection of customer-owned equipment directly to the Tel. Co.'s lines are prohibited. Penalty for such an action is the removal and denial of telephone service. For the purpose of associating customer-owned equipment with the telephone network, tariffs usually provide for "connecting arrangements" or "couplers". These devices are designed to protect Tel. Co. lines from blown fuses on the part of the customer's equipment which may cause protector blowouts, central office shock hazards, or similar problems.

Some companies would have you believe that you can buy or construct your own "legal connector". This is true in part. The fact is, you may make your own duplicates of the Tel. Co.'s connecting arrangements, however, these are designated as "customer-owned equipment" by tariffs and cannot be hardwired to the telephone network. Your home-made connecting arrangement will require a tariffed Tel. Co. owned connecting arrangement in order to be hooked up to the telephone network. Ridiculous? Yes, but true.

It is unfortunate that Tel. Co. charges so much for these devices while their function is so limited. In order to hook up one's own answering machine, it often costs more to rent a coupler for it than to rent a Tel. Co. answering device. In this way, Bell and other Tel. Co.'s manage to monopolize on equipment. For this reason, you may decide that it is better to hook up foreign equipment yourself and take your chances, than to rent a complicated and often annoying coupling arrangement. In order to do this safely you must follow some important guidelines.

AVOIDING DETECTION

Your most important concern when violating tariffs is to avoid detection by Tel. Co. authorities. In most cases, the telephone company will not discover your attachments whether you make it difficult for them or not. The fact that so many unauthorized extension telephones are hooked up across the country would seem to point to this assertion. One of the most common practices used in making extension telephones undetectable is to disconnect the bell. Thus, no extra bell impedance is present on the line due to the extension. You may disconnect the ringer (bell) in your telephone by removing the wire or wires from the bell that connect to the network (the connecting block with many screw terminals on it). This will effectively stop the ringing and detection of the telephone when in the "on-hook" condition.

In the Bay Area (615 NPA) a recent effort has been made by Bell System authorities to counteract the enormous number of illegitimate extension telephones hooked up by customers. Most of these customers have avoided detection by disconnecting the ringers in these extensions. A new process developed by Bell involves the measurement and recording of the impedance of everyones telephone line. This information is logged down. Then, a year later, the same measurements are made and recorded. The measuring devices used are extremely accurate and can discern the difference in impedance caused by even extra lengths of wire. Thus, if some customer hooks up an extension phone, even with the bell disconnected, the phone company will detect the difference and send a note warning the customer to cease and desist. Such campaigns may be initiated in other areas without your knowledge, however, the chances against it are large due to the high cost of such a project.

In the case of attachments such as automatic answering devices or call forwarding units, your best bet is not to give Tel. Co. any reason to check your line. In many Bell System offices, automatic trouble recording equipment monitors the status of much of the central office. If your particular device causes problems, this equipment will point it out to the switchman who may then notify your business office administration. If your telephone office is old, the trouble detection equipment is most likely to be poor or non-existent, and you needn't be so careful.

HANDY ACCESSORIES

The following circuit is a ring detector which can be used to detect additional extensions which ring. It is undetectable by the local switchman, due to its extremely high impedance. The parts are readily available at any electronics supply store. In order to make extensions ring, simply wire the relay contacts to control the supply of a 20 cycle AC source of 115 volts to the bell in these extensions. In addition, it can be wired to control a gong, a chime, a buzzer, or such.

![Ring Detector Circuit Diagram](attachment:image)

If all you need is an audio connection with the telephone line, use the second circuit indicated here. It is simply a very high impedance input/output network for associating amplifiers or recording equipment with the line.

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December 1974
How to handle obscene telephone company employees

When I called the switchman by dialing the switchroom number of a telephone company I served, he had a ready-made argument to defend the company's actions. Since I was not yet familiar with the telephone system, his claim was that I had no right to expect privacy in a public telephone line. He went on to explain that since the line had been illegally monitored, the company was entitled to provide me with a general admission statement. This was unacceptable to me, and I demanded that the line be repaired and the switchman be held accountable for his actions.

However, the switchman was not satisfied with this solution. He claimed that he had no authority to repair the line, and that the company had made a decision to keep the line as it was. I insisted that he repair the line, but he refused, stating that the company's policy was to maintain the line in its current state.

In the end, I was left with no choice but to file a formal complaint with the California State Public Utilities Commission. This process is time-consuming and requires a lot of patience, but it is necessary to ensure that the company does not get away with illegal actions. I would recommend anyone in a similar situation to use their rights and seek justice for themselves.

The Automatic Wailer

By David Edwards

Dear Editor:

I was recently driving down the highway when I noticed a car in front of me that had its hazard lights on. As I approached the car, I realized that it was a police car, and I became concerned that the officer might be in danger.

I pulled over and asked the officer what was going on. He explained that he had received a call about a suspicious vehicle and was investigating the situation. I offered to help in any way I could, and the officer accepted my offer.

After arriving at the scene, we found a group of people who were protesting the local government. The officer explained that he had been sent to clear the area, but that the protesters were not going to go away without a fight. I offered to help clear the area and the officer agreed.

We were able to clear the area quickly and safely, and the protesters were dispersed. I was very pleased with how quickly and efficiently the officer had handled the situation, and I offered to help again if needed. The officer accepted my offer and we continued to patrol the area until the situation was under control.

In conclusion, I encourage all drivers to be vigilant and offer help when needed. It is important to remember that our police officers are working hard to keep us safe, and any assistance we can offer will be greatly appreciated.

Yours truly,

David Edwards
Phones, many telephone companies have initiated campaigns to discourage the use of fictitious numbers. When you are calling a long-distance number, you will usually be prompted to state your business name or other identifying information. If you know of or discover any numbers as such, please send them to Telephone Electronics Line. When we have a list of these numbers, we will publish them in TELEP.

Another method takes advantage of a lack of communication between the operators. It is used only for the completion of free overseas calls, and its workability is not common to all telephone systems. The procedure is as follows: Go to a pay telephone and dial the operator. When she answers, tell her you wish to place a call to information in Britain. She will then key the number of the overseas operator located in the United States who is responsible for handling all overseas calls. Your operator will then tell the overseas operator that you are calling from a pay telephone and leave the line. You tell the overseas operator that you wish to speak with information in London. She will dial the number and leave the line. When she leaves the line, the pay telephone will ring indefinitely without an answer. In other words, the number is probably different. If you find any numbers that are frequently dialed, you might proceed as follows. An individual on vacation in Oregon might proceed as follows. An individual on vacation in Oregon.

On many pay-phones you will find a notice on the emergency information card indicating that it is illegal to bill calls to numbers you are not authorized to use. It is possible to pre-arrange with the long-distance company to call, and bill them at a specific pay telephone at a specific time. You then call that pay-phone from the pay telephone and bill it to a third party number. The operator will attempt to verify the third parties acceptance of the call by calling the number and asking the person to call back. Make sure the number you give is a valid one, and that it is available when you need it. The person or business you are calling from a pay telephone and leave the line. You tell the overseas operator that you wish to speak with information in London. She will dial the number and leave the line. When she leaves the line, the pay telephone will ring indefinitely without an answer. In other words, the number is probably different. If you find any numbers that are frequently dialed, you might proceed as follows. An individual on vacation in Oregon might proceed as follows. An individual on vacation in Oregon.

Next month:

Current News Items
Illustrations
Projects
Games

Construction Plans
Code Numbers
History
Comics

Stories
Facts

Phone booth special

You can try it too!

Try calling a long-distance number (such as directory assistance in another city) and whistling off, clearing the trunk. At precisely midnight (when everyone is calling everyone else) on New Year's Eve, someone's bound to jam into the trunk you're on. This will happen when you maintain a constant 2600 Hz on the trunk. When another person's trunk is on, you can have a call when you release the 2600 Hz.
Call Santa this year and wish him the best!

Yes, it's that time of year again when wee little ones and grown-ups alike prepare their Christmas gift-lists for St. Nicholas. Every December millions of people across the globe compose elaborate lists of toys, bicycles, games, all kinds of presents and everything else imaginable for friends and relatives.

Unfortunately however, most of these goodies will never be delivered (let alone reach Mr. Nicholas) due to the heavy holiday mail. During the last week of November and all through December the postal kings urge mail order houses and large companies to hold back on their mailings. Meanwhile, everyone else is mailing thousands of Christmas cards to everyone they can think off reminding them to have a Merry Christmas. And yet, have you ever thought of getting Santa a call on the telephone? Sound absurd? Try it!

A few weeks ago, someone suggested to phone Santa Claus as a joke. I bet the operator thought it was some joke when she held my line after trying to get her to place a call to the North Pole. After convincing her supervisor that I was for real, and indeed wanted to speak with Santa Claus, she transferred the call to her manager. Quickly, the manager and I became friends when she learned all I was trying to do was to get my Christmas orders in early (or the dogs, She continued From page 4

Could it be that the Bell System, with all those elaborate libraries of cross-references did not have a listing for an area code for the North Pole? So I was determined to speak with that fat jolly guy up there. I called directory assistance in Fairbanks thinking if I were to ask anybody, it may as well be an Eskimo. The operator repeated, "Directory assistance for what city?" I responded, "North Pole, please." Already I had the chills. She connected me to another operator and I told her this new one that I wanted the number of Mr. Santa Claus.

I was still determined to speak with that fat jolly guy up there. So I called directory assistance in Fairbanks thinking if I were to ask anybody, it may as well be an Eskimo. The operator repeated, "Directory assistance for what city?" I responded, "North Pole, please." Already I had the chills. She connected me to another operator and I told her this new one that I wanted the number of Mr. Santa Claus.

Well, it turns out that I never did get to speak with Santa, but I did have a chance to speak with his servant. I was told that Santa could be reached in the second week of December and between seven and nine o'clock would be the best time to call. I presume that would be 7 & 9 their time and in the evening accordingly.

Feeling that I had at least accomplished something (whether only to speak with his servant), I called the supervising manager back and had no trouble reminding her whom I was. I told her to write in her book (the area code for the North Pole) should there be any future requests to speak with St. Nicholas. Wishing each other a Merry Christmas, I hung up and finished my Thanksgiving dinner. So much for calling Santa right now.

important
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continued from page 4

area code state loop endings

415 CA 0044-0045
416 ONTARIO 1186-1187
503 OR 1300-1301
514 QUEBEC 1194-1195
515 IA 0005-0006
809 NJ 9929-9930
817 MA 9907-9908
903 9933-9934
702 NY 0044-0045
714 CA 1118-1119
716 CO 9911-9912
717 PA 0011-0028
914 NY 9905-9900
918 OK 9934-9935
919 OH 9978-9979
918 9932-9933

sometimes it is possible to find the sequence or style of test number your office favors by getting a tour of the Tel. Co. facilities, and keeping your eyes open inside the central office. Try dialing variations of those Tel. Co. test numbers and between seven and nine o'clock would be the best time to call. This will happen when the line is answered and the operator at the other office does not hear anyone talking. If you are lucky, you will get dial tone. If you are not, you will get touch-tone, and you need only dial a desired number for it to go through. The bill is sent to the business with the call.

Finally we come to call diverters. Call diverters are usually set up by big businesses which have offices in more than one city. If you are calling the office of one city which is closed, the diverter will dial the number of the other office on a separate outgoing line and connect you to it. Many of these diverters are quite reliable. For instance, when you call and it diverts to another office which answers, you need to wait on the line for the outgoing line to reset to dial tone. This will happen when the line is answered and the operator at the other office does not hear you and hangs up. Fifteen seconds (in most cases) later, you will get dial tone. If you are lucky, that line will respond to Touch-Tone, and you need only dial a desired number for it to go through. The bill is sent to the business with the call.

To find such numbers, try asking directory assistance in your area for listings of resorts or large corporations which have main offices you know to be near by, but still long distance, such as DuPont Freon or a resort in Las Vegas for L.A. residents. Please send into TEL any numbers of this nature that you know or discover. Thank You.

By Jack Kranyak
Our extremely well-trained technicians are always safe and careful in solving central office problems.

Our operators are experienced at their jobs to avoid foul-ups and provide the customer with fast, efficient service.

Our business office personnel keep neat and accurate records of bills and service and are alert to quickly solve your problems.

In addition... they are always pleasant and try to smile at all times.

Plus... they are courteous and patient even when problems are complex or annoying.

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Start off the New Year with a subscription to TEL.

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Telephone Electronics Line will accept payments by check, money order, postage, cash, domestic or foreign. Due to size of circulation at this time, full payment must accompany subscription order which is refundable if not fully satisfied. Make all documents payable to TEL for $3.00.

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ZIP CODE ______ TELEPHONE (not necessary) ________

December 1974