

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.



Published Monthly

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Editorial

By Jack Kranyak

Educator Mary Harris had her students harass homebodies on the telephone, as if Peter Piper picked a peck of peoples 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.

Pestared 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 test 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 imperfect 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 have 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 Morris-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—like the small child who blames 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 inquires, 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" or "Mute" as it is known. This easily constructed device allows anyone to receive telephone calls free at no cost to the caller. All newsstand copies of this issue were withdrawn at the request of the American Telephone and Telegraph Company, and it has, as a result, developed into something of a collector's item. The publication actually violates section 502.7 of the California State Penal Code, the state in which the magazine publishers are located.

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 implements. 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, oftentimes 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 their expense. The codes follow a pattern which consists of the following elements: the 7-digit telephone number of the credit card holder + a letter code which consists of any letter of the alphabet selected 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. When 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.

This use of the loop around test circuit barely approaches their full potential. Some loop arounds are set up in such a manner that calling either side (each of the two numbers for the loop around will be referred to as a "side" of the loop) does 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 not well known, 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 to him. He knows then to call a local loop around number because you have pre-arranged 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. With the other, call the operator and place your call to the long distance number you desire. Bill the charges of this call to a third party—one 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 to 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", "0", 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.

| AREA CODE | STATE | LOOP ENDINGS |
|-----------|-------|--------------|
| 201 | NJ | 9929-9930 |
| 213 | CA | 1118-1119 |
| 215 | PA | 0094-0095 |
| 303 | CO | 0009-0068 |
| 312 | IL | 9930-9931 |
| 313 | MI | 9996-9997 |
| 412 | PA | 0092-0093 |

Continued on page 14

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. These commissions establish rules called tariffs, which serve as guidelines for fixing rates and services. All equipment rented by telephone companies such as answering machines, business key systems, etc., have a tariff associated with them.

In most cases, the connection of customer-owned equipment directly to 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 blunders 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 can make your own duplicates of the Tel. Co. connecting arrangements, however, these are designated as "customer-owned equipment" by tariffs and cannot be hard-wired 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 phone 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 telephones 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 possibly) the detection of the telephone when in the "on-hook" condition.

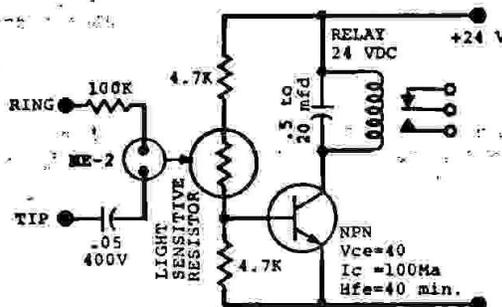
In the Bay Area (415 NPA) a recent effort has been made by Bell System authorities to counteract the extreme number of illegitimate extension telephones hooked up by customers. Most of these customers have avoided detection by disconnecting the ringers in these extensions. A new process developed by Bell involves the measurement and recording of the impedance of everyone's 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 dif-

ference 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.

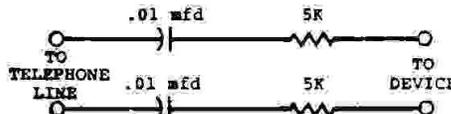
In the case of attachments such as automatic answering devices or call forwarding units, your best bet is not to give Tel. Co. any reason to check your line. In many Bell System offices, automatic trouble recording equipment monitors the status of much of the central office. If your particular device 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 wire additional extensions which ring. It is undetectable by the local switchman, due to its extremely high impedance. The parts are easily acquirable 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.



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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JACK KRANYAK

Executive Publishing Director

DAVID REES

Technical Director,
Communications Consultant

DAVID AUTOVON

DONALD SIMMONES

ROBERT KLIEN

JOHN REYNOLDS

TEL Staff Writers

Editorial and main offices at:

22035 Burbank Blvd., Woodland Hills, CA 91364
(213) 884-1129

Technical research library in Los Angeles at:
1817 North Vista Street, Los Angeles, CA 90046
(213) 851-2114

How to handle obscene telephone company employees

By Donald Simmons

I have often found business office representatives are less than helpful in executing their duties. For instance, it was a complete chore to have different types of connecting arrangements such as a QKT Audio Coupler ordered for my telephone line. Some representatives didn't seem to know what I was talking about (lack of education in their field) while others seemed deliberately bent on causing problems for me. Once, I was told by a service representative that I could not have a single plug-and-jack arrangement. When I demanded to know the section, number, and page of the tariff which states this, he told me to hold on, appearing 15 minutes later to tell me that I could have the arrangement after all. Remember, if a telephone company representative tells you that you cannot do something, demand to know what tariff section stipulates it. Thus, you can verify it yourself by looking it up in the tariffs which must be made available for public inspection by your telephone company.

Many people express the fear that the telephone company "taps" or monitors their telephone conversations. For the most part, these fears are groundless, based mostly on plenty of telephone line static and an overactive imagination. If you really believe that you may be monitored, stop and ask yourself "What reason would the Tel. Co. have to monitor me which would be worth their time and trouble?" In most cases, no good reasons exist. It is true, however, that such illegal taps do occur and to a limited extent. I know of a number of cases of monitoring by Tel. Co. employees that were authorized neither by the courts nor by Tel. Co., one of which I was directly involved in.

In my case, I was speaking with a friend on a MMU call, when the line suddenly became disrupted. My side-tone balance was distorted and line loss increased considerably. Suddenly, I heard dial tone on the line, yet I was still connected with my party. Without hanging up the phone, I used my other line to dial a test number known to be associated with the test board in my central office to check if my switchman was causing the trouble deliberately. My suspicions were confirmed when I was abruptly connected to my other line and could hear my friend speaking through test board.

When called the switchman by dialing the switchboard number, the switchman admitted to monitoring my line, saying he had a court order (this was not so) and accused me of being a phone phreak. He called me a few choice things which I shall not write here and threatened to come to my house and "do something about it personally".

I filed a formal complaint with the California State Public Utilities Commission which investigated the matter thoroughly. When they pressed for answers, the Pacific Telephone Company admitted that my line had been illegally monitored, but said that it was done by a switchman without their knowledge. Little more was done after this, however, had I wished to press charges, the Tel. Co.'s admission of the crime would have been as good as gold in gaining a conviction.

Another case involved a friend who works for Pacific Telephone. He said that the technicians in his office often ran connections from people's lines to a loudspeaker and listened in for entertainment. Though monitoring lines for repair purposes is legal, this practice hardly strikes me as a part of maintenance.

If you have any legitimate grievances with the phone company, your best bet is the Public Utilities Commission in your state. Really, they're there to protect your interests and can (at times) be very hard on the telephone company on behalf of telephone subscribers. *

What you can get for the price of a dime (which is refundable)

By David Rees

Due to the recent increase in pay phone vandalism, both Bell System and independent telephone companies have been attempting to build a better pay telephone, one which refuses to be broken into or ripped off. Some of the newer pay telephones are truly marvels of armor-plated engineering with little opportunity to acquire the coinage held within its strong box.

Even with all those anti-vandalism features pay telephones are still vulnerable to attack. There are a larger multitude of tricks which may be employed to acquire the pay telephone's service without depositing any money. For the most part, these methods require no external devices of your own, but merely the use of your hands and mouth (and sneaky brain).

Letters from the reader

Gentlemen;

I just received my first issue of TEL (Nov.) and it is with regret that I express great disappointment with the utility of its contents. The main article, concerning TSPS systems, is a reasonable explanation of the system logic involved in TSPS but I ask you, WHERE IS THE ELECTRONICS?

Frankly I resent paying for "SECRETS OF YOUR TELEPHONE" and "FACTS NEVER BEFORE PUBLISHED FOR THE PUBLIC" when I am getting little more than PR handouts and frankly unimaginative cartoons. As you folks are also merchandising numerous devices designed to be interconnected with telephone lines, how about information on how Ma Bell detects foreign devices on her lines? Southwestern Bell in Tulsa is rapidly going ESS, and also has one of the most tamper-proof systems extant for detection of the state of the customers' telephone. While many east coast Bell systems use a simple DC current flow sensing system to detect an answered phone or lifted handset, the Tulsa system utilizes both AC and DC sensing, with low level AC detection signals covering the frequency range needed for speech. Or at least so it appears. This is an extremely sophisticated system, and indicates the extent that Bell will go to toward the simple-minded "black box" devices which many people use to try to avoid LD billing. These

devices simply do not work in Tulsa. There is no system which cannot be gotten around, however, and Bell has just made the getting around a bit more complex.

Another simple but not always effective method involves not saying anything to the operator. When placing a message unit call on a telephone system which allows direct paying when a coin collect operator comes on the line. Sometimes she will unwittingly allow the call to go through by overlooking a special dumping key, however, your success

continued on page 8, col. 1.

A suggestion: How about an issue devoted to the operation of the equipment that a customer generally has access to; IE the standard telephone, how it works (DETAILS PLEASE) and how it interrelates with the Company's other electronics. One should cover both the standard dial and "Touchtone" phones, preferably giving actual parts values (IE coil impedances, cap values, etc.) and what relationships these values have to the function of the system. Improvements to the home phone should be described, such as the circuit included for adapting a standard telephone handset to use a dynamic microphone for improved clarity and dynamic range.

K. K., Tulsa, OK

Dear K.K.,
Sounds like a good idea. TEL will be publishing some circuits and methods which allow the telephone customer to "do" rather than "observe". We appreciate your interests and suggestions. In the next issue, there will be a large reader response column which will include the many ideas that you will be most definitely interested in.

THE AUTOMATIC WIRETAP are your telephone conversations really private?

By David Autovon

Most of us have at one time or another become impatient with a constant busy signal and made an "emergency call" to the party we desire to reach. This type of call is made through the operator only. The operator interrupts the conversation by connecting to the telephone line desired and requesting they release the line. Simple as it sounds, this action requires the operation of an entire switching system, and trunking and operator network designed specifically for emergency calls. It is called the verification system.

On most standard operator cord switchboards, a set of jacks is set aside for emergency calls. These jacks represent the terminations of "no-test" or "verification" trunks. Each operator may use these trunks for emergency calls within her office or exchange. To interrupt a given call, the operator must plug into the appropriate no-test trunk and key the telephone number of the desired party on her multifrequency keyset, preceded by KP (key pulse) and followed by ST (start). She is then connected into the conversation by central office equipment. After which she may inform the party of the emergency call.

If you are placing an emergency call to a party in another office or exchange outside the area handled by your operator, she must contact another operator to place the emergency call. The operators whose specific job it is to place emergency calls are called verification operators. They are usually reached by dialing a standard 7-digit telephone number which is known only to operators and other authorized personnel.

Each "0" operator is supplied with the telephone numbers of the verification offices she may have to place calls to. In Los Angeles, some examples of verification office numbers are 870-1111 for Culver City and 828-1111 for East Los Angeles. Note that the suffix "1111" is used for each number. This is the case for all 213 area code verification offices. The purpose of this is obvious. "1111" is much more rapidly pulsed by automatic equipment than any other digit combinations. Should you wish to experiment to determine the verification number suffix for your area, try starting with "1111". When the verification operator answers

continued on page 8, col. 1.

Debugging The Buggers

By Robert Klien

In a recent article, Telephone-Electronics-Line made a noble attempt to explain the basics of TSPS (Traffic Service Position System). Now, we will explore some of the lesser known phenomenon of TSPS. Specifically, we will deal with the use of verification trunking as related to TSPS.

Did you ever consider how verification is handled for in-office TSPS lines? Since there are no verification trunks that are associated or terminated directly on a TSPS type console, the TSPS operator must depend on special routing codes to perform a verification check for an "OD Condition", Out-Of-Order Condition resulting from an ROH (Receiver Left Off Hook), a CPH (Called Party Hold), or simple emergency announcement on a line in use.

THE SCRAMBLER

This special circuit, dubbed "The Garbler" or "Garb" by Pacific Telephone people, has many options and special features. As a working example, we refer to the 415 NPA (Number Plan Area), where "Garb" is now in use. When the customer requests an OD check, the TSPS operator accesses a free loop (by depressing the "ACS" key on her console) and keys "021-7D" - 7D being the 7-digit number to be tested. When the ST key is pressed, the Garb unit is activated, causing a special trunk to be opened to the central office in which the requested phone number is located. After the 7-digit number is keyed, the special scrambler equipment selects the line called for through a no-test circuit and connects. If the line is not in use, a reorder (120 lps) busy signal is received to indicate this condition. If the line is in use (as a result of an OD condition, verification, etc.), the operator will hear a steady tone (dial tone), silence, or garbled voice-range frequencies to indicate a conversation in progress. Depending on the result of the OD test, the customer will be informed either that the line requested is OD or in use.

ACTUAL VOICE VERIFICATION

If, when informed that the line is in use, the customer desires an urgent or emergency line verification, the operator follows this procedure: She re-dials through the Garb circuit, and when voice-type frequencies are received, depresses her forward-ring key. This causes the Garb equipment to drop the voice-scrambler circuit (provided on a one-way talk arrangement) and connect directly through the no-test trunk to the requested line, causing a two-way link between the requested phone line and the operator. As a security precaution, a click is produced on the line in question when it is being tested for OD, and a louder click accompanied with a marked decrease in trunk transmission qualities is produced when it is actually verified. The TSPS operator now announces the verification, and normal verification procedures are followed. When the operator releases the Garb trunk, the verified line is restored to normal operating condition, and the trunk is accordingly released from the TSPS board.

As a note on toll; when this type of verification is used, the toll operator follows the same procedure except:

A - The 3-digit access code may be different.
B - The yellow ring key may be depressed for a two-way verification circuit.

Already, this system, which is called the Garb system, is now in widespread use in places such as 314, 415, and 213. Perhaps one of the main reasons for establishing this system was to tighten security of telephone lines. 7-digit customer dialable verification numbers that ring into verification operators are simple to use for illegal purposes, whereas you must have specialized equipment, a particular group of trunks or tandem circuits, and a specific knowledge of the access codes and special requirements of the system you are accessing to effectively use the Garb system. If you know of such information, and can add to it, then please drop us a line. Any suggestions and/or corrections would be greatly appreciated. When writing, please refer to the name of the article which you are questioning or commenting on, the Volume and Issue No. or date of publication. *

dime continued from page 7

is based on her experience and familiarity with the equipment and how busy or distracted she is at the time of your call.

Many telephone companies have had trouble with subscribers who place collect calls to pay telephones. This method of avoiding charges works only if the operator is under the impression that the pay-phone number she is calling is a subscriber type telephone. An example of such a scheme might proceed as follows. An individual on vacation in Oregon wishes to speak to a friend in Los Angeles without paying the toll charge. By placing his call person-to-person collect to his own name when calling the L. A. number, he can signal the party there that he wishes to receive a call-back. The called party, by stating that the desired party is not at home and that he will return the call when he gets back, he can usually acquire the pay-phone number from the operator. The L. A. party may then make a collect call back to the pay-phone, and the Oregon vacationer will accept charges without having to insert money into the coin slot. This works most dependably when the fourth digit of the pay-phone is not a "9" (in some areas). The operator is reassured if you answer with a business name such as "Smith Plumbing Supplies" or "Western Air Lines, Information Desk". Any phrase such as these will do, however, be certain that it does not imply a pay telephone in any way. Due to a recent increase in the number of collect calls to pay-phones, many telephone companies have initiated campaigns to remove the bells from their pay telephones.

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 whose job is to handle 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, flash the hookswitch (hang up for about a second). You should then be re-ringing into the overseas operator. When she again answers (it will usually be a different operator), she will not know that you are calling from a pay-phone or what the number is. Tell her the overseas number you wish to speak with, and a fictitious number from which you are supposedly speaking. She will then complete the call, billing it to the number you gave her. Make sure the person or business you are calling has no record of you or your call.

Next month:

| | | |
|--------------------|--------------------|---------|
| Current News Items | Construction Plans | |
| Illustrations | Code Numbers | |
| Projects | History | Stories |
| Games | Comics | 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 seizes yours, he will be charged for the call when you release the 2600 Hz.

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 party you wish to call, to call them at a specific pay telephone at a specific time. You then call that pay-phone from a pay-phone 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 to ask the party. Make sure the number you give her is a test number which either rings indefinitely or is constantly busy. In the 213 area code numbers with the suffix (last 4 digits) "0699" are usually busy, while numbers with the suffix "0299" ring indefinitely without an answer. In other areas the numbers are probably different. 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 across the country, we will publish them in TEL.*

wiretap continued from page 7

she will say "verify". A good strategy for finding these numbers is to listen carefully when the operator places a call to one. In most cases the automatic equipment replaces the number, producing distinct clicks for each digit. By counting these clicks, the number can be determined and then tested by dialing. Those of you who find these numbers or have any information concerning their operation in your area please send them to Telephone-Electronics-Line. Eventually, we hope to publish a fairly complete list of verification numbers all across the country.

The verification network is by no means secure or tamper-proof. The fact is that just about anyone with the right numbers to call and the correct things to say could tap into anyone's telephone line using telephone company circuits. It has happened many times, and is usually practiced by the notorious "Phone Phreaks". The process they employ is described in the following.

Let us say that Joe Phone wishes to listen in on the conversation of John Smith at 555-2368. Joe dials the 7-digit number for verification in that office. The verification operator answers "verify". Joe replies, "This is Phil Donehue on the 4-A 17-C test board. We have some trunk testing to perform and require a no-test trunk for the 555 office". Depending on the air of authenticity of the caller and the gullibility of the verification operator, she may extend the cord to the trunk requested or question further. If Joe's telephone knowledge is up to par, Joe may be able to satisfy an operator at this stage, however, the smart Phone Phreak will give some excuse to hang up and try later. Once Joe has been plugged into the no-test trunk he whips out his trusty "Blue Box" and dials "KP 5-2368 ST" and is abruptly connected to Joe Smith's line.

Some Phone Phreaks whose capacity to sound authentic is above average but do not have a Blue Box to perform the necessary key pulsing manage to have the verification operator connect them to the line they wish to tap by performing the key pulsing for the would-be switchman. This is definitely not easy as the operators are necessarily careful and reluctant to act in such an unfamiliar situation. In addition, the operator must be off the line when the connection is completed, otherwise she may hear some of the conversation to be tapped and suspect foul play.

If you wish to tap lines yourself, you should know something beforehand. It is a Federal crime carrying very stiff penalties for anyone to interfere or monitor communications unless authorized to do so by the court. In some areas it holds additional penalties due to state laws forbidding it.

It is not illegal, however, to dial verification yourself in order to place your own emergency calls. This can prove to be much faster than using the operator. Simply mimic the words of the operator when you hear her placing an emergency call. One might call it "Direct Dialed Emergency Calls" *

By Jack Kranyak

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 of reminding them to have a Merry Christmas. And yet, have you ever thought of giving 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 for the tots. She apologized for her operators conduct at my attempt to get an area code to place the call originally, but was unable to find one herself.

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? In vain, I wished this lovely lady a Merry Christmas and hung up.

I was still determined to speak with that fat jolly guy up there. So I whistled up 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 this new one that I wanted the number of a 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 "907" (the area code for the North Pole) about 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.

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continued from page 4

| AREA CODE | STATE | LOOP ENDINGS |
|-----------|---------|-------------------------------------|
| 415 | CA | 0044-0045 |
| 416 | ONTARIO | 1188-1187 |
| 503 | OR | 1000-1001 |
| 514 | QUEBEC | 1194-1195 |
| 515 | IA | 0005-0006 |
| 609 | NJ | 9929-9930 |
| 617 | MA | 9907-9908 9933-9934 |
| 702 | NV | 0044-0045 |
| 714 | CA | 1118-1119 |
| 718 | NY | 9911-9912 |
| 717 | PA | 0091-0092 |
| 914 | NY | 9905-9900 9934-9935 9978-9979 |
| 918 | OK | 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 you may already know. You will know the loop number by the following characteristics. Every loop has:

A - One side enters into a 1000 cycle tone

B - When the other side is called, the 1000 cycle tone on the first side stops and the two are connected.

Good Luck!

We now come to tie lines. Tie lines are long distance trunks (circuits) which are rented by the Tel. Co. to large corporations (they are so expensive that only big corporations can afford them). They may extend across the city or across the country. Essentially, they allow a corporation in New York or instance, to have a Los Angeles telephone number. Thus, when a Los Angeles party calls the L. A. tie line number the call is answered in New York. Usually, the person who answers is a switchboard operator who will connect the caller to any number in the city where she is located. This she will do because the number is supposedly known only to authorized personnel. The only sure way to get these numbers is to

know someone who works at a corporation with such lines, such as Ticketron or American Airlines.

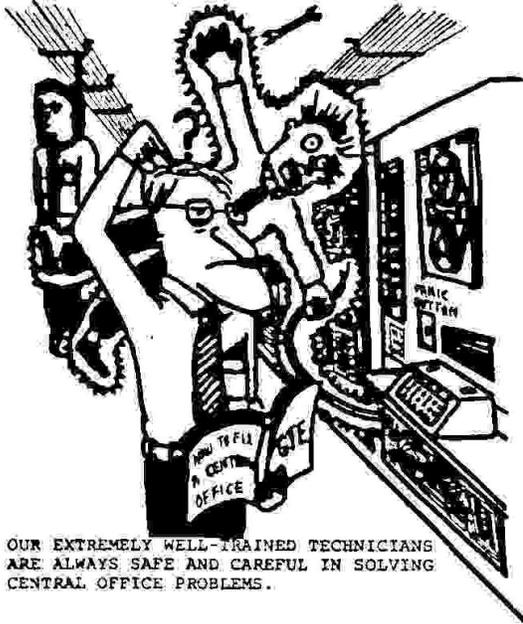
Or you could try the ingenious ploy used by a group of college students in Chicago. It seems they took the whole Chicago phone book and fed it into a computer. Then they had the computer print out all the numbers that were not listed in the phone book. They divided these numbers among themselves and started dialing them one by one to see what they reached. Eventually, they eliminated all those numbers that were disconnected, out of order, or simply unlisted residence lines. However, in those numbers they discovered every sector tie-line number belonging to corporations in Chicago. Thusly equipped, they compiled a little black book which contained all confirmed tie-line numbers which allowed each of them to call just about any city of moderate size in the U.S. at corporate expense. I am sorry to say they were caught, though I wish I had one of their number lists.

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 in the other city on a separate outgoing line and connect you to it. Many of these diverters are quite vulnerable. 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 diverter, however, these lines are usually WATS lines (Wide Area Telephone Service) and the business is not made to pay for your call.

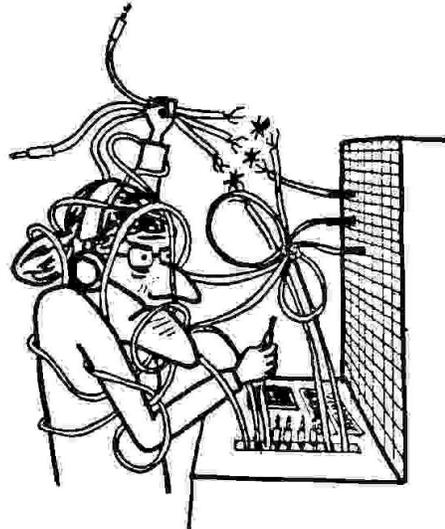
To find such numbers, try asking directory assistance in your area for listings of resorts or large corporations with main offices you know to be nearby, but still long distance, such as DuPont Freon or a resort in Las Vegas for L.A. residents. Please send into TEL any numbers of this nature that you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



Pathetic Telephone



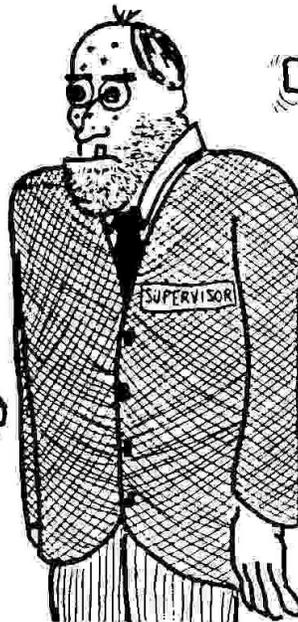
OUR EXTREMELY WELL-TRAINED TECHNICIANS ARE ALWAYS SAFE AND CAREFUL IN SOLVING CENTRAL OFFICE PROBLEMS.



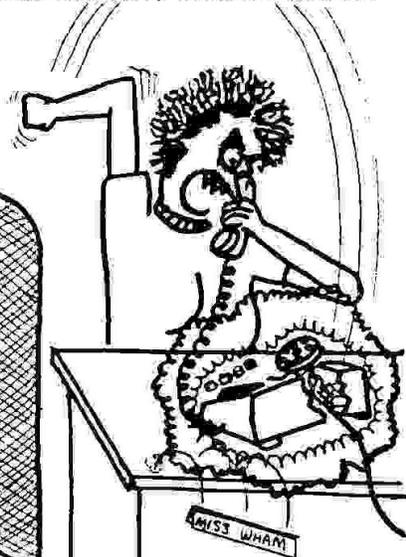
OUR OPERATORS ARE EXPERIENCED AT THEIR JOBS TO AVOID FOUL-UPS AND PROVIDE THE CUSTOMER WITH FAST, EFFICIENT SERVICE.



OUR BUSINESS OFFICE PERSONEL 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.

David Rose

member of the **SMELL SYSTEM**

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