



Death of a Pay Phone

(Yes, this is an article on how to really foul up a pay phone. We want to make it clear that we disapprove of people manhandling helpless electronic beings. But we also felt this article would be of interest to those curious about how the devices work. We don't actually know if this information will work, but we'll leave that for you to decide. We hope this can also be useful to our friends in various intelligence agencies, who may want to include it in pamphlets on how to mess up various countries we're not getting along with at the moment. You have our permission, guys.)

by MAD!

The following article is for AT&T and GTE payphones from 1982-1985. Some things are different on GTE phones, so additions are included for them.

The Coin Slot

For every coin you put in a phone, a series of tones are made. After you put the coins in the slot, they pass through a totalizer which counts them, and then deposits them in a hopper. To empty out the hopper, all you have to do is activate the coin relay. Payphones sometimes hold \$100 or more. To activate the relay, place a nickel in the phone. Stick a magnet up the coin slot about five inches. Now remove the front panel of the phone. You will see a series of wires. Cut the red and green ones. Now in the front of the panel you will see three screws. Touch

the green wire to the third screw and have a hat ready, because a lot of change is going to come flooding out. Isn't this fun?

Free Credits

If you have long distance friends, then this part you'll enjoy. One of the cheap things about pay phones is that they depend on in-band signaling to indicate what coins you have inserted. The operator can tell whether or not you have actually inserted any money, but now how much. After you insert the initial coin, you can duplicate the tones for the rest of the charge with a red box. We want to show you how to do it without the use of a box. For this you will need a set of screwdrivers, both philips and flathead.

Open the front panel of the phone and cut the red and green wires. Take the cover off the top of the phone and insert a nickel. You should hear nothing. Find a green wire coming from the coin slot down to the hopper. Disconnect that wire. Now take off the case and you will see a small switch. Move the switch. This sets the totalizer backwards by one. Now put the hopper cover back on and reconnect the wire. Go back to the front panel. Feel to the right of the two screws. You should feel four jumpers. One of the jumpers should be disconnected. Reconnect it. Now cut the top jumper. You should hear a loud pop. Next, touch the green wire to the second screw. You will
(continued on page 3-74)

TRASHING: AMERICA'S SOURCE FOR INFORMATION

by The Dragyn

The Phone Company will go to extremes on occasion. In fact, unless you really know what to expect from them, they will surprise the heck out of you with their "unpublished tariffs." Recently, a situation was brought to my attention that up till then I had been totally unaware of, least to mention, had any concern about. It involved garbage! The Phone Company will go as far as to prosecute anyone who rummages through their garbage and helps himself to some.

Of course, they have their reasons for this, and no doubt benefit from such action. But, why should they be so picky about garbage? The answer soon became clear to me: those huge metal bins are filled up with more than waste, old food, and refuse. Although it is Pacific Telephone policy to recycle paper waste products, sometimes employees do overlook this sacred operation when sorting the garbage. Thus top-secret confidential Phone Company records go to the garbage bins instead of the paper shredders. Since it is constantly being updated with "company memorandums", and supplied with extensive reference material, the Phone Company must continually dispose of the outdated materials. Some phone companies are supplied each year with the complete "System Practices" guide. This publication is an over-40-foot-long library of reference material about everything to do with telephones. As the new edition arrives each year, the old version of "System Practices" must also be thrown out.

I very quickly figured out where some local phone phreaks were getting their material. They crawl into the garbage bins and remove selected items that are of particular interest to them and their fellow phreaks. One phone phreak in the Los Angeles area has salvaged the complete 1972 edition of "Bell System Practices". It is so large and was out of order (the binders had

been removed) that it took him over a year to sort it out and create enough shelving for it in his garage.

Much of this "Top Secret" information is so secret that most phone companies have no idea what is in their files. They have their hands full simply replacing everything each time a change in wording requires a new revision. It seems they waste more paper than they can read!

It took quite a while for the Hollywood, California traffic manager to figure out how all of the local phone phreaks constantly discovered the switchroom test numbers. Whenever someone wanted to use the testboard, they found the local phone phreaks on the lines talking to points all over the world. It got to the point where the local garbage buffs knew more about the office operations than the employees themselves. One phreak went so far as to call and tell a switchman what his next daily assignment would be. This, however, proved to be too much. The switchman traced the call and one phone phreak was denied the tool of his trade.

In another rather humorous incident, a fellow phreak was rummaging through the trash bin when he heard someone approaching. He pressed up against the side of the bin and silently waited for the goodies to come. You can imagine his surprise when the garbage from the lunchroom landed on his head.

Most people find evenings best for checking out their local telco trash piles. The only thing necessary is a flashlight and, in the case mentioned above, possibly a raincoat. A word of warning, though, before you rush out and dive into the trash heap. It is probably illegal, but no matter where you live, you certainly won't get the local policeman to hold your flashlight for you.

Death of a Pay Phone *(continued from page 3-73)*



hear the sound of twenty-five cents being inserted. You now have 30 cents credit. Repeat as many times as you need. Then reconnect the green wire and dial your number. GTE notes: The green wire will be white; the red one will be blue; the totalizer is located at the bottom of the front panel.

How to Open a Payphone

An Atlantic Bell payphone is a heavily armored device. It is designed to withstand attempted theft and damage. As shown above, we don't need to get through all the armor to phreak it. All we need to do is get to the wiring which is all located behind three easy-to-remove panels.

All that holds the front panel on is 3 or 4 bolts. Just apply sulphuric acid and in ten minutes or less they will come right out. While you are waiting, remove the other panels. The top panel is held on by two tight nuts. A good pair of pliers will remove them. The back panel is the hardest part to tackle. It is held together by a semi-permanent solution. On the newer AT&T credit and pay phones, an alarm goes off when the back panel is removed. The circuitry for this is located in the top panel. Look for a round box with four wires protruding out of it. Cut the first and second ones. Next use the sulfuric acid, wait ten minutes and lift it right off.

How to Steal a Payphone

Ever wanted to have your own payphone? It's not very hard to steal one. As a matter of fact, it is easy to rip one out of the wall, but we want to show you how to take one home intact.

Stealing payphones is extremely dangerous, much more than phreaking. Only try this if you are very serious and/or curious. Never steal more than one from any area. They sometimes know immediately when it's gone, so get the hell out of there. The inside of it is heavily armored. If you are taking it for the money, you will need a full set of philips and flathead screwdrivers, sulphuric acid, a crowbar, a sledgehammer, bolt cutters, and probably more. Now you can take it home and pound on it, or you can use the easy way we showed you above. A thermite reaction is useful for eating through the lock on the coin box, and for removing other parts.

The Uses of a Payphone

Okay, now you have your payphone home. What will you do with it? Well, if you want to make it work, you need to run up a five prong cable from the phone line in your basement. The outlet in the wall won't work. Drill a two inch hole at the left front of it. Remove the back panel (as described above) and disconnect the wires coming out of it. You will see them attached with silver screws. Remove them all, and make sure you know which screws each wire was attached with.

Now for some explaining. You could just wire it up with the existing wires, but then it will make tones, so we are going to rewire it. You will need ten heavy duty 7 inch wires for this part.

If you don't want it to accept money, skip this next section. Otherwise, take the 12 o'clock screw and connect it to the screw at the bottom of the totalizer. You will have to push it through, then take the top off, and connect it. Attach the 2 o'clock screw to the green wire on the silver box. Simply cut the green wire from the box and connect them together.

Okay, now this is the part that makes them work. Take the

silver box, which should be hanging loose (make sure the wires attached already won't come loose), and fasten your ten wires to the screws on the phone. Starting at the top left of the silver box, hook the wires up in a counter-clockwise fashion, starting with 3 o'clock, *excluding* 12, 2, 2:30, and 4.

Now run the cable up through the bottom, and hook it to the front of the silver box. It should now function normally.

The Telephone Lock

Rotary payphones dial by having the number roll back to its original position. It breaks the signal the number of times equal to the dialed number. You can achieve the same effect by tapping rapidly on the on-off toggle switch at the top of the phone (the one you use to hang up with).

Let's say you wanted to call 123-4567. You would tap on the number once, pause half a second, tap rapidly twice, pause, tap three times fast, pause, and so on. It takes a little practice to get the numbers right, but it does work. So much for locked telephones.

Payphones Off Hook

Everyone knows the old trick where you would call someone on a payphone, then walk away and it would stay off the hook until someone hung it up, or a Ma Bell repair crew came along and took care of it. Well, that doesn't work anymore. The current payphones reset themselves within 45 minutes. Well, we were thinking, wouldn't it be nice if you could wire it so that the payphone wouldn't hang up, even if the receiver was put back on hook? What you would be doing is turning it off. Then the payphone couldn't be hung up. And while we were at it, we found out how to keep it from resetting. Here's how: Remove the top cover, and find the totalizer (see above). Now unscrew the cover of the totalizer and locate the center position where six to ten wires meet. Clip all these wires. Put both covers back on. Next, open the front panel. Find those main wires we've been using, and cut the third wire to the right.

What this does is stop the payphone from resetting, and it turns off the hang up switch. To use it, just call someone up, and follow the above notes.

Getting Your Money Back

If a payphone takes your money and won't give it back, but the money is still in the hopper, here's what you can do. Just dial a 950 number, such as 950-1044, and it will clear it out.

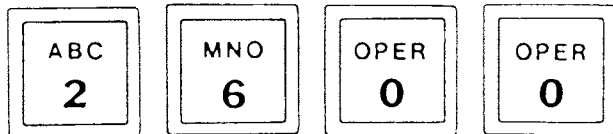
Endless Ringing

This will make a payphone ring and ring. The only way to stop it will be if a repairman comes and fixes it.

Open the front of the phone. Now in the front row of wires go and clip the first, third, and fourth. Now touch them to each other until two of them make the phone ring. Now attach the two top ends and bottom ends to each other. Take the odd wire and reconnect it. Now cut the third wire to the right. If the payphone isn't ringing right now, make sure the receiver is hung up and touch those wires again. It will now ring. Put the phone together and walk away.

Remember after every trick to put the phone back together for another day.

(This article was by MAD! members: Mr. COSMOS, The Commodore Kid, Death-Stalker, and The Gremlin.)



FBI Investigates Coffee Machine

Associated Press

The FBI is investigating, at the request of the International Brotherhood of Police Officers Local 545, the bugging of a coffee machine in Lewiston, Maine.

The police chief maintains that planting the listening device violated no law. The chief said he planted the department-owned device to find out who was vandalizing the machine.

An internal investigation concluded that no crime was committed and that the chief should not be disciplined. The Maine attorney general's office agreed on the grounds that the bug was planted in a public place.

CIS Copyrights Public Software

InfoWorld

Compuserve Information Service has threatened a bulletin board operator with legal action for offering on his board public domain programs he obtained on-line from Compuserve.

Compuserve, a common source for public domain programs, said it considers the entire contents of its service to be copyrighted, a policy that caused user outcry when it was first adopted last year.

The bulletin board operator, Steven Sande, said his troubles began when he left a message on Compuserve's MAUG (Micronetworked Apple Users Group) Forum informing other users of his Mousetrap BBS board (3037910736). The message noted that the board contained some public domain software obtained from MAUG files.

A few days later, on September 11, Sande said he received a registered letter from Compuserve's attorneys stating that he was infringing on Compuserve's copyright. The letter threatened him with civil and criminal action. Sande shut down his board temporarily and canceled his subscription to Compuserve.

Mike Todd, founder of the IBM special interest group on Compuserve, defended free access to public domain software. "That's the way it's supposed to be," he said.

Todd said he had protested Compuserve's copyright decision last year and that it was one factor that prompted him to move to The Source.

Navy Software Available

InfoWorld

The Navy has been using public domain software to save money and provide specialty software unavailable through commercial channels.

Most of this software consists of applications of commercial software such as Wordstar, Lotus 1-2-3, and Dbase III. "When it comes down to performing unique, individual functions such as tracking aviation flight patterns, the programs aren't commercially available," a computer specialist with Navy Regional Data Automation Center said.

[Readers, Navy public domain software (shareware) can be obtained from the Navy's BBS which was at 8044451627 and 8044451121. At press time the first number was out of service and the second number did not answer, but you should be able to find the new number.]

HBO Encryption Broken

Network World

Last month, the owners of a Westbury, New York store that sells backyard satellite dish antennas went on national television saying they had found a way to overcome Home Box Office's \$40,000 signal-scrambling system.

HBO's scrambling system is based on the government-sanctioned Data Encryption Standard.

The story revolves around a demonstration by Cabletech, which showed what it claimed was an inexpensive way to pirate scrambled HBO signals. The intent of the demonstration was to protest to HBO the monthly service fees HBO is now charging owners of private satellite dishes.

Now dish owners have to lease or buy signal descramblers and pay a monthly service fee just like cable-supported customers.

According to Barry Altman, co-owner of Cabletech, the store was able to unscramble HBO's video signal using \$3 worth of parts. They also contend that they intercepted and decrypted the accompanying audio channel, a process that involved less expensive parts but more work.

Cabletech said it would agree to show the manufacturer of the scrambling equipment how and what it used to beat HBO's security if the vendor agrees to recall the devices and refund the purchase price to consumers.

HBO and VideoCipher, maker of the descrambler, contend that Cabletech did indeed descramble a video signal but they merely amplified a CATV-delivered nonscrambled audio channel.

Pennant Ties Up Phones

The New York Times

Phone ticket sales for the World Series went on sale earlier this month causing havoc on New York's phone lines. Although only 6,000 tickets were made available by phone, New York Telephone had made plans to combat possible problems that would cause "terrible network congestion."

In the 516 area code alone, 16,500 calls came in to the Mets number in a five-minute period (200,000 per hour) and 1.4 million an hour for all seven exchanges advertised for fans. Delays in getting a dial-tone were also reported.

The situation prompted Stuart Denning of Springfield, New Jersey, to use two GTE 220 speaker telephones with automatic redial, programmed with Teletron numbers in seven area codes and working in tandem. He was able to purchase two tickets.

Security Can Kill Creativity

Network World

Even though too little security can leave a communications system vulnerable to tampering or destruction, a heavy security blanket can stifle creativity and productivity. A recent report, titled *Telecommunications Security*, from Input, Inc., a market research firm in Mountain View, CA, proposes a number of techniques that build secure telecommunications systems that are not prisons for users.

An overzealous or overdesigned security system can create prisons of the mind, the report warns. Constraining programmers or communications technicians with excessive security restrictions can backfire because it may negate the very factor that makes their contributions cost-effective; that is, their creativity.

Hackers are not the primary threat to communications systems, according to the report. Hackers usually break in for intellectual challenge, not for malicious reasons.

A security system is effective, "if the cost to a perpetrator is greater than potential gain."

[To illustrate that last point, the report is available for \$750.]

Indiana "Fones" Are Gone

Various Combined News Sources

Indiana has been the only state to have its telephone company listed in the white pages as under "Fone Company". Company officials have announced that the spelling will not appear in next year's directory.

Al Bolin, spokesman for Bell in Indianapolis, said the company has been listing Indiana Bell under "fone" for several years now but has started getting complaints.

"Some people feel it's a putdown," Bolin said. "But that was not the reason we did it. There's no allegation or implication that people are so dumb they don't know how to spell 'phone.'"

"It's a phonetic [sic] spelling, obviously," Bolin said. "Basically, we're trying to make it easy for people to get in touch with us."

The phone company is also listed under several listings, including Indiana Bell, phone, telephone, and fone.

october letter department

Dear 2600:

Your magazine has been an invaluable aid to me for information in the past and I'm hoping that you can come through for me once again. I have finally broken away from my days of boxing and computer hacking and started can-jumping. My lineperson's handset (which a careless employee "left behind"), hat, and bolt cutters have proved to be enough until now. I recently opened a MC² box and found some tools which I believe are test sets. The first is a spring loaded clip of sorts with a black and a red lead coming off and is marked as a 3M product #4047. The other tool is a longer device with a metal probe at the end; it is marked as #4055 and looks like it could almost be a key of some kind. What are these things and how do I use them? Once again, thanks for a great publication.

Psycho, Calif.

P.S. One last little note. The operators at Sprint are more than happy to tell you what your local dial-up is if you just tell them that you lost your little book and that the equal access # is not working. The number is 8005214949.

Dear 2600:

I really enjoy your magazine and have learned a lot from it. I want to contribute some information which might be useful to the teeming millions of phreakers who demand to know more. While in school I discovered that one of the long-distance services located in the 607 area code, located in the southern tier of New York, and not far from Big Blue, is very easy to generate numbers off of. The company is called ACC, Alternative Communications Corporation, who use an 800 service for their long distance numbers. They watch carefully, but when you call from one pay phone to another pay phone, then you can beat the rap. I think that the reason the people were caught was because they used their hacked numbers unwisely.

I also discovered a system which is connected to ARPANet network. The number for this college computer is 607772802 and 607774731, and it is on-line 24 hours a day. This system is host to three IBM and two VAX systems. I do not know how to get into the ARPANet system but this feat can be done.

I have a question. An orchestra A is 440 vibrations per minute. Could a tone generator/blue box be configured from a good synthesizer?

Yours sincerely

Wolfgang Amadeus Mozart

Dear Wolfgang:

A good synthesizer can certainly do that (see data page).

Dear 2600:

On Tuesday, August 12, I received a phone call from a Missouri Telephone Company. When they called, they already knew my name (the phone number is my father's). It was a lady that called. She said that she has talked to several people and they said that I had given them a number from which they made free phone calls. I denied everything. I have this number and codes for it which I found by trial and error but I never made any calls through it. However, I did give it to a friend, but no codes. The lady asked me if I owned a computer with a modem. I said no. She said that they have been "monitoring" my lines for a long time and knew I was calling this number. I denied it claiming I knew nothing of it. She asked many more questions. The friend that I gave the number to said a while ago that "The number had changed from an extender to a human" so I didn't call it again and thought nothing of it till I got this call. The friend claimed that they caught her while she was making the call and told her not to hang up but tell them her name, address,

and phone number, so she did!!!! They are sending her a bill. She said she did not tell them my name but I don't believe her. They were calling the people. She called to try and find out her name. They just called today and have not called back yet but said if they do I can expect severe consequences.

What should I do?

Crazy Eight.

P.S. I frequently scan the 800 number and the lady said that they also knew I was doing this.

Dear 8:

It sounds as if they are just fishing for information. They are probably trying to scare you just as they scared your friend into divulging her name and address. Since you say you did not abuse this extender, there should be no proof that you did (i.e. your friends and loved ones' phone numbers appearing on someone else's bill at the same time that you called their 800 number). If you don't call this number from your home, you should not have to worry about this problem reappearing.

Fellow Phreakers:

Earlier this year, on a recent voyage to Puerto Rico, I discovered two very interesting things which warrant closer examination by the phreaking community. First, aboard the airplane, was a cellular phone called a Sky Telephone. It worked by inserting a credit card into the holder, then taking the headset to your seat where you would talk on the phone while in flight. The only limitation was that the plane had to be within 30 minutes of the U.S. coastline. I would like to know how this system works, and what the potential is for phreaking on one of these phones. (The flight was 3½ hours long and if I had this knowledge, I could have had a phreak festival.)

Upon arriving in Puerto Rico, I noticed that the island's phone system, run by PRT (Puerto Rican Telephone), is very primitive. The island has very limited access to 800 service, and in order to call the operator you have to dial 123. The only thing they have going for them is that a phone call still costs only a dime. It seems that the computer revolution did not hit the island yet.

Long distance is maintained exclusively by ITT, but with the termination of ITT, the long distance lines will be run by someone else. There will probably be some problems created by the shift in ownership. This would be an interesting "vacation" spot for phreaking.

**Keep on phreaking
Long Distance Voyager**

Dear LDV,

Thanks for the information. The main point of your letter (as far as we can determine) is that when you are on vacation anywhere you should play with the phones and see what bugs you can find. Plus, this may allow you to call your loved ones back at home inexpensively.

Dear 2600:

Found another 800 number that spells something nice.

It's 1-800-BAD-DEAL.

It's a modem that hooks you into Smith & Wesson VAX computer.

Try it.

**Yours Truly
Wize owl
Bartender
Dead goat saloon
Hilo, Hawaii**

(continued on page 3-80)

The 2600 Information Bureau

011-44-1-2468000	: Child Stories	011-44-1-2468060	: Racing
011-44-1-2468008	: Album Line	011-44-1-2468070	: Comedy
011-44-1-2468015	: Dialing Instructions	011-44-1-2468071	: Recipies
011-44-1-2468017	: Dialing Instructions	011-44-1-2468072	: VD info
011-44-1-2468020	: Sports	011-44-1-2468080	: Newslime
011-44-1-2468024	: BBC2 radio audio feed	011-44-1-2468088	: Civil Emerg
011-44-1-2468026	: Financial Report	011-44-1-2468090	: Weather
011-44-1-2468030	: Travel Line (Railroad)	011-44-1-2468091	: Weather
011-44-1-2468031	: Travel Line (Auto)	011-44-1-2468100	: ???
011-44-1-2468032	: Travel Line (Sea)	011-44-1-2468200	: Time
011-44-1-2468033	: Travel Line (Air)	011-44-1-2468400	: Music
011-44-1-2468035	: British Telecom Guide	011-44-1-2468500	: ???
011-44-1-2468040	: Christian Message	011-44-1-2468600	: Music
011-44-1-2468041	: Tourist info	011-44-61-2468011	: US Dial Tone
011-44-1-2468043	: Tourist info in French	011-44-203-8069	: Coventry Radio
011-44-1-2468044	: Golden Hits Line	011-44-246-8015	: Cricket Line
011-44-1-2468045	: Tourist info in German	011-44-273-8069	: ???
011-44-1-2468050	: Challenge Line	011-44-634-8069	: Kent Radio
011-44-1-2468055	: Dial A Planet	011-44-702-8900	: Essex Radio

2600

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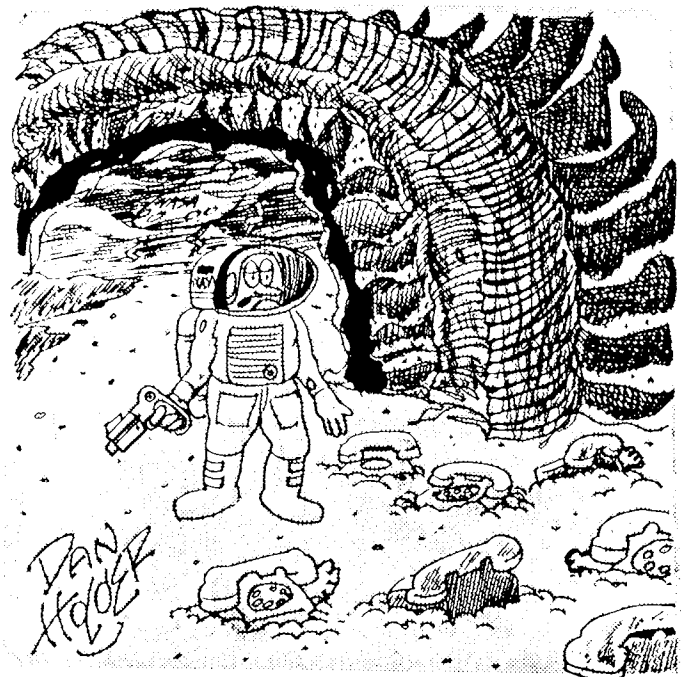
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"Yep, there's no sign of intelligent life here!"



Above is the Bell System's new "musical keyboard." Insert shows the digits of telephone numbers in musical notation, just as they are sent across country.

Playing a tune for a telephone number

Before you talk over some of the new Bell System long distance circuits, your operator presses keys like those shown above, one for each digit in the number of the telephone you are calling. Each key sends out a pair of tones, literally setting the number to music.

In the community you are calling, these tones activate the dial telephone system, to give you the number you want. It is as if the operator reached across the country and dialed the number for you.

This system, one of the newest developments of Bell Telephone Laboratories, is already in use on hundreds of long distance lines radiating from Chicago, Cleveland, New York, Oakland and Philadelphia, and between a number of other communities.

It will be extended steadily in other parts of the country—a growing example of the way Bell Telephone Laboratories are ever finding new ways to give you better, faster telephone service.

BELL TELEPHONE LABORATORIES

Exploring and inventing, devising and perfecting, for continued improvements and economies in telephone service



SYSTEMATICALLY SPEAKING

Electronic Tax Returns

InfoWorld

Businesses will be able to file income tax returns electronically during the 1987 tax season as part of the IRS's growing automation program.

Individual 1986 returns can be electronically filed only from seven cities.

Business returns can be filed via telecommunications or magnetic tape and must conform to IRS file formats.

Also, for the first time, electronic filers will be able to get an electronic refund if they include a number on their form identifying their bank. The IRS will instruct the US Treasury to use electronic funds transfer to credit the taxpayer's bank account.

This year the IRS processed 25,000 returns electronically and next year it can handle up to 120,000.

Software Makers Crash BBS

InfoWorld

With the aid of a private investigator, a group of software publishers has forced a pirate software bulletin board to close down.

The publishers did not file any charges against the operator of the private Fidonet-based board and would only identify him as living in the Cincinnati area. However, the group is lending its support to a suit against The Dragon's Lair, which is operated out of Brooklyn, New York.

After discovering the Ohio board, the president of Michtron, in Michigan, sent a letter to several other publishers announcing his discovery. Soon after, he assembled a group (including the Software Publishers Association, Digital Research, and Antic Software) that hired private investigator Dennis Hettman, who has investigated several pirate operations.

Hettman explained to the sysop that the software publishers would take legal action if the BBS, which they termed the largest pirate BBS in the country, was not closed down. The operator of the IBM-PC with 44 megabytes complied.

Poor Service An Understatement

The Wall Street Journal

The Federal Communications Commission issued a warning to consumers about a company that offers what seems to be free long-distance service.

Both the FCC and several state prosecutors contend that Independent Communications Network, Inc. may be misleading consumers in the marketing of what the company calls the first long-distance "party-line system."

The company leases lines from long-distance companies and signs up customers, who pay \$100 a month to make an unlimited number of long-distance calls on these shared lines.

In addition, customers themselves can receive as much as \$25 for each new customer they can sign up for the service. "It is similar to Amway," said Larry Hartsough, chief of operations for Independent. Amway is often accused of creating pyramid schemes to bilk people out of their money by promising them wealth.

Hartsough estimated that Independent customers cannot complete a call 62% of the time. (AT&T has said that its long-distance "blockage" rate is less than 1%.)

In San Diego, prosecutors said they obtained a search warrant and raided an Independent agent, seeking evidence of possible violations of grand theft and anti-pyramid statutes. They said the agent claimed that Independents system could handle 16,800 calls at once. It has been estimated that such a capacity would require 32,800 WATS lines and would make Independent one of the largest users of WATS lines in the world.

Rural Ultraphones

Communications Week

Mountain States Telephone & Telegraph Company has begun a six-month field test of a fixed subscriber radio system. The system, known as Ultraphone, eliminates the high cost of laying cables to remote rural areas with few subscribers. Eight parties will take part in the test, some of whom have been waiting 19 years for telephone service.

The system uses low power digital radio to transmit conversations from the residence to the central office. The cost of providing traditional copper cable service to cattle ranchers in Glendo, Wyoming has always been prohibitive.

Mountain Bell is charging each party a \$4,850 construction fee, plus \$20 a month. The ranchers will continue to receive service even if the Ultraphone test does not work out.

Ultraphone uses frequencies already allocated to telephone companies and can transmit four conversations over the same bandwidth.

Local Toll-Free Numbers

Communications Week

Bell Telephone of Pennsylvania will introduce two toll-free number services that will permit customers to call businesses from anywhere in a LATA (local access transport area) using a single telephone number designated for each subscribing company.

The new services, called One Number Service and Custom Routing service, will allow callers to dial a seemingly local seven-digit number and have their call routed toll free to the subscribing business.

Bell of Pennsylvania created a special 890 prefix to handle the calls, which travel to the nearest central office switch and then are forwarded to the business' location.

The Custom Routing Service routes calls from the 890 number to a particular branch of a business, not only a single location.

ESS Goes To Taiwan

Communications Week

AT&T Taiwan Communications Co. has cut over to the country's first number five electronic switch. The 20,000 line switch is the largest 5ESS cutover outside the United States. The cutover is a step in the Directorate General's plans to modernize Taiwan's telecommunications system, including instituting integrated services digital network by the end of the century.

NSA Wants a New Chip

Privacy Journal

The National Security Agency, which has kibitzed in the development and use of encryption by the private sector since the beginning is pushing hard to abandon the current federally sanctioned Data Encryption Standard (DES) and replace it in 1988 with a "tamper-proof" computer chip.

NSA is establishing an industrial consortium to produce the chip. This "decertification" of DES has caused confusion in the computer security business and perhaps retarded development of new equipment for securing computer communications. In the 1970s, NSA kept a close eye on the development of DES, an algorithm to scramble computer data, to make sure DES was solvable by NSA when used by companies and foreign governments yet secure enough to protect most U.S. computer activity. Since the adoption of the IBM-developed DES in 1977, it has been widely used by government agencies, financial institutions, and other businesses to protect data. Now, NSA says that foreign adversaries may be able to break the code. "Therefore, we have determined that it is in the U.S. interest to introduce new cryptographic algorithms." Critics say that NSA's proposed "black box" solution to the threat, a tangible chip, may be more subject to tampering by adversaries than an upgraded code. Another disadvantage to businesses is that they would not know the composition of the top-secret chip they are installing in their systems. "People in the industry feel betrayed," says one Silicon Valley specialist in data security.

letter department

(continued from page 3-76)

Dear 2600:

A while ago, you requested info on foreign telephone systems. Well, here it is. I have lived in Saudi Arabia for the last 8 years, and your report on the Israeli telephone system sounded very similar. The Saudi Telecom system is the same as the Israel system as far as the payphones and ways to defeat them go. Aranco, the oil company there has their own telephone network; it has 9 conference lines, each with a 75 person limit. The phone number for there is 011-966-3-876-750(1-9). ANI is 311, TTY is 873-7310, weather recording is 875-2424. There are several BBS's in the kingdom, 873-785(1,2), 826-4990, 678-2395, 572-3884, and there is also an E-Mail service at 898-0400. To dial any of these just add 011-966-3 and the phone number, have fun and see you there!

Mr. Tracer

Readers:

Let's hear about other places.

Dear 2600:

I would like to ask you or the readers two questions. First, I wondered why, on a standard telephone, there are all of the letters in the alphabet except "Q" and "Z"? It might be a strange question but I would still like to know why.

Also, I was making a long distance call to the 813 area code, from a pay phone one day and the number I was calling was busy. I tried a busy verification to see if they would charge me for it. In this case, they did not but other times they wanted money (do you know why, sometimes they charge me and other times they don't?). When the local operator went to call the operator who does the busy verification, she first called a number which gave her a recording that said "813 plus 042 plus". Wouldn't this be very helpful to anyone using a blue box, and do you know that number or how to get it?? The operator used the term "BY" in place of busy verification and the other operator used the term "OD" to mean out of order. I guess it's just some of the operator lingo.

Het Kap

Dear Het Kap:

Z and Q are not on the dial because when the eight numbers that have letters (2-9) are each given three letters there are two left over. Z and Q are the least frequently used letters in the alphabet, so they were not used. However, on some older phones, you may find a Z on the 0 key.

Hopefully, you remember that exchanges used to have names such as Plaza-1 for the (516) 751 exchange.

In response to your other question, there are no charges for interstate verification calls, but there are charges for intrastate long distance charges. "813 plus 042 plus" would be the number to dial to an inward operator, but in this case the operators said that they got nothing when they did this for us.

Dear 2600:

I'm a new subscriber and would like to contribute some interesting information.

First, there's a computer at 8005387002 which accepts a 10-digit DTMF sequence and speaks them back at you. The input must be ten digits with *, #, A, B, C, and D tones accepted but not pronounced, and is more forgiving than most C.O.'s as far as frequency tolerance goes. Tape-recorded DTMF inputs will decode fine if your tape speed and audio levels are up to par.

I'm employed by the cellular telephone industry and would gladly write an article on cellular phreaking if there's any interest. The article will have to be a bit on the technical side however, and the techniques outlined will require knowledge of electronics and hexadecimal math and access to a PROM programmer.

Bernie S.

Dear Bernie:

The number you gave belongs to a company that sells equipment that generates speech and is activated by touch tones. It will be a good tool for those who need to decode phone numbers. Radio Shack sells a chip that is called a touch tone decoder; maybe one of our electronically proficient readers can produce a schematic to make this chip work for us.

With regards to writing articles: please write about cellular phones, but write two articles: The first should be an overview of how cellular phones work, how calls are routed, and how we can call a cellular phone. Include some sample phone numbers or perhaps a directory of numbers to call. Try to answer simple questions that people who have not had a chance to use cellular phones may ask.

Then, you can tell us how we can phreak them. If it is technical, try to give some reference sources. Try to make it interesting, so, even if we lack the education and resources to practice cellular phreaking, we would want to read it.

Finally, for those of you interested in writing for us, our mailbox is always open. Send all articles and letters to 2600, PO Box 99, Middle Island, NY 11953-0099. While we don't pay writers at the moment, we do provide free subscriptions to steady suppliers. If you have questions, call us at 5167512600. If you get the machine, leave a message and we'll call back.

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