Title       Secrets of the Little Blue Box
Publication Esquire Magazine
Date        1971-10-00
Author(s)   Rosenbaum, Ron
V/I/P       p. 116
Abstract    Lengthy and famous article explains how the phone lines work in technical detail, with technical details of different methods of phreaking. Author interviewed serveral phreaks including Captain Crunch, Joe Engressia, Mark Bernay and a phreak who is given the alias Al Gilbertson for this article. Their histories and current lives are discussed at length.
Keywords    gambling; blue box; tandem; Las Vegas; Phillipines; Fraser Lucey; Pacific Telephone and Telegraph Company (PTT); black box; 2600; phone phreaks; Joe Engressia; multi-frequency tones; Bell Telephone Laboratories; long-line trunks; toll switching offices; Captain Crunch; Dr. No; Frank Carson; Marty Freeman; Peter Perpendicular Pimple; Alefnull (phone phreak); The Cheshire Cat; toll-free loop-around; 4A switching machine; stacking tandems; phone tapping; verification; Memphis; University of South Florida; Los Angeles; General Telephone and Electronics; Seattle; Cambridge, MA; New York; MF Boogie; Number 5 crossbar switching system; phone tripping; band-six in-WATS numbers; AT&T; 2111 conference; Vancouver, Canada; Mark Bernay; Automatic Electric; Northwest Pacific Bell; computer hackers; FBI; Alexander Graham Bell (phone phreak); breadbox; Millington, TN
Source      ProQuest
Secrets of the Little Blue Box
by Ron Rosenbaum

A story so incredible it may even make you feel sorry for the phone company

The Blue Box Is Introduced:
Its Qualities Are Remarked

I am in the expensively furnished living room of Al Gilbertson*, the creator of the "blue box." Gilbertson is holding one of his shiny black-and-silver "blue boxes" comfortably in the palm of his hand, pointing out the thirteen little red push buttons sticking up from the console. He is dancing his fingers over the buttons, tapping out discordant beeping electronic jingles. He is trying to explain to me how his little blue box does nothing less than place the entire telephone system of the world, satellites, cables and all, at the service of the blue-box operator, free of charge.

"That's what it does. Essentially it gives you the power of a super operator. You seize a tandem with this top button," he presses the top button with his index finger and the blue box emits a high-pitched cheep, "and like that"—cheep goes the blue box again—"you control the phone company's long-distance switching systems from your cute little Princess phone or any old pay phone. And you've got anonymity. An operator has to operate from a definite location: the phone company knows where she is and what she's doing. But with your beeper box, once you hop onto a trunk, say from a Holiday Inn 800 [toll-free] number, they don't know where you are, or where you're coming from, they don't know how you slipped into their lines and popped up in that 800 number. They don't even know anything illegal is going on. And you can obscure your origins through as many levels as you like. You can call next door by way of White Plains, then over to Liverpool by cable, and then back here by satellite. You can call yourself from one pay phone all the way around the world to a pay phone next to you. And you get your dime back too."

"And they can't trace the calls? They can't charge you?"

"Not if you do it the right way. But you'll find that the free-call thing isn't really as exciting at first as the feeling of power you get from having one of these babies in your hand. I've watched people when they first get hold of one of these things and start using it, and discover they can make connections, set up crisscross and zigzag switching patterns back and forth across the world. They hardly talk to the people they finally reach. They say hello and start thinking of what kind of call to make next. They go a little crazy." He looks down at the neat little package in his palm. His fingers are still dancing, tapping out beeper patterns.

"I think it's something to do with how small my models are. There are lots of blue boxes around, but mine are the smallest and most sophisticated electronically. I wish I could show you the prototype we made for our big syndicate order."

He sighs. "We had this order for a thousand beeper boxes from a syndicate front man in Las Vegas. They use them to place bets coast to coast, keep 'em lines open for hours, all of which can get expensive if you have to pay. The deal was a thousand blue boxes for $300 apiece. Before then we retailed them for $1,500 apiece, but $300,000 in one lump was hard to turn down. We had a manufacturing deal worked out in the Philippines. Everything ready to go. Anyway, the model I had ready for limited mass production was small enough to fit inside a flip-top Marlboro box. It had flush-touch panels for a keyboard, rather than these unsightly buttons sticking out. Looked just like a tiny portable radio. In fact, I had designed it with a tiny transistor receiver to get one AM channel, so in case the law became suspicious the owner could switch on the radio part, start snapping his fingers, and no one could tell anything illegal was going on. I thought of everything for this model—I had it lined with a band of thermit which could be ignited by radio signal from a tiny button transmitter on your belt, so it could be burned to ashes instantly in case of a bust. It was beautiful. A beautiful little machine. You should have seen the faces on these syndicate guys when they came back after trying it out. They'd hold it in their palm like they never wanted to let it go, and they'd say, 'I can't believe it. I can't believe it.' You probably won't believe it until you try it."

The Blue Box Is Tested:
Certain Connections Are Made

About eleven o'clock two nights later Fraser Lucey has a blue box in the palm of his left hand and a phone in the palm of his right. He is standing inside a phone booth next to an isolated shut-down motel off Highway 1. I am standing outside the phone booth.

Fraser likes to show off his blue box for people. Until a few weeks ago when Pacific Telephone made a few arrests in his city, Fraser Lucey liked to bring his blue box** to parties. It never failed: a few cheeps from his device and Fraser became the center of attention at the very hiffest of gatherings, playing phone tricks and doing request numbers for hours. He began to take

* His real name has been changed.

Photographed by Ronald Barnett

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orders for his manufacturer in Mexico. He became a dealer.

Fraser is cautious now about where he shows off his blue box. But he never gets tired of playing with it. "It's like the first time every time," he tells me.

Fraser puts a dime in the slot. He listens for a tone and holds the receiver up to my ear. I hear the tone.

Fraser begins describing, with a certain practiced air, what he does while he does it.

"I'm dialing an 800 number now. Any 800 number will do. It's toll free. Tonight I think I'll use the - - - - - - - - - - [names a well-known rent-a-car company] 800 number. Listen. It's ringing. Here, you hear it? Now watch."

He places the blue box over the mouthpiece of the phone so that the one silver and twelve black push buttons are facing up toward me. He presses the silver button—the one at the top—and I hear that high-pitched beep.

"That's 2600 cycles per second to be exact," says Lucey. "Now, quick, listen."

He shoves the earpiece at me. The ringing has vanished. The line gives a slight hiccup, there is a sharp buzz, and then nothing but soft white noise.

"We're home free now," Lucey tells me, taking back the phone and applying the blue box to its mouthpiece once again. "We're up on a tandem, into a long-lines trunk. Once you're up on a tandem, you can send yourself anywhere you want to go." He decides to check out London first. He chooses a certain pay phone located in Waterloo Station. This particular pay phone is popular with the phone-phreaks network because there are usually people walking by at all hours who will pick it up and talk for a while.

He presses the lower left-hand corner button which is marked "KP" on the face of the box.

"That's Key Pulse. It tells the tandem we're ready to give it instructions. First I'll punch out KP 182 START, which will slide us into the overseas sender in White Plains." I hear a neat clunk-cheep. "I think we'll head over to England by satellite. Cable is actually faster and the connection is somewhat better, but I like going by satellite. So I just punch out KP Zero 44. The Zero is supposed to guarantee a satellite connection and 44 is the country code for England. Okay . . . we're there. In Liverpool actually. Now all I have to do is punch out the London area code which is 1, and dial up the pay phone. Here, listen, I've got a ring now."


"Hello. Who's this?" Fraser asks.

"Hello. There's actually nobody here. I just picked this up while I was passing by. This is a public phone. There's no one here to answer actually."

"Hello. Don't hang up. I'm calling from the United States."

"Oh. What is the purpose of the call? This is a public phone you know."

"Oh. You know. To check out, uh, to find out what's going on in London. How is it there?"

"It's five o'clock in the morning. It's raining now."

"Oh. Who are you?"

The London passerby turns out to be an R.A.F. enlistee on his way back to the base in Lincolnshire, with a terrible hangover after a thirty-six-hour pass. He and Fraser talk about the rain. They agree that it's nicer like the first time every time," he tells me.

Fraser squeezes the little blue box affectionately in his palm. "I told ya this thing is for real. Listen, if you don't mind I'm gonna try this girl I know in Paris. I usually give her a call around this time. It freaks her out. This time I'll use the - - - - - - (a different rent-a-car company) 800 number and we'll go by overseas cable, 133; 33 is the country code for France, the 1 sends you by cable. Okay, here we go. . . . Oh damn. Busy. Who could she be talking to at this time?"

A state police car cruises slowly by the motel. The car does not stop, but Fraser gets nervous. We hop back into his car and drive ten miles in the opposite direction until we reach a Texaco station locked up for the night. We pull up to a phone box by the tire pump. Fraser dashes inside and tries the Paris number. It is busy again.

"I don't understand who she could be talking to. The circuits may be busy. It's too bad I haven't learned how to tap into lines overseas with this thing yet."

Fraser begins to phreak around, as the phone phreaks say. He dials a leading nationwide charge card's 800 number and punches out the tones that bring him the Time recording in Sydney, Australia. He beeps up the Weather recording in Rome, in Italian of course. He calls a dealer about another sort and talks in code. He calls up Joe Engressia, the original blind phone-phreak genius, and pays his respects. There are other calls. Finally Fraser gets through to his young lady in Paris. They both agree the circuits must have been busy, and criticize the Paris telephone system. At two-thirty in the morning Fraser hangs up, pockets his dime, and drives off, steering with one hand, holding what he calls his "lovely little blue box" in the other.

**You Can Call Long Distance for Less Than You Think**

"You see, a few years ago the phone company made one big mistake," Gilbertson explains two days later in his apartment. "They were careless enough to let some technical journal publish the actual frequencies used to create your own beeper device is within the range of any twelve-year-old kid, any twelve-year-old blind kid as a matter of fact. And he can do it in less than the twelve hours it took us. Blind kids do it all the time. They can't build anything as precise and compact as my beeper box, but theirs can do anything mine can do."

"How?"

"Okay. About twenty years ago A.T.&T. made a multi-billion-dollar decision to operate its entire long-distance switching system on twelve electronically generated
combinations of six master tones. Those are the tones you sometimes hear in the background after you’ve dialed a long-distance number. They decided to use some very simple tones—the tone for each number is just two fixed single-frequency tones played simultaneously to create a certain beat frequency. Like 1300 cycles per second and 900 cycles per second played together give you the tone for digit 5. Now, what some of these phone phreaks have done is get themselves access to an electric organ. Any cheap family home-entertainment organ. Since the frequencies are public knowledge now—one blind phone phreak has even had them recorded in one of those talking books for the blind—they just have to find the musical notes on the organ which correspond to the phone tones. Then they tape them. For instance, to get Ma Bell’s tone for the number 1, you press down organ keys F² and A² [900 and 700 cycles per second] at the same time. To produce the tone for 2 it’s F³ and C⁰ [1100 and 700 c.p.s]. The phone phreaks circulate the whole list of notes so there’s no trial and error anymore.”

He shows me a list of the rest of the phone numbers and the two electric organ keys that produce them.

“Actually, you have to record these notes at 3¾ inches-per-second tape speed and double it to 7½ inches-per-second when you play them back, to get the proper tones,” he adds.

“So once you have all the tones recorded, how do you plug them into the phone system?”

“Well, they take their organ and their cassette recorder, and start banging out entire phone numbers in tones on the organ, including country codes, routing instructions, ‘KP’ and ‘Start’ tones. Or, if they don’t have an organ, someone in the phone-phreak network sends them a cassette with all the tones recorded, with a voice saying ‘Number one,’ then you have the tone, ‘Number two,’ then the tone and so on. So with two cassette recorders they can put together a series of phone numbers by switching back and forth from number to number. Any idiot in the country with a cheap cassette recorder can make all the free calls he wants.”

“You mean you just hold the cassette recorder up to the mouthpiece and switch in a series of beeps you’ve recorded? The phone thinks that anything that makes these tones must be its own equipment?”

“Right. As long as you get the frequency within thirty cycles per second of the phone company’s tones, the phone equipment thinks it hears its own voice talking to it. The original long-distance phone phreak was this blind kid with perfect pitch, Joe Engressia, who used to whistle into the phone. An operator could tell the difference between his whistle and the phone company’s electronic tone generator, but the phone company’s switching circuit can’t tell them apart. The bigger the phone company gets and the further away from human operators it gets, the more vulnerable it becomes to all sorts of phone phreaking.”

A Guide for the Perplexed

“But wait a minute,” I stop Gilbertson. “If everything you do sounds like phone-company equipment, why doesn’t the phone company charge you for the call the way it charges its own equipment?”

“Okay. That’s where the 2600-cycle tone comes in. I better start from the beginning.”

The beginning he describes for me is a vision of the phone system of the continent as thousands of webs, of long-line trunks radiating from each of the hundreds of toll switching offices to the other toll switching offices. Each toll switching office is a hive compounded of thousands of long-distance tandems constantly whistling and beeping to tandems in far-off toll switching offices. The tandem is the key to the whole system. Each tandem is a line with some relays with the capability of signaling any other tandem in any other toll switching office on the continent, either directly one-to-one or by programming a roundabout route through several other tandems if all the direct routes are busy. For instance, if you want to call from New York to Los Angeles and traffic is heavy on all direct trunks between the two cities, your tandem in New York is programmed to try the next best route, which may send you down to a tandem in New Orleans, then up to San Francisco, or down to a New Orleans tandem, back to an Atlanta tandem, over to an Albuquerque tandem and finally up to Los Angeles.

When a tandem is not being used, when it’s sitting there waiting for someone to make a long-distance call, it whistles. One side of the tandem, the side “facing” your home phone, whistles at 2600 cycles per second toward all the home phones serviced by the exchange, telling them it is at their service, should they be interested in making a long-distance call. The other side of the tandem is whistling 2600 c.p.s. into one or more long-distance trunk lines, telling the rest of the phone system that it is neither sending nor receiving a call through that trunk at the moment., that it has no use for that trunk at the moment.

When you dial a long-distance number the first thing that happens is that you are hooked into a tandem. A register comes up to the side of the tandem facing away from you and presents that side with the number you dialed. This sending side of the tandem stops whistling 2600 into its trunk line. When a tandem stops the 2600 tone it has been sending through a trunk, the trunk is said to be “seized,” and is now ready to carry the number you have dialed—converted into multi-frequency beep tones—to a tandem in the area code and central office you want.

Now when a blue-box operator wants to make a call from New Orleans to New York he starts by dialing the 800 number of a company which might happen to have its headquarters in Los Angeles. The sending side of the New Orleans tandem stops sending 2600 out over the trunk to the central office in Los Angeles, thereby seizing the trunk. Your New Orleans tandem begins sending beep tones to a tandem it has discovered idly whistling 2600 cycles in Los Angeles. The receiving end of that L.A. tandem is seized, stops whistling 2600, listens to the beep tones which tell it which L.A. phone to ring, and starts ringing the 800 number. Meanwhile a mark made in the New Orleans office accounting tape notes that a call from your New Orleans phone to the 800 number in L.A. has been initiated and gives the call a code number. Everything is routine so far.

But then the phone phreak presses his blue box to the mouthpiece and pushes the 2600-cycle button, sending 2600 out from the New Orleans tandem to the L.A. tandem. The L.A. tandem notices 2600 cycles are coming over the line again and assumes that New Orleans has hung up because the trunk is whistling as if idle. The L.A. tandem immediately ceases ringing the L.A. 800 number. But as soon as the phreak takes his finger off the 2600 button, the L.A. tandem assumes the trunk is once again being used because the 2600 is gone, so it listens for a new series of digit tones—to find out where it must send the call.

Thus the blue-box operator in New Orleans now is in touch with a tandem in L.A. which is waiting like an obedient genie to be told what to do next. The blue-box owner then beeps out the ten digits of the New York number which tells the L.A. tandem to relay a call to New York City. Which it promptly does. As soon as your party picks up the phone in New York, the side of the New Orleans tandem facing you stops sending 2600
cycles to you and starts carrying his voice to you by way of
the L.A. tandem. A notation is made on the accounting
tape that the connection has been made on the 800 call
which had been initiated and noted earlier. When you
stop talking to New York a notation is made that the
800 call has ended.

At three the next morning, when the phone company's
accounting computer starts reading back over the mas-
ter accounting tape for the past day, it records that
a call of a certain length of time was made from your
New Orleans home to an L.A. 800 number and, of
course, the accounting computer has been trained to
ignore these toll-free 800 calls when compiling your
monthly bill.

"All they can prove is that you made an 800 toll-free
call," Gilbertson the inventor concludes. "Of course, if
you're foolish enough to talk for two hours on an 800
call, and they've installed one of their special anti-fraud
computer programs to watch out for such things, they
can spot you and ask you why you took two hours talk-
ing to Army Recruiting's 800 number when you're 4-F.
But if you do it from a pay phone, they may discover
something peculiar the next day—if they've got a blue-
box hunting program in their computer—but you'll be
a long time gone from the pay phone by then. Using a
pay phone is almost guaranteed safe."

"What about the recent series of blue-box arrests all
across the country—New York, Cleveland, and so on?"
I asked. "How were they caught so easily?"

"From what I can tell, they made one big mistake:
they were seizing trunks using an area code plus 555-
1212 instead of an 800 number. Using 555 is easy to de-
tect because when you send multi-frequency beep tones
off 555 you get a charge for it on your tape and the ac-
counting computer knows there's something wrong when
it tries to bill you for a two-hour call to Akron, Ohio,
information, and it drops a trouble card which goes right
into the hands of the security agent if they're looking for
blue-box users.

Whoever sold those guys their blue boxes didn't tell
them how to use them properly, which is fairly irrespon-
sible. And they were fairly stupid to use them at home
all the time.

"But what those arrests really mean is that an awful
lot of blue boxes are flooding into the country and that
people are finding them so easy to make that they know
how to make them before they know how to use them.
Ma Bell is in trouble."

And if a blue-box operator or a cassette-recorder
phone phreak sticks to pay phones and 800 numbers,
the phone company can't stop them?

"Not unless they change their entire nationwide long-
lines technology, which will take them a few billion
dollars and twenty years. Right now they can't do a
thing. They're screwed."

Captain Crunch Demonstrates His Famous Unit

There is an underground telephone network in this
country. Gilbertson discovered it the very day news of his
activities hit the papers. That evening his phone began
ringing. Phone phreaks from Seattle, from Florida,
from New York, from San Jose, and from Los Angeles
began calling him and telling him about the phone-
phreak network. He'd get a call from a phone phreak
who'd say nothing but, "Hang up and call this number."

When he dialed the number he'd find himself tied into
a quirky switching station in British Columbia. They
identified themselves as phone phreaks, they demon-
strated their homemade blue boxes which they called
"M-F-ers" (for "multi-frequency," among other things)
for him, they talked shop about phone-phreak devices.
They let him in on their secrets on the theory that if the
phone company was after him he must be trustworthy.
And, Gilbertson recalls, they stunned him with their
technical sophistication.

I asked him how to get in touch with the phone-phreak
network. He digs around through a file of old schematics
and comes up with about a dozen numbers in three
which helped the blind get onto the phone system.

"Those are the centers," he tells me. Alongside some
of the numbers he writes in first names or nicknames:
names like Captain Crunch, Dr. No, Frank Carson (also
a code word for free call), Marty Freeman (code word
for M-F device), Peter Perpendicular Pimple, Alefull,
and The Cheshire Cat. He makes checks alongside the
names of those among these top twelve who are blind.
There are five checks.

I ask him who this Captain Crunch person is.

"Oh. The Captain. He's probably the most legendary
phone phreak. He calls himself Captain Crunch after the
notorious Cap'n Crunch 2600 whistle." (Several years
ago, Gilbertson explains, the makers of Cap'n Crunch
breakfast cereal offered a toy-whistle prize in every box
as a treat for the Cap'n Crunch set. Somehow a phone
phreak discovered that the toy whistle just happened to
produce a perfect 2600-cycle tone. When the man who
calls himself Captain Crunch was transferred overseas
to England with his Air Force unit, he would receive scores
of calls from his friends and "mute" them—make them
free of charge to them—by blowing his Cap'n Crunch
whistle into his hand.)

"Captain Crunch is one of the older phone phreaks,
Gilbertson tells me. "He's an engineer who once got in a
little trouble for fooling around with the phone, but he
can't stop. Well, this guy drives across country in a
Volkswagen van with an entire switchboard and a com-
puterized super-sophisticated M-F-er in the back. He'll
pull up to a phone booth on a lonely highway somewhere,
make a cable out of his bus, hook it onto the phone and
sit for hours, days sometimes, sending calls zipping back
and forth across the country, all over the world . . ."

Back at my motel, I dialed the number he gave me for
"Captain Crunch" and asked for G - - - -T - - - - -. his
real name, or at least the name he uses when he's not
dashing into a phone booth beeping out M-F tones faster
than a speeding bullet, and zipping phantomlike through
the phone company's long-distance lines.

When G - - - -T - - - - - answered the phone and I told
him I was preparing a story for Esquire about phone
phreaks, he became very indignant.

"I don't do that. I don't do that anymore at all. And if
I do it, I do it for one reason and one reason only. I'm
learning about a system. The phone company is a System.
A computer is a System. Do you understand? If I do
what I do, it is only to explore a System. Computers.
Systems. That's my bag. The phone company is nothing
but a computer."

A tone of tightly restrained excitement enters the
Captain's voice when he starts talking about Systems.
He begins to pronounce each syllable with the hushed
delivery of an obscene caller.

"Ma Bell is a system I want to explore. It's a beau-
tiful system, you know, but Ma Bell screwed up. It's
terrible because Ma Bell is such a beautiful system, but
she screwed up. I learned how she screwed up from a
couple of blind kids who wanted me to build a device.
A certain device. They said it could make free calls. I
wasn't interested in free calls. But when these blind kids
told me I could make calls into a computer, my eyes lit
up. I wanted to learn about computers. I wanted to learn
about Ma Bell's computers. So I built the little device.
"Well, yes, how are things there?"

"Oh. Well, everything okay, I guess."

"Okay. Thank you." They hang up, leaving a confused series of beep-kachink sounds hanging in mid-air in the wake of the call before dissolving away.

The Captain is pleased. "You believe me now, don't you? Do you know what I'd like to do? I'd like to call up your editor at Esquire and show him just what it sounds like to stack and unstack tandems. I'll give him a show that will blow his mind. What's his number?"

I ask the Captain what kind of device he was using to accomplish all his feats. The Captain is pleased at the question.

"You could tell it was special, couldn't you? Ten pulses per second. That's faster than the phone company's equipment. Believe me, this unit is the most famous unit in the country. There is no other unit like it. Believe me."

"Yes, I've heard about it. Some other phone phreaks have told me about it."

"They have been referring to me, ahem, unit? What is it they said? Just out of curiosity, did they tell you it was a highly sophisticated computer-operated unit, with acoustical coupling for receiving outputs and a switchboard with multiple-line-tie capability? Did they tell you that the frequency tolerance is guaranteed to be no more than .05 percent? The amplitude tolerance less than .01 decibel? Those pulses you heard were perfect. They just come faster than the phone company. Those were high-precision op-amps. Op-amps are instrumentation amplifiers designed for ultra-stable amplification, super-low distortion and accurate frequency response. Did they tell you it can operate in temperatures from -55°C to +125°C?"

I admit that they did not tell me all that.

"I built it myself," the Captain goes on. "If you were to go out and buy the components from an industrial wholesaler it would cost you at least $1,500. I once worked for a semiconductor company and all this didn't work for me."

"I wanted to show you what it's like to stack up tandems. To stack up tandems." (Whenever the Captain says "stack up" it sounds as if he is licking his lips.)

"How do you like the connection you're on now?" the Captain asks me. "It's a raw tandem. A raw tandem. Ain't nothin' up to it but a tandem. Now I'm going to show you what it's like to stack up. Blow off. Land in a far-away place. To stack that tandem up, whip back and forth across the country a few times, then shoot on up to Moscow."

"Listen," Captain Crunch continues. "Listen. I've got a line tie on my switchboard here, and I'm gonna let you hear me stack and unstack tandems. Listen to this. I'm gonna blow your mind."

First I hear a super rapid-fire pulsing of the flatlike phone tones, then a pause, then another popping burst of tones, then another, then another. Each burst is followed by a beep-kachink sound.

"We have now stacked up four tandems," said Captain Crunch, sounding somewhat remote. "That's four tandems stacked up. Do you know what that means? That means I'm whipping back and forth, back and forth twice, across the country, before coming to you. I've been known to stack up twenty tandems at a time. Now, just like I said, I'm going to shoot up to Moscow."

There is a new, longer series of beeper pulses over the line, a brief silence, then a ring.

"Hello," answers a far-off voice.

"Hello. Is this the American Embassy Moscow?"

"Yes, sir. Who is this calling?" says the voice.

"Yes. This is test board here in New York. We're calling to check out the circuits, see what kind of lines you've got. Everything okay there in Moscow?"

"Okay?"
"Oh, you know. Hello test one two three," he says in a low-pitched voice.

"Hello test one two three," he replies to himself in a high-pitched voice.

"Hello test one two three," he repeats again, low-pitched.

"Hello test one two three," he replies, high-pitched.

"I sometimes do this: Hello hello hello hello, hello," he trails off and breaks into laughter.

Why Captain Crunch Hardly Ever Taps Phones Anymore

Using internal phone-company codes, phone phreaks have learned a simple method for tapping phones. Phone-company operators have in front of them a board that holds verification jacks. It allows them to plug into conversations in case of emergency, to listen to in a line to determine if the line is busy or the circuits are busy. Phone phreaks have learned to beep out the codes which lead them to a verification operator, tell the verification operator they are switchmen from some other area code testing out verification trunks. Once the operator hooks them into the verification trunk, they disappear into the board for all practical purposes, slip unnoticed into any one of the 10,000 to 100,000 numbers in that central office without the verification operator knowing what they're doing, and of course without the two parties to the connection knowing there is a phantom listener present on their line.

Toward the end of my hour-long first conversation with him, I asked the Captain if he ever tapped phones.

"Oh no, I don't do that. I don't think it's right," he told me firmly. "I have the power to do it but I don't...." Well one time, just one time, I have to admit that I did. There was this girl Linda, and I wanted to find out...you know, I tried to call her up for a date. I had a date with her the last weekend and I thought she liked me. I called her up, man, and her line was busy, and I kept calling and it was still busy. Well, I had just learned about this system of jumping into lines and I said to myself, 'Hmmm. Why not just see if it works.' It'll surprise her if all of a sudden I should pop up on her line. It'll impress her if anything.' So I went ahead and did it. I M-F-ed into the line. My M-F'er is powerful enough when patched directly into the mouthpiece to trigger a verification trunk without using an operator the way the other phone phreaks have to.

"I slipped into the line and there she was talking to another boyfriend. Making sweet talk to him. I didn't make a sound because I was so disguised. So I waited there for her to hang up, listening to her making sweet talk to another guy. You know. So as soon as she hung up I instantly M-F-ed her up and all I said was, 'Linda, we're through.' And I hung up. And it blew her head off. She couldn't figure out what the hell had happened.

"But that was the only time. I did it thinking I would surprise her, impress her. Those were all my intentions were, and well, it really kind of hurt me pretty badly, and... and ever since then I don't go into verification trunks."

Moments later my first conversation with the Captain comes to an end.

"Listen," he says, his spirits somewhat cheered, "listen. What you are going to hear when I hang up is the sound of tandems unstacking. Layer after layer of tandems unstacking until there's nothing left of the stack, until it melts away into nothing. Cheep, cheep, cheep, cheep," he concludes, his voice descending to a whisper with each cheep.

He hangs up. The phone suddenly goes into four spasms: kachink cheep. Kachink cheep kachink cheep
Sure enough, a jumpy version of Moe Kravat Rumble boogies its way over the line, each note one of those long-distance phone tones. The music stops. A huge roaring voice blasts the phone off my ear: "AND THE QUESTION IS . . ." roars the voice, "CAN A BLIND PERSON HOOK UP AN AMPLIFIER ON HIS OWN?"

The roar ceases. A high-pitched operator-type voice replaces it. "This is Southern Braille Tel. & Tel. Have tone, will phone."

This is succeeded by a quick series of M-F tones, a swift "kachink" and a deep reassuring voice: "If you need home care, call the visiting-nurses association. First National time in Honolulu is 4:32 p.m."

Joe back in his Joe voice again: "Are we seeing eye to eye? 'Sf, sf,' said the blind Mexican. Ahem. Yes. Would you like to know the weather in Tokyo?"

This swift manic sequence of phone-phreak vaudeville stunts and blind-boy jokes manages to keep Joe's mind off his tormentor only as long as it lasts.

"The reason I'm in Memphis, the reason I have to depend on that homosexual guy, is that this is the first time I've been able to live on my own and make phone trips on my own. I've been banned from all central offices around home in Florida, they knew me too well, and quite a few switchboards, crossbar scholars were always harassing me because I was on the dorm pay phone all the time and making fun of me because of my fat ass, which of course I do have, it's my physical fatness program, but I don't like to hear it every day, and if I can't phone trip and I can't phone phreak, I can't imagine what I'd do, I've been devoting three quarters of my life to it."

"I moved to Memphis because I wanted to be on my own as well as because it has a Number 5 crossbar switching system and some interesting little independent phone-company dimes, nearby and so far they don't seem to know who I am so I can go on phone tripping, and for me phone tripping is just as important as phone phreaking."

Phone tripping, Joe explains, begins with calling up a central-office switch room. He tells the switchman in a polite earnest voice that he's a blind college student interested in telephones, and could he perhaps have a guided tour of the switching station? Each step of the tour Joe likes to touch and feel relays, caress switching devices, feel the switchboards, crossbar arrangements.

So when Joe Engressia phone phreaks he feels his way through the circuitry of the country garden of forking paths, he feels switches shift, relays shunt, crossbars swivel, tandems engage and disengage even as he hears—with perfect pitch—his M-F pulses make the entire Bell system dance to his tune.

Just one month ago Joe took all his savings out of his bank and left home, over the emotional protests of his mother. "I ran away from home almost," he likes to say. Joe found a small apartment house on Union Avenue and began making phone trips. He'd take a bus a hundred miles south into Mississippi to see some old-fashioned Bell equipment still in use in several states, which had been puzzling. He'd take a bus three hundred miles to Charlotte, North Carolina, to look at some brand-new experimental equipment. He hired a taxi to drive him twelve miles to a suburb to tour the office of a small phone company with some interesting idiosyncracies in its routing system. He was having the time of his life, he said, the most freedom and pleasure he had known.

In that month he had done very little long-distance phone phreaking from his own phone. He had begun to apply for a job with the phone company, he told me, and he wanted to stay away from anything illegal.

"Any kind of job will do, anything as menial as the most lowly operator. That's probably all they'd give me because I'm blind. Even though I probably knew more than most switchmen. But that's okay. I want to work for Ma Bell. I don't hate Ma Bell the way Gilbertson and some phone phreaks do. I don't want to screw Ma Bell. With me it's the pleasure of pure knowledge. There's something beautiful about the system when you know it intimately the way I do. But I don't know how much they know about me here. I have a very intuitive feel for the condition of the line I'm on, and I think they're monitoring me off and on lately, but I haven't been doing much illegal. I have to make a few calls to switchmen once in a while which aren't strictly legal. I just once I took an acid trip and was having these auditory hallucinations as if I were trapped and these planes were dive-bombing me, and all of a sudden I had to phone phreak out of there. For some reason I had to call Kansas City, but that's all."

A Warning Is Delivered

At this point—one o'clock in my time zone—a loud knock on my motel-room door interrupts our conversation. Outside the door I find a uniformed security guard. He informed me that there has been an "emergency phone call" for me while I have been on the line and that the front desk has sent him up to let me know.

Two seconds after I say good-bye to Joe and hang up, the phone rings.

"Who were you talking to?" the agitated voice demands. The voice belongs to Captain Crunch. "I called because I decided to warn you of something. I decided to warn you to be careful. I don't want this information you get to get to the radical underground. I don't want it to get into the wrong hands. What would you say if I told you it's possible for three phone phreaks to saturate the phone system of the nation. Saturate it. Busy it out. All of it. I know how to do this. I'm not gonna tell. I friend of mine has already saturated the trunks between Seattle and New York. He did it with a computerized M-F'er hitched into a special Manitoba exchange. But there are other, easier ways to do it."

Just three people? I ask. How is that possible?

"Have you ever heard of the long-lines guard frequency? Do you know about stacking tandems with 17 and 2600? Well, I'd advise you not to use them. I'm not gonna tell you. But whatever you do, don't let this get into the hands of the radical underground."

(Later Gilbertson the inventor confessed that while he had always been skeptical about the Captain's claim of the sabotage potential of trunk-tying phone phreaks, he had recently heard certain demonstrations which convinced him the Captain was not speaking idly. "I think it might take more than three people, depending on how many machines like Captain Crunch's were available. But even though the Captain sounds a little weird, he generally turns out to know what he's talking about."

"You know," Captain Crunch continues in his admonitory tone, "you know the younger phone phreaks call Moscow all the time. Suppose everybody were to call Moscow. I'm no right-winger. But I value my life. I don't want the Commies coming over and dropping a bomb on my head. That's why I say you've got to be careful about who gets this information."

The Captain suddenly shifts into a diatribe against those phone phreaks who don't like the phone company. They don't understand but Ma Bell knows everything they do. Ma Bell knows everything. Listen, is this line hot? I just heard someone tap in. I'm not paranoid, but I can detect things like that. Well, even if it is, they know that I know that they know that I have a bulk eraser. I'm very clean." The Captain pauses, evidently torn be-Esquire: October
tween wanting to prove to the phone-company monitors that he does nothing illegal, and the desire to impress Ma Bell with his prowess. “Ma Bell knows the things I can do,” he continues. “Ma Bell knows how good I am. And I am quite good. I can detect reversals, tandem switching, everything that goes on on a line. I have relative pitch now. Do you know what that means? My ears are a $20,000 piece of equipment. With my ears I can detect things they can’t hear with their equipment. I’ve had employment problems. I’ve lost jobs. But I want to show Ma Bell how good I am. I don’t want to screw her. I want to work for her. I want to help her get rid of her flaws and become perfect. That’s my number-one goal in life now.” The Captain concludes his warnings and tells me he has to be going. “I’ve got a little action lined up for tonight,” he explains and hangs up.

Before I hang up for the night, I call Joe Engressia back. He reports that his tormentor has finally gone to sleep—“He’s not blind drunk, that’s the way I get, ahem, yes; but you might say he’s in a drunken stupor.” I make a date to visit Joe in Memphis in two days.

**A Phone Phreak Cell Takes Care of Business**

The next morning I attend a gathering of four phone phreaks in ——— (a California suburb). The gathering takes place in a comfortable split-level home in an upper-middle-class subdivision. Heaped on the kitchen table are the portable cassette recorders, M-F cassettes, phone patches, and line ties of the four phone phreaks present. On the kitchen counter next to the telephone is a shoe-box-size blue box with thirteen large toggle switches for the tones. The parents of the host phone phreak, Ralph, who is blind, stay in the living room with their sighted children. They are not sure exactly what Ralph and his friends do with the phone or if it’s strictly legal, but he is blind and they are pleased he has a hobby which keeps him busy.

The group has been working at reestablishing the historic “2111” conference, reopening some toll-free loops, and trying to discover the dimensions of what seem to be new initiatives against phone phreaks by phone-company security agents.

It is not long before I get a chance to see, to hear, Randy at work. Randy is known among the phone phreaks as perhaps the finest con man in the game. Randy is blind. He is pale, soft and pear-shaped, he wears baggy pants and a wrinkly nylon white sport shirt, pushes his head forward from hunched shoulders somewhat like a turtle inching out of its shell. His eyes wander, crossing and recrossing, and his forehead is somewhat pimply. He is only sixteen years old.

But when Randy starts speaking into a telephone mouthpiece his voice becomes so stunningly authoritative it is necessary to look again to convince yourself it comes from chubby adolescent Randy. Imagine the voice of a crack oil-rig foreman, a tough, sharp, weather-beaten Marlboro man of forty. Imagine the voice of a brilliant performance-fund gunslinger explaining how he beats the Dow Jones by thirty percent. Then imagine a voice that could make those two sound like Stepin Fetchit. That is sixteen-year-old Randy’s voice.

He is speaking to a switchman in Detroit. The phone company in Detroit had closed up two toll-free loop pairs for no apparent reason, although heavy use by phone phreaks all over the country may have been detected. Randy is telling the switchman how to open up the loop and make it free again:

“How are you, buddy. Yeah, I’m on the board in here in Tulsa, Oklahoma, and we’ve been trying to run some tests on your loop-arounds, and we find ‘em busied out on both sides. . . . Yeah, we’ve been getting a ‘BY’ on them, what d’ya say, can you drop cards on ‘em? Do you have 08 on your number group? Oh that’s okay, we’ve had this trouble before, we may have to go after the circuit. Here, lemme give ‘em to you: your frame is 05, vertical group 03, horizontal 5, vertical file 3. Yeah, we’ll hang on here. . . . Okay, found it? Good. Right, yeah, we’d like to clear that busy out. Right. All you have to do is look for your key on the mounting plate, it’s in your miscellaneous trunk frame. Okay? Right. Now pull your key from NOR over to LCT. Yeah. I don’t know why that happened, but we’ve been having trouble with that one. Okay. Thanks a lot, fella. Be seein’ ya.”

Randy hangs up, reports that the switchman was a little inexperienced with the loop-around circuits on the miscellaneous trunk frame, but that the loop has been returned to its free-call status.

Delighted, phone phreak Ed returns the pair of numbers to the active-status column in his directory. Ed is a superb and painstaking researcher. With almost Talmudic thoroughness he will trace tendrils of hints through soft-wired mazes of intervening phone-company circuitry back through complex linkages of switching relays to find the location and identity of just one toll-free loop. He spends hours and hours, every day, doing this sort of thing. He has somehow compiled a directory of eight hundred “Band-six in-WATS numbers” located in over forty states. Band-six in-WATS numbers are the big 800 numbers—the ones that can be dialed into free from anywhere in the country.

Ed the researcher, a nineteen-year-old engineering student, is also a superb technician. He put together his own working blue box from scratch at age seventeen. (He is sighted.) This evening after distributing the latest issue of his in-WATS directory (which has been typed into Braille for the blind phone phreaks), he announces he has made a major new breakthrough:

“I finally tested it and it works, perfectly. I’ve got this switching matrix which converts any touch-tone phone into an M-F-er.”

The tones you hear in touch-tone phones are not the M-F tones that operate the long-distance switching system. Phone phreaks believe A.T.&T. had deliberately equipped touch tones with a different set of frequencies to avoid putting the six master M-F tones in the hands of every touch-tone owner. Ed’s complex switching matrix puts the six master tones, in effect puts a blue box, in the hands of every touch-tone owner.

Ed shows me pages of schematics, specifications and parts lists. “It’s not easy to build, but everything here is in the Heathkit catalog.”

Ed asks Ralph what progress he has made in his attempts to reestablish a long-term open conference line for phone phreaks. The last big conference—the historic “2111” conference—had been arranged through an unused Telex test-board trunk somewhere in the innards of a 4A switching machine in Vancouver, Canada. For months phone phreaks could M-F their way into Vancouver, beep out 604 (the Vancouver area code) and then beep out 2111 (the internal phone-company code for Telex testing), and find themselves at any time, day or night, on an open wire talking with an array of phone phreaks from coast to coast, operators from Bermuda, Tokyo and London who are phone-phreak sympathizers, and miscellaneous guests and technical experts. The conference was a massive exchange of information. Phone phreaks picked each other’s brains clean, then developed new ways to pick the phone company’s brains clean. Ralph gave M F Boogie concerts with his home-entertainment-type electric organ, Captain Crunch demonstrated his round-the-world prowess with his notori
ous computerized unit and dropped leering hints of the "action" he was getting with his girl friends. (The Captain lives out or pretends to live out several kinds of fantasies to the gossipy delight of the blind phone phreaks who urge him on to further triumphs on behalf of all of them.) The somewhat rowdy Northwest phone-phreak crowd let their bitter internal feud spill over into the peaceable conference line, escalating shortly into guerrilla warfare; Carl the East Coast international troublemaker, who could not understand why Bernay wasn't using the experimental direct M-F routes to central offices on the island of Bahrain in the Persian Gulf, introduced a new phone-phreak friend of his in Prentoria, and explained the technical operation of the new Oakland-to-Vietnam linkages. (Many phone phreaks pick up spending money by M-F-ing calls from relatives to Vietnam G.I.'s, charging $5 for a whole hour of trans-Pacific conversation.)

Day and night the conference line was never dead. Blind phone phreaks all over the country, lonely and isolated in homes filled with active sighted brothers and sisters, trapped with sharp and unimaginative blind kids in straightjacket schools for the blind, knew that no matter how late it got they could dial up the conference and find instant electronic communion with two or three other blind kids awake over on the other side of America. Talking together on a phone hookup, the blind phone phreaks say, is not much different from being there together. Physically, there was nothing more than a two-inch-square wafer of titanium inside a vast machine on Vancouver Island. For the blind kids there meant an exhilarating feeling of being in touch, through a kind of skill and magic which was peculiarly their own.

Last April 1, however, the long Vancouver Conference was shut off. The phone phreaks knew it was coming. Vancouver was in the process of converting from a step-by-step system to a 4A machine and the 2111 Telex circuit was to be wiped out in the process. The phone phreaks learned the actual day on which the conference would be erased about a week ahead of time over the phone company's internal-news-and-shop-talk recording.

For the next frantic seven days every phone phreak in America was on and off the 2111 conference twenty-four hours a day. Phone phreaks who were just learning the game or didn't have M-F capability were boosted up to the conference by more experienced phreaks so they could get a glimpse of what it was like before it disappeared. Top phone phreaks searched distant area codes for new conference possibilities without success. Finally in the early morning of April 1, the end came.

"I could feel it coming a couple hours before midnight," Ralph remembers. "You could feel something going on in the lines. Some static began showing up, then some whistling wheezing sound. Then there were breaks. Some people got cut off and called right back in, but after a while some people were finding they were cut off and couldn't get back in at all. It was terrible. I lost it about one a.m., but managed to slip in again and stay on until the thing died ... I think it was about four in the morning. There were four of us still hanging on when the conference disappeared into nowhere for good. We all tried to M-F up to it again of course, but we got silent termination. There was nothing there."

The Legendary Mark Bernay Turns Out To Be "The Midnight Skulker"

Mark Bernay. I had come across that name before. It was on Gilbertson's select list of phone phreaks. The California phone phreaks had spoken of a mysterious Mark Bernay as perhaps the first and oldest phone phreak on the West Coast. And in fact almost every phone phreak in the West can trace his origins either directly to Mark Bernay or to a disciple of Mark Bernay.

It seems that five years ago this Mark Bernay (a pseudonym he chose for himself) began traveling up and down the West Coast pasting tiny stickers in phone books all along his way. The stickers read something like "Want to hear an interesting tape recording? Call these numbers." The numbers that followed were toll-free loop-around pairs. When one of the curious called one of the numbers he would hear a tape recording pre-hooked into the loop by Bernay. Bernay, an eighteen-year-old reform-school kid in Long Beach whose name he forgets and who, he says, "just disappeared one night," got in touch, through a kind of skill and magic which was peculiarly their own.

In 1971, the year Bernay first got his name out through the loop, a Seattle kid who learned about loop-through Bernay's recording told a blind friend, the blind kid taught the secret to his friends at a winter camp for blind kids in Los Angeles. When the camp session was over these kids took the secret back to towns all over the West. This is how the original blind kids became phone phreaks. For them, for most phone phreaks in general, it was the discovery of the possibilities of loop-around numbers which led them on to far more serious and sophisticated phone-phreak methods, and which gave them a medium for sharing their discoveries.

A year later a blind kid who moved back east brought the technique to a blind kids' summer camp in Vermont, which spread it along the East Coast. All from a Mark Bernay sticker.

Bernay, who is nearly thirty years old now, got his start when he was fifteen and his family moved into an L.A. suburb serviced by General Telephone and Electronics equipment. He became fascinated with the differences between Bell and G.T.&E. equipment. He learned he could make interesting things happen by carefully timed clicks with the disengage button. He learned to interpret subtle differences in the array of clicks, whirrs and kachinks he could hear on his lines. He learned he could shift himself around the switching relays of the L.A. area code in a not-too-predictable fashion by inspersing his own hook-switch clicks with the clicks within the line. (Independent phone companies—there are nineteen hundred of them still left, most of them tiny island principalities in Ma Bell's vast empire—have (Continued on page 222)
(Continued from page 125) always been favorites with phone phreaks, first as learning tools, then as Archimedes platforms from which to manipulate the huge Bell system. For phreaking around with G.T.&E., the Bell territory will often M-F himself into an independent's switching system, with switching idiosyncrasies which can give him marvelous leverage over the Bell system.

"I have a real affection for Automatic Electric equipment," Bernay told me. "There are a lot of things you can play with. Things break down in interesting ways.

Shortly after Bernay graduated from college (with a double major in chemistry and philosophy), he graduated from phreaking around with G.T.&E. to the Bell System itself, and made his legendary sticker-pasting journey north along the coast, settling finally in Northwest Pacific Bell territory. He discovered that if Bell does not break down as interestingly as G.T.&E., it nevertheless offers a lot of "things to play with."

Bernay began to play with blue boxes. He established his own personal switchboard and phone-phreak research laboratory complex. He continued his phone-phreak evangelism with ongoing sticker-pasting campaigns. He set up two recording systems, one with instructions for beginning phone phreaks, the other with latest news and technical developments (along with some advanced instruction) gathered from sources all over the country.

These days, Bernay told me, he had gone beyond phone-phreaking itself. "Lately I've been enjoying playing with computers more than playing with phones. My personal thing in computers is just like with phones, I guess —the kick is in finding out how to beat the system, how to get at things I'm not supposed to know about, how to do things with the system that I'm not supposed to do."

As a matter of fact, Bernay told me, he had just been fired from his computer-programming job for doing things he was not supposed to be able to do. He had been working with a huge time-sharing computer system owned by a large corporation but shared by many others. Access to the computer was limited to those programmers and corporations that had been assigned certain passwords. He had been able to use his access to find out one section of the computer cordonned off from its own information storage. The password system prevented companies and individuals from stealing each other's information.

"I figured out how to write a program that would let me read everyone else's password," Bernay reports. "I began playing around with passwords. I began letting people who used the computer know, in subtle ways, that I knew their passwords. I began dropping notes to the computer supervisors with hints that I knew what I know. I signed them "The Midnight Skulker." I kept getting cleverer and cleverer with my messages and devising ways of showing them what I could do. I'm sure they couldn't imagine I could do the things I was showing them. But they never responded to me. Every once in a while they'd change the passwords, but I found out how to discover what the new ones were, and I let them know. But they never responded directly to The Midnight Skulker. I even finally designed a program which they could use to prevent me from doing what I do. In effect I told them how to wipe me out, The Midnight Skulker. It was a very clever program. I started leaving clues about myself. I wanted them to try and use it and then try to come up with something else that would reappear again. But they wouldn't play. I wanted to get caught. I mean I didn't want to get caught personally, but I wanted them to notice me and admit that they noticed me. I wanted them to attempt to respond, maybe in some interesting way."

Finally the computer managers became concerned enough about the threat of information-stealing to respond. However, Gilbertson learned how to make master keys to coin-phone cash registers; he lets the computer know, in subtle ways, that I knew what it did. In effect I told them how to prevent my program from finding out what it did. In effect I told them how to wipe me out, The Midnight Skulker. It was a very clever program. I started leaving clues about myself. I wanted them to try and use it and then try to come up with something else that would reappear again. But they wouldn't play. I wanted to get caught. I mean I didn't want to get caught personally, but I wanted them to notice me and admit that they noticed me. I wanted them to attempt to respond, maybe in some interesting way."

Computer freaking may be the wave of the future. It suits the phone-phreak sensibility perfectly. Gilbertson, the blue-box inventor and a lifelong phone phreak, has also gone on from phone-phreaking to computer-freaking. Before he got into the blue-box business Gilbertson, who is a highly skilled programmer, devised programs for international currency arbitrage.

But he began playing with computers in earnest when he learned he could use his blue box in tandem with the computer terminal installed in his apartment by the instrumentation firm he worked for. The print-out terminal and keyboard was equipped with acoustical coupling, so that by coupling his little ivory Princess phone to the terminal and then coupling his blue box on that, he could M-F his way into other computers with complete anonymity, and wilder, instead of re-program them at will; feed them false or misleading information; tap and steal from them. He explained to me that he taps computers by bypassing out all the lines, then going into a verification trunk, listening into the passwords and instructions one of the time sharers uses and then M-Fing in and imitating them. He believes it would not be impossible to creep into the F.B.I.'s crime control computer through a local police computer terminal and phreak around with the F.B.I.'s memory banks. He claims to have succeeded in re-programming a certain important institutional computer in such a way that it has cordoned off an entire section of its circuitry for his personal use, and at the same time conceals the arrangement from anyone else's notice. I have been unable to verify this claim.

As a more interesting things to learn," he told me one evening. We had been talking in the apartment of the man who served as the link between Gilbertson and the black box trade. "I have been talking in the apartment of the man who served as the link between Gilbertson and the syndicate in arranging the big $300,000 blue-box deal which fell through because of legal trouble. There has been some smoking."

"No more interesting things to learn," he continued. "Physical chemistry turns out to be a sick subject when you take it to its highest level. I don't know. I don't think I could explain to you how it's sick. You have to be there. But you get, I don't know, a false feeling of omnipotence. I suppose it's like phone-phreaking that way. This huge thing is there. This whole system. And there are holes in it and you slip into them like Alice and you're pretending you're doing something you're actually not, or at least it's no longer you that's doing what you thought you were doing. It's all Lewis Carroll. Physical chemistry and phone-phreaking. That's why you have these phone-phreak pseudonyms like The Cheshire Cat, The Red King,
People like Gilbertson and Alexander Graham Bell are always talking about ripping off the phone company and screwing Ma Bell. But if they were shown a single button and told that by pushing it they could turn the entire circuitry of A.T.&T. into molten puddles, they probably wouldn't push it. The disgruntled-inventor phone phreak needs the phone system the way the lapsed Catholic needs the Church, the way Satan needs a God, the way The Midnight Skulker needed, more than anything else, response.

Later that evening Gilbertson finished telling me how delighted he was at the flood of blue boxes spreading throughout the country, how delighted he was to know that "this time they're really screwed." He suddenly shifted gears.

"Of course, I do have this love/hate thing about Ma Bell. In a way I almost like the phone company. I guess I'd be very sad if they were to go away or if their services were to disintegrate. In a way it's just that after having been so good they turn out to have done things wrong with them. It's those flaws that allow me to get in and mess with them, but I don't know. There's something about it that gets to you and makes you want to get to it, you know? I ask him what happens when he runs out of interesting, forbidden things to learn about the phone system.

"I don't know, maybe I'd go to work for them for a while."

In security even?

"I'd do it, sure. I just as soon play—I'd just as soon work on either side."

Even figuring out how to trap phone phreaks? I said, recalling Mark Bernays's game.

"Yes, that might be interesting. Yes, I could figure out how to outwit the phone phreaks. Of course if I got too good at it, it might become boring again. Then I'd have to hope the phone phreaks got much better and outsmarted me for a while. That would move the quality of the game up one level. I might even have to help them out, you know, 'Well kids, I wouldn't want this to get around but did you ever think of—?' I could keep it going at higher and higher levels forever."

The dealer speaks up for the first time. He has been staring at the soft blinking pattern of lights and colors on the translucent tiled wall facing him. (Actually there are no patterns: the color and illumination of every tile is determined by a computerized random-

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The Big Memphis Bust

Joe Engresia never wanted to screw Ma Bell. I dream had always been to work for her.

The day I visited Joe in his small apartment on Union Avenue in Memphis, he was upset about another setback in his application for a telephone job.

"They're stalling on it. I got a letter today telling me they'd have to postpone the interview I requested again. My landlord read it for me. They gave me some sort of wanton papers on my rehabilitation status but I think there's something else going on."

When I switched on the 40-watt bulb in Joe's room—he sometimes forgets when a guest has guests—it looked as if there was enough telephone hardware to start a mall phone company of his own.

"I noticed I banged it once and it down. I noticed I banged it once and it down. I noticed I banged it once and it down. I noticed I banged it once and it down."

The phone was my life, and it was going to be alone on the line. Joe draws a deep breath, whistles him off the air with an easily distinguised noise. Joe is pleased to get the calls but he looked worried and preoccupied that evening, his brow constantly furrowed over his dark wandering eyes.

In addition to the phone's seamless skill, he has just learned that his apartment house is due to be demolished in sixty days for urban renewal. For all its shabbiness, the Union Avenue apartment has been Joe's first home—of his—own and he's worried that he may not find another before this one is demolished.

But what really bothers Joe is that switchmen haven't been listening to him. "I've been doing some checking on 800 numbers lately, and I've discovered that certain 800 numbers in New Hampshire couldn't be reached from Missouri and Kansas. Now it sound like a small thing, but I don't like to see sloppy work; it makes me feel bad about the line." So I've been calling switches offices and reporting it, but they haven't corrected it. I called them up for the third time today and instead of checking they just got mad. Well, that gets me mad. I mean, I do try to help them. There's something about that thing I can't understand—you want to help them and they just try to say you're defrauding them."

It is Sunday evening and Joe invites me to join him for dinner at a Holiday Inn. Frequently on Sunday evening Joe takes some of his welfare money, calls a cab, and treats himself to a steak dinner at one of Memphis' thirteen Holiday Inns. (Memphis is the headquarters of Holiday Inn. Holiday Inns have been a favorite for Joe ever since he made his first solo phone trip to a Bell switching office in Jacksonville, Florida, and stayed in the Holiday Inn there. He likes to stay at Holiday Inns because they represent freedom to him and because the rooms are arranged the same all over the country so he knows that any Holiday Inn room is familiar territory to him. Just like any telephone.)

Over steaks in the Pinnacle Restaurant of the Holiday Inn Medical Center on Madison Avenue in Memphis, Joe tells me the highlights of his life as a phone phreak.

At age seven Joe learned his first phone trick. A mean baby-sitter, tired of listening to little Joe play with the phone as he always did, constantly put a lock on the phone dial. "I got so mad. When there's a phone sitting there and I can't use it ... so I started getting mad and banging the receiver up and down. I noticed I banged it once and it clicked one. With I tried banging it twice ..." In a few minutes Joe learned how to dial by pressing the hook switch at the right time. "I was so excited I remember going 'whoa whoo' and beat a box down on the floor."

Joe says he learned all about piece of equipment but the toy phone and the Braille typewriter. One fourteen-year-old blind kid from Connecticut calls up and tells Joe he's got a girl friend. He's going to talk to Joe about girl friends. Joe says they'll talk later in the evening when they can be alone on the line. Joe draws a deep breath, whistles him off the air with an easily distinguishing noise. Joe is pleased to get the calls but he looked worried and preoccupied that evening. Joe has just learned that his apartment house is due to be demolished in sixty days for urban renewal. For all its shabbiness, the Union Avenue apartment has been Joe's first home—of his—own and he's worried that he may not find another before this one is demolished.

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At age eight Joe learned about whistling. "I was listening to some intercept nonworking-number recording in L.A.—I was calling L.A. as far back as that, but I usually dial nonworking numbers because there was something about that ... I'd listen to these recordings all day. Well, I was whistling 'cause listening to these recordings can be boring after a while even if they are from L.A., and all of a sudden in the midst of whistling, the recording clicked off. I fiddled around whistling some more, and the same thing happened. So I called up the switch room and said, 'Joe, I'm eight years old and I want to know why when I whistle this tone the line clicks off.' He tried to explain it to me, but it was a little too technical at the time. I went on learning. That was a thing nobody was going to stop me from doing. The phones were my life, and I was going to pay any price to keep on learning. I knew I could go to jail. But I had to do what I had to do to keep on learning."

The phone is ringing when we walk back into Joe's apartment on Union Avenue. It is Captain Crunch. The Captain has been following me around by phone, calling up everywhere I go with additional bits of advice and explanations for me and whatever phone phreak I happen to be visiting. Twice this time the Captain reports he is calling from what he describes as "my hideaway high up in the Sierra Nevada." He pouts lusty salvos of M-F and tells Joe he is about to "go out and get a little action tonight. Do some phreaking of another kind, if you know what I mean." Joe chuckles.

The Captain then tells me to make sure I understand that what he told me about tying up the nation's phone lines was true, but that he and the phone phreaks he knew never used the technique for sabotage. They only learned the technique to help the phone company.

"We do a lot of troubleshooting for them. Like this New Hampshire/Missouri WATS-line flaw I've been screaming about. We help them more than they think." After we say good-bye to the Captain and Joe whistles him off the line, Joe tells me about a disturbing dream he had the night before: "I had been caught and they were taking me to a prison. It was a long trip. They were taking me to a prison a long long way away. And we stopped at a Holiday Inn and it was my last night ever at a Holiday Inn. And then it was my last night ever using the phone. I was crying and crying, and the lady at the Holiday Inn said, 'Gosh, honey, you should never be sad at a Holiday Inn. You should always be happy here. Especially since it's your last night.' And that just made it worse and I was sobbing so much I couldn't stand it."

Two weeks after I left Joe Engresia's apartment, phone-company security agents and Memphis police broke into Joe's apartment, which they left pinned to a wall, they confiscated every piece of equipment in the room, including his toy telephone. Joe was placed under arrest and taken to
the city jail where he was forced to spend the night since he had no money and knew no one in Memphis to call.

It is not clear who told Joe what that night, but someone told him that the phone company had an open-and-shut case against him because of revelations of illegal activity he had made to a phone-company undercover agent.

By morning Joe had become convinced that the reporter from Esquire, with whom he had spoken two weeks ago, was the undercover agent. He probably had ugly thoughts about someone he couldn’t see gaining his confidence, listening to him talk about his personal obsessions and dreams, while planning all the while to lock him up.

“I really thought he was a reporter,” Engressia told the Memphis Press-Scimitar. “I told him everything. . . .” Feeling betrayed, Joe proceeded to confess everything to the press and police.

As it turns out, the phone company did use an undercover agent to trap Joe, although it was not the Esquire reporter.

Ironically, security agents were alerted and began to compile a case against Joe because of one of his acts of love for the system: Joe had called an internal service department to report that he had located a group of defective long-distance trunks, and to complain again about the New Hampshire/Missouri WATS problem. Joe always liked Ma Bell’s lines to be clean and responsive. A suspicious switchman reported Joe to the security agents who discovered that Joe had never had a long-distance call charged to his name.

Then the security agents learned that Joe was planning one of his phone trips to a local switching office. The security people planted one of their agents in the switching office. He posed as a student switchman and followed Joe around on a tour. He was extremely friendly and helpful to Joe, leading him around the office by the arm. When the tour was over he offered Joe a ride back to his apartment house. On the way he asked Joe—one tech man to another—about “those blue boxes” he’d heard about. Joe talked about them freely, talked about his blue box freely, and about all the other things he could do with the phones.

The next day the phone-company security agents slapped a monitoring tape on Joe’s line, which eventually picked up an illegal call. Then they applied for the search warrant and broke in.

In court Joe pleaded not guilty to possession of a blue box and theft of service. A sympathetic judge reduced the charges to malicious mischief and found him guilty on that count, sentenced him to two thirty-day sentences to be served concurrently and then suspended the sentence on condition that Joe promise never to play with phones again. Joe promised, but the phone company refused to restore his service. For two weeks after the trial Joe could not be reached except through the pay phone at his apartment house, and the landlord screened all calls for him.

Phone-phreak Carl managed to get through to Joe after the trial, and re-

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