2600

12+1=13

August, 1984

BUT HOW DOES IT WORK?

How much do you really understand about the way your telephone works? Probably not as much as you should. Considering the amount of time most people spend on the contraptions, this is really quite a disgrace. Ask questions and make an effort to learn and you'll be the exception to the rule, which is basically: "Safety is Stupidity." Read on.

Wiring

Assuming a standard one-line fone, there are usually 4 wires that lead out of the fone set. These are standardly colored red, green, yellow, and black. The red and green wires are the two that are actually hooked up to your central office (CO). The yellow wire is sometimes used to ring different fones on a party line (i.e., one number, several families—found primarily in rural areas where they pay less for the service and they don't use the fone as much), otherwise the yellow is usually just ignored. On some two-line fones, the red and green wires are used for the first fone number and the yellow and black are used for the second line. In this case there must be an internal or external device that switches between the two lines and provides a hold function (such as Radio Shack's outrageously priced 2 line and hold module).

In telephony, the green and red wires are often referred to as tip (T) and ring (R), respectively. The tip is the more positive of the two wires. This naming goes back to the old operator cord boards where one of the wires was the tip of the plug and the other was the ring (of the barrel).

A rotary fone (a.k.a. dial or pulse) will work fine regardless of whether the red (or green) wire is connected to the tip (+) or ring (-). A touch-tone® fone is a different story, though. It will not work except if the tip (+) is the green wire. (Some of the more expensive DTMF fones do have a bridge rectifier which compensates for polarity reversal, however.) This is why under certain (non-digital) switching equipment you can reverse the red and green wires on a touch-tone® fone and receive free DTMF service. Even though it won't break dial tone, reversing the wires on a rotary line on a digital switch will cause the tones to be generated.

Voltages, Etc.

When your telephone is on-hook (i.e., hung up) there are approximately 48 volts of DC potential across the tip and ring. When the handset of a fone is lifted, a few switches close which cause a loop to be connected (known as the "local loop") between your fone and the CO. Once this happens, DC current is able to flow through the fone with less resistance. This causes a relay to energize which causes other CO equipment to realize that you want service. Eventually, you should end up with a dial tone. This also causes the 48 VDC to drop down into the vicinity of 12 volts. The resistance of the loop also drops below the 2500 ohm level, though FCC licensed telephone equipment must have an off-hook impedance of 600 ohms.

As of now, you are probably saying to yourself that this is all nice and technical but what the hell good is the information. Well, also consider that this drop in impedance is how the CO detects that a fone was taken off hook (picked up). In this way, they know when to start billing the calling number. Now what do you suppose would happen if a device such as a resistor or a zener diode was placed on the *called* party's line so that the voltage would drop just enough to allow talking but not enough to start billing? First off, the calling party would not be billed for the call but conversation could be pursued. Secondly, the CO equipment would think that the fone just kept on ringing. The Telco calls this a "no-no" (toll fraud to be more specific) while phone phreaks affectionately call this a mute a black box.

How These Boxes Are Built

It's really surprisingly easy to build a device such as a black box. If it weren't for the amazingly high morals inherent in today's society, you'd most certainly see more of them in use. Only two parts are needed: an SPST toggle switch and a 10,000 ohm (10 K), ½ watt resistor. Any electronics store should stock these parts.

A person would then cut 2 pieces of wire (about 6 inches long) and attach one end of each wire to one of the terminals on the switch. Then the K500 (standard desk fone) would be turned upside down and the cover taken off. A wire would be located and disconnected from its terminal. The switch would then be brought out the rear of the fone and the cover replaced. Labelling the switch usually comes next. A position where one receives a dial tone when picking up is marked "NORMAL". The other side is, naturally, "FREE".

Making Them Work

When phriends call (usually at a prearranged time), the person with the black box quickly lifts and drops the receiver as fast as possible. This stops the ringing (if not it must be done again) without starting the billing. This must be done within less than one second. The phone can then be picked up with the switch in the "FREE" position. Most phone phreaks are wise enough to keep their calls under 15 minutes in length, greatly minimizing the odds of getting caught.

Some interesting points: (1) If someone picks up an extension in the called party's house and that fone is not set for "FREE", then billing will start. (2) An old way of signalling a phriend that you want to call him is to make a collect call to a non-existent person in the house. Since the phriend will (hopefully) not accept the charges, he will know that you are about to call and thus prepare the black box (or vice versa). (3) The phone company can detect black boxes if they suspect one on the line. This is done due to the presence of AC voice signal at the wrong DC level! (4) The black box will not work under ESS or other similar digital switches since ESS does not connect the voice circuits until the fone is picked up (and billing starts). Instead, ESS uses an "artificial" computer generated ring.

Ringing

To inform a subscriber of an incoming call, the telco sends 90 volts (PK) of pulsing DC down the line (at around 15 to 60 Hz; usually 20 Hz). In most fones this causes a metal armature to be attracted alternately between two electro-magnets thus striking 2 bells. Of course, the standard bell (patented in 1878 by Tom A. Watson) can be replaced by a more modern electronic bell or signalling device.

Also, you can have lights and other similar devices in lieu of (or in conjunction with) the bell. A simple neon light (with its corresponding resistor) can simply be connected between the red and green wires (usually L1 and L2 on the network box) so that it lights up on incoming calls.

Be advised that 90 VDC can give quite a shock. Exercise extreme caution if you wish to further pursue these topics.

Also included in the ringing circuit is a capacitor to prevent the DC current from interfering with the bell (a capacitor will pass AC and pulsing DC while it will prevent straight DC from flowing—by storing it).

Another reason that telcos hate black boxes is because ringing uses a lot of common-control equipment in the CO, which use a lot of electricity. Thus the ringing generators are being tied up while a free call is being made. Usually calls that are allowed to "ring" for a long period of time will be construed as suspicious. Some offices may be set up to drop a trouble card for long periods of ringing and then a "no-no" detection device may be placed on the line.

Incidentally, the term "ring trip" refers to the CO process involved to stop the AC ringing signal when the calling fone goes off hook.

It is suggested that you actually dissect fones to help you better understand them (regardless of whether or not you want to build any devices). It will also help you to better understand the concepts here you actually prove them to yourself. For example, actually take the voltage readings on your fone line (any simple multi-tester (a must) will do). Phreaking and/or learning is an interactive process, not a passive one!

(Any questions on the above? Write us and we'll try to answer them.)

PRIVACY LOST

The Rise of the Computer State
by David Burnham
w/foreword by Walter Cronkite
Vantage Books $6.95 paperback   273 pp.

Several years ago on *Sixty Minutes*, a segment was presented where all of the checks that one person had written in his lifetime were examined, and then a fairly accurate portrait of the person's life was painted by the discrete bits of information. Information like this is called transactional information and we leave huge amounts of it behind as we live our lives, whether in tons of paper or megabytes of data.

In *The Rise of the Computer State*, David Burnham says that an event as demonstrated by the *Sixty Minutes* team could happen and many similar ones do occur. He surveys many of the ways that computers and technology can be used to intrude upon our privacy; the governmental mandates for such intrusion; and how, in general, computer abuses have affected history.

Burnham begins with a review of computer history and the importance of computers on our lives. While always implying a global connection, he concentrates upon the United States where "industries engaged in the processing of information... now generate about half the GNP." Later Burnham brings up legal points which are supported by examples. He also discusses legislative battles and presidential directives both for and against the public good. Overall, *The Rise of the Computer State* reveals in technical and ethical terms how close we are to Orwell's technocracy.

Christopher Evans, a psychologist and computer scientist said that if during the 30 years from 1945 to 1975, the automobile had developed as fast as the computer, the Rolls Royce would cost $2.75, would have enough power to push the Q.E. II across the Atlantic, and would get 3 million miles to the gallon.

The computer has that amazing ability to quickly and efficiently move and sort through vast amounts of information, and this is why they are being used in all aspects of society including the FBI, police, banks, phone companies, and credit companies. They are used by most businesses for payroll, personnel, inventory, accounting. They are used by most government agencies including the IRS, FBI, CIA, SSA, NSA, HEW, FRB, and a large number of others. In fact, he devotes an entire interesting chapter on the National Security Agency (NSA) which was obviously written before *The Puzzle Palace*, a rather thorough examination of the NSA, was published. (A future issue of *2600* will look at the NSA.)

Computers are used to compile lists, store data, pay employees, transfer funds, make airplane reservations or phone calls, communicate, write letters, address envelopes, detect incoming ICBM's, price goods at supermarkets and department stores, tell time, and keep track of America's airplanes and trains to prevent them from crashing. There are literally millions of things computers can do to benefit humankind.

But the most amazing of these computers are controlled by big government or a few corporations. Transactional information about our lives is often bought and sold and traded without our permission. In bank computers lie copies of the checks we wrote. In our hospital computers are our medical records. In many states, computer files are kept on all prescriptive medicine. In many law enforcement computers lie arrest and conviction records, often incomplete or inaccurate as Burnham points out.

• Our movements can be kept track of by looking at our phone charges, airline, bus, train, and car rental records, or our gas receipts.

• In Pittsfield, Mass., people's buying habits are computerized and compared to the special dose of commercials that are sent to only their television sets. If we get supermarket credit cards, then every item, all of our individual buying habits, can be examined.

• Information from the 1940 census was used to round up Japanese into concentration camps. If another thoughtless government wanted to do something again, it won't be hard.

• In Los Angeles there is a registry of "undesirable" tenants that can be accessed for a fee. The information is often just heresay or the opinion of a past landlord. If the information is negative, the potential tenant is turned down.

• The FBI possesses the fingerprints of 66 million people in its criminal or civil identification files.

Burnham brings up the topic of criminal records a lot—about how past arrests and convictions can follow a person, even if a case is dismissed. This information is available to law enforcement agencies, government personnel departments, and private companies. These databases of criminal records, which only one out of every five states have ever checked for accuracy, were created in order to apprehend criminals. But if these records are used to keep suspected criminals or ex-cons out of governmental and private jobs and thus keep them unemployed, these people are practically forced to return to crime.

By cross matching files, politicians can locate key groups to appeal to in order to make decisions or win elections. By cross matching files, likely suspected communists can be systematically tortured, or customers for a new store can get junk mail designed just for them.

In the can-anything-be-done chapter, we are left to hope that some laws or presidential orders are created to stop cross matching of information between government agencies. There are examples where things are done (and undone again) in an effort to preserve privacy, but as we see much information about us is public. Until recently, the selective service was aware of who got free ice cream from Farrow's (*2600*, p. 1-45). It won't be long until all of the Flintstone vitamin peddlers will be buying up the list of the cabbage patch parents from Coleco. Companies are always buying information about us to gain an economic advantage. Business controls money and hence information. This information gives them direct power and often a marketable item. TRW and other lesser known credit companies sell information to other businesses for about a buck a report, but to check your own record in order to see if the report is accurate costs $12. Mailing lists pass hands like stocks on Wall Street.

But are we threatened now? When it comes to criminal records, IRS, and credit stuff the info is being used widely. The federal government is tightening up on documents it makes public. But often Mr. Burnham is telling us what is possible which is not far from the actual. He doesn't stress the importance that the Freedom of Information Act had which is being gutted by the Reagan Administration.

What Mr. Burnham could have done to make his case even more effective is to include actual examples of the vast personal data and create a small autobiography based on his own credit history, bank records, FBI files, criminal records, motor vehicle records, college records, and other similar sources. He could have gotten some experts to examine all of his transactional information and then compare it to himself. But it's all right for Burnham not to do this, because he suggests to us that such a thing can be done.

Burnham goes on and on citing legal abuses, privacy intrusions, and political and economic manipulation. The book reads like those old TRW ads: "Imagine a day when..." and it ends the same way: "... That day is today. Write to us—we'll tell you all about it." Burnham tells us almost all about "it" too. He does not mention the danger to a computer state where a disgruntled employee or little kiddie at a terminal can crash a huge system permanently, or a clever sadist can create a viral program that can spread throughout a database and wipe out file after file! Burnham does not mention the technological pioneers who hack and explore and understand the world that is approaching and encroaching and who warn others of the danger. Mr. Burnham would appreciate the work of some of the people like that, just as we can appreciate the warnings in his book about the power of the technological elite.

The Rise of the Computer State represents one of the many books that should be read to prepare for the future as well as the present. Mr. Burnham has managed to condense an immense amount of information on the power and threat of computers and data collecting agencies. His book is well researched, but he needs that extra something to retain the sympathy of those who have "nothing to hide" and the interest of those who cannot relate to terms like "dehumanization" and "values". *The Rise of the Computer State* startles one with a slap of hidden reality, and this is what we need now.
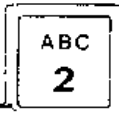
Big Brother No Longer Watching Miami

Associated Press

City officials who stirred up visions of George Orwell's "Big Brother" when they installed video cameras to detect street crime have decided the project wasn't such a good idea after all.

So three years and almost $300,000 later, the city has abandoned its "Television Police Protection" system, saying it failed to record one crime.

The city had the cameras installed in February 1982 but for numerous technical reasons the system wasn't turned on until that June.

The project called for 20 cameras to be mounted on a rotating basis in 100 camera housings mounted on poles, thus keeping criminals off guard.

Another larger camera was mounted atop a 14-story building on Lincoln Road to sweep the length of both streets for a broad overview.

But the system had trouble. "We had continual maintenance problems with constant adjustment of the microwave," Police Chief Kenneth Glassman said. One civilian made so much fuss about police watching the monitors and not patrolling the streets that the department took police off the project. Another problem was in lack of interest from civilian volunteers assigned to watch the monitors. Many times, even the few working monitors went unwatched.

Computers Seized as Summer Games Begin

Long Island Newsday

The home computers of four Huntsville, Alabama teenagers were seized by the FBI last month after an illegal tap into NASA computers. The unauthorized taps, according to the FBI, destroyed records and blocked scientists from using the computers. The FBI seized computers, printers, floppy disks, and software that allegedly were used to tap into two computers at NASA's Marshall Space Flight Center. They contained no classified information, according to NASA officials.

Cecil Moses, special agent in charge of the FBI's Birmingham office, said an investigation is continuing. He said no charges have been filed, but may be later.

House: Hacking is Bad

Combined News Sources

The House of Representatives has voted 395-0 for a bill that would make it a federal crime to gain access to computer memory banks without permission. The legislation would combine the attack on hackers with an attempt to stop those who manufacture or possess fraudulent credit cards or use someone's credit card number without his or her knowledge.

More PC Jr's., Less Z-100's for Soviets

The New York Times

The United States, 13 NATO allies and Japan have jointly agreed to impose broad, new export controls on the sale of small computers and sophisticated telephone equipment to nations of the Soviet bloc. The agreement comes after two and a half years of difficult negotiations.

The accord, which was reached at the urging of the U.S., expands the existing NATO embargo on the sale of large sophisticated computers to include smaller models that could have military applications. This means that many of the more expensive personal computers now available at retail outlets in the United States will be subject to export controls in the future.

Also, the agreement sets maximum levels of technological sophistication for digital switching and other telephone equipment supplied to the Eastern bloc by Western corporations.

The Reagan Administration took the most restrictive line throughout the embargo review talks, diplomats say, with the Europeans and Japanese advocating a more liberal approach to trade with the Communist world. The U.S., though, did agree to liberalize the sale of some less advanced computers to the Eastern bloc countries in return for joint Western restrictions on the sale of certain powerful small computers.

In addition, the Western powers have undertaken to ban the export of "ruggedized" computers, built to withstand rough treatment and thus suitable for battlefield use.

Federal Express Offers "E-Mail"

Time

Memphis-based Federal Express, which pioneered next-day private postal service, is now promising even greater speed with ZapMail, its long-awaited version of electronic mail. For as little as $25 for a missive of five pages or less and up to $50 for a maximum of 20 pages, Federal Express will zap letters and documents across the U.S. within two hours. Unlike other outfits, Federal Express does not require its customers to use computer keyboards to enter messages. Instead a courier comes and picks it up, takes it to a Federal Express office, where clerks feed it into a document scanner for transmission over land lines. At the receiving Federal Express office, a laser printer will spew out copies for couriers to deliver immediately. [No, this is not electronic mail in the bona fide sense.] The firm even vows to give full refunds if documents are late.

ITT Wiping Out Fee

Associated Press

On September 1, ITT will drop the monthly service fee it charges users of its long-distance telephone service. The fees currently are $5 a month for residential customers and $10 a month for business users. ITT also said it would introduce discounts for high-volume callers, and said its residential customers would be able to reach any telephone in the continental United States. Previously, only ITT's business customers had nationwide calling. ITT is ranked eighth among long-distance carriers with about 125,000 customers.

800 Directories Now Available

A Friendly Information Operator

Starting in the middle of September, AT&T will at last start offering directories to toll-free numbers. Previously, the only way to get such a directory was through scanning, trashing, or buying a directory printed by an outside company. There are two versions being offered. One is for people and sells for $6.25 while the other is for businesses and sells for $8.75. Info can be had by calling 8002424634. If that doesn't work, from your area, call 8005551212 and demand an explanation. Billing won't be done through your phone bill, as one might expect. "We don't have *that* kind of capability yet," they said to us.

Ice Cream Chain Aides Selective Service

The New York Times

The Selective Service System has defended its use of a mailing list compiled by a national chain of ice cream stores to advise young men that they were liable for draft registration.

However, the government will be returning the computerized list of 167,000 names to the company.

Alexander Hehmeyer, executive vice president and general counsel of Farrell's Ice Cream Parlor Restaurant, a chain of almost 100 ice cream stores, said both he and the company were "upset and outraged" by this "act of big brother government."

For many years the retail outlets of Farrell's have had customers fill out a birthday form so that they would get birthday cards from the company entitling them to free ice cream sundaes. The Selective Service bought the Farrell's list in 1983 from a list broker in New Jersey. Last October, the system began using the list to mail 1,500 to 3,500 warning cards a month to young men whose listed birthdays indicated they were about to turn 18.

Besides commercial lists, the Selective Service relies on state agencies that license drivers and the Defense Department, which compiles a list of high school graduates.

1-45

BE NICE TO YOUR TELCO

Over the years, some bad things have happened to my telephone. Once a silly caller terminated his call but did not hang up. I called the phone company (New York Telephone) from a neighbor's phone, but they said they were unable to do anything. They said they could not even tell me where the caller's phone was located. Acting on a hunch, I cruised my neighborhood looking for pay-phones. I found the phone I was interested in, but it was in a locked building, and I clearly saw the receiver dangling. The next morning I was able to hang up the phone, and my phone service was back to normal.

Another time the clever sewer workers hauled out my trunk and knocked out my phone. It was restored, but I was not getting any incoming service after that. The even more clever phone man came over, dialed the Automatic Number Identification, and lo and behold I had a new number. They fixed that too.

My phone company has been generally nice to me even though I played some jokes on them. I suggest you do not do the following, as I have done in the past:

- Fold, spindle, and mutilate your billing card.

- Punch extra holes in it to increase your bill $10,000 or more.
- Cross out the line of numbers in magnetic ink at the bottom of your bill or check.
- Make out your check to a penny less or a penny more than what is due.
- Order as many free phone books for as many areas as possible.
- Order phone books for obscure areas covered by private phone companies.
- When you have free checking, pay with more than one check (10 or 20 per phone bill, for example).
- Write with thick black marker the word **FUCK** at the bottom of your check where the space for memos is located.

These activities cause the phone company to put more work into serving you. It causes them to process your bill by *hand*, to spend money printing and mailing phone books, and to read your unfriendly message. Don't do this or your rates will go up. *(Please contact 2600 IMMEDIATELY if you know of other abuses currently making the rounds.)*

READER FEEDBACK

Dear 2600:

Here's the latest info on phone scramblers.

Phone scramblers/descramblers are a type of device which allows one to communicate over the phone without anyone being able to hear your conversation in between the source and destination of the call. They are perfectly legal to own and operate, but there is one catch.

(The following information was obtained from a phreak who worked with an ex-CIA agent—to verify the validity of this statement.) The CIA, working in conjunction with AT&T, has the right to legally tap up to 600 phone lines in the U.S. The way that they are able to do this is that Bell Telephone can "test" your line any time it likes to see if it is working in proper order. Under the new ESS telephone system, finding scramblers/descramblers is very easy and once you are found, an instant file is generated on both the sender and the receiver of the call. They (CIA) will also do their best to try and crack your scrambler code. I have been told that they are extremely good at this. My advice to those of you out there thinking about building such a device is to seek other ways and for those of you currently using them to stop. Using these devices is simply waving a flag to AT&T and CIA saying, "I've got something important to say, and I don't want you to hear it."

Agent Orange

Dear Agent:

Thanks for the info and for the warning. While you're most probably correct about the powers that be taking a strong interest in any person using such a device, it seems absurd that we should have to constantly live in fear of having our privacy stripped, simply because we desire a little privacy!

We face some real problems in the near future if surveillance continues to grow and not enough is done by individuals to curb it. Technology is a deadly weapon *for anyone*.

Stay alive, awake, and indignant—you can't lose. Thanks for writing.

Dear 2600:

I just had a horrible experience. As a faithful subscriber to this magazine, I keep all of my copies in a special loose-leaf book. This comes in very handy because they're not scattered all over the house, like most other things I possess. But last week, I dropped my loose-leaf book on the floor and of course it opened, scattering all of the pages here and there. Now, I have no trouble piecing together the first page of each issue, but I can't remember *where* the other ones belong, since they don't have any date on them! Can you help me piece them back

together and take steps to ensure that this tragedy doesn't reoccur in the future? Thanks.

Miserable in Philadelphia

Dear MIP:

You've raised a very good point, one which we overlooked completely. While most of our stories are essentially "timeless", it does help to know when a certain article was printed. For this reason, we have begun (as of this issue) to number our pages in manual format. For instance, this is page 1-46 which means Volume 1, Page 46 of the year. We hope this eases the suffering. As far as previous issues, we will be coming out with a summary sheet towards the end of the year which we'll send to all subscribers. We'll try to get yours out early. And if anyone else knows of something we've overlooked or wants to make a suggestion, please write.

Dear 2600:

I'm working on a book that gives the hackers' viewpoint and explains why he/she penetrates computer systems. I believe that even though I'm currently incarcerated, I could get a publisher to publish such a book.

To get this viewpoint I need help. I need the input of people who are active—the more the better. I also need the views of people who trash systems too. All I've ever seen is the viewpoint of the law enforcement agencies, media, business, and hackers that are caught etc. etc. etc. It's time your views were heard.

What I would do is just edit letters etc. sent to me and use these as basis for the book. By edit I mean pick the ones to be used in their entirety.

People interested in helping me with this can write to me under handles or pen names at the following address. *Do not use your real name or address as my mail is censored by officials here.*

John Gregg
Box 1000
Marion, IL 62959

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A CORRECTION

In our last issue, we erroneously gave our MCI Mail ID as 2600. We didn't think there would be any problem in obtaining that ID, but there was. The MCI Mail computer apparently can't handle all-digit usernames. Our MCI Mail ID therefore, is 26HUNDRED. Write to us there or at our mailing address or our new telex address, all of which are listed on page one. (Especially write to us if you can think of any new places to have an address!)

1-46

201	201-676-7070		519	416-922-6686
202	202-384-9620		601	601-961-0877
203	203-789-6815		602	303-293-2333
204	204-949-0900		603	617-787-5300
205	205-988-7000		604	*CLOSED 9/82
206	206-382-8000		605	402-345-0600
207	617-787-5300		606	502-583-2861
208	303-293-2333		607	518-471-8111
209	415-546-0118		608	414-252-8932
212	518-471-8111		609	201-676-7070
213	213-501-3255		612	402-345-0600
214	214-698-9711		613	416-922-6686
215	412-633-5600		614	614-464-2345
216	614-464-2345		615	615-373-5781
217	217-525-7000		616	313-223-8690
218	402-345-0600		617	617-787-5300
219	317-265-4834		618	217-525-7000
301	301-534-1168		619	213-501-3255
302	412-633-5600		701	402-345-0600
303	303-293-2333		702	415-546-0118
304	304-344-8041		703	804-747-1411
305	912-784-0440		704	912-784-9111
306	306-347-2878		705	416-922-6686
307	303-293-2333		706	****N/A*****
308	402-345-0600		707	415-546-0107
309	217-525-7000		708	************
312	312-769-9600		709	****N/A*****
313	313-223-8690		712	402-345-0600
314	314-726-7142		713	713-820-4112
315	518-471-8111		714	213-501-3255
316	816-275-2782		715	608-252-6932
317	317-265-4834		716	518-471-8111
318	504-245-5330		717	412-633-5600
319	402-345-0600		718	518-471-8111
401	617-787-5300		719	************
402	402-345-0600		801	303-293-2333
403	403-425-2652		802	617-787-5300
404	912-784-0440		803	912-784-0440
405	405-236-6121		804	304-344-8040
406	303-293-2333		805	415-546-0118
407	************		806	512-828-2501
408	415-543-6374		807	416-922-6686
409	713-820-4112		808	212-334-4336
412	412-633-5600		809	212-334-4336
413	617-787-5300		812	317-265-4834
414	608-252-6932		813	813-228-7871
415	415-546-0107		814	412-633-5600
416	416-922-6686		815	217-525-7000
417	314-726-7142		816	816-275-2782
418	514-287-5151		817	214-698-9711
419	614-464-2345		818	213-501-3255
501	405-236-6121		819	514-287-5151
502	502-583-2861		901	615-373-5781
503	303-241-3440		902	902-421-4110
504	504-245-5330		903	****N/A*****
505	303-293-2333		904	912-784-0440
506	506-648-3041		905	****N/A*****
507	402-345-0600		906	313-223-8690
508	************		907	****N/A*****
509	206-382-8000		908	************
512	512-828-2501		909	************
513	614-464-2345		912	912-784-0440
514	514-287-5151		913	816-275-2782
515	402-345-0600		914	518-471-8111
516	518-471-8111		915	512-828-2501
517	313-232-8690		916	415-546-0118
518	518-471-8111		917	************
			918	405-236-6121
			919	912-784-0440

"We know who you are. We know what you want. We've got YOUR number."

(Bermuda Only)

200 —	201 —	202 —	203 —	204 —	205 —	206 —	207 —	208 —	209 —
210 —	211 —	212 —	213 —	214 —	215 —	216 —	217 —	218 —	219 —
220 —	221 —	222 —	223 —	224 —	225 —	226 —	227 —	228 —	229 —
230 —	231 —	232 —	233 —	234 —	235 —	236 —	237 —	238 —	239 —
240 —	241 —	242 —	243 —	244 —	245 —	246 —	247 —	248 —	249 —
—	251 —	252 —	253 —	254 —	255 —	256 —	257 —	258 —	259 —
260 —	261 —	262 —	263 —	264 —	265 —	266 —	267 —	268 —	269 —
270 —	271 —	272 —	273 —	274 —	275 —	276 —	277 —	278 —	279 —
280 —	281 —	282 —	283 —	284 —	285 —	286 —	287 —	288 —	289 —
290 —	291 —	292 —	293 —	294 —	295 —	296 —	297 —	298 —	299 —
300 —	301 —	302 —	303 —	304 —	305 —	306 —	307 —	308 —	309 —
310 —	311 —	312 —	313 —	314 —	315 —	316 —	317 —	318 —	319 —
320 —	321 —	322 —	323 —	324 —	325 —	326 —	327 —	328 —	329 —
330 —	331 —	332 —	333 —	334 —	335 —	336 —	337 —	338 —	339 —
340 —	341 —	342 —	343 —	344 —	345 —	346 —	347 —	348 —	349 —
350 —	351 —	352 —	353 —	354 —	355 —	356 —	357 —	358 —	359 —
360 —	361 —	362 —	363 —	364 —	365 —	366 —	367 —	368 —	369 —
370 —	371 —	372 —	373 —	374 —	375 —	376 —	377 —	378 —	379 —
380 —	381 —	382 —	383 —	384 —	385 —	386 —	387 —	388 —	389 —
390 —	391 —	392 —	393 —	394 —	395 —	396 —	397 —	398 —	399 —
400 —	401 —	402 —	403 —	404 —	405 —	406 —	407 —	408 —	409 —
410 —	411 —	412 —	413 —	414 —	415 —	416 —	417 —	418 —	419 —
420 —	421 —	422 —	423 —	424 —	425 —	426 —	427 —	428 —	429 —
430 —	431 —	432 —	433 —	434 —	435 —	436 —	437 —	438 —	439 —
440 —	441 —	442 —	443 —	444 —	445 —	446 —	447 —	448 —	449 —
450 —	451 —	452 —	453 —	454 —	455 —	456 —	457 —	458 —	459 —
460 —	461 —	462 —	463 —	464 —	465 —	466 —	467 —	468 —	469 —
470 —	471 —	472 —	473 —	474 —	475 —	476 —	477 —	478 —	479 —
480 —	481 —	482 —	483 —	484 —	485 —	486 —	487 —	488 —	489 —
490 —	491 —	492 —	493 —	494 —	495 —	496 —	497 —	498 —	499 —
500 —	501 —	502 —	503 —	504 —	505 —	506 —	507 —	508 —	509 —
510 —	511 —	512 —	513 —	514 —	515 —	516 —	517 —	518 —	519 —
520 —	521 —	522 —	523 —	524 —	525 —	526 —	527 —	528 —	529 —
530 —	531 —	532 —	533 —	534 —	535 —	536 —	537 —	538 —	539 —
540 —	541 —	542 —	543 —	544 —	545 —	546 —	547 —	548 —	549 —
550 —	551 —	552 —	553 —	554 —	555 —	556 —	557 —	558 —	559 —
560 —	561 —	562 —	563 —	564 —	565 —	566 —	567 —	568 —	569 —
570 —	571 —	572 —	573 —	574 —	575 —	576 —	577 —	578 —	579 —
580 —	581 —	582 —	583 —	584 —	585 —	586 —	587 —	588 —	589 —
590 —	591 —	592 —	593 —	594 —	595 —	596 —	597 —	598 —	599 —
600 —	601 —	602 —	603 —	604 —	605 —	606 —	607 —	608 —	609 —
—	611 —	612 —	613 —	614 —	615 —	616 —	617 —	618 —	619 —
620 —	621 —	622 —	623 —	624 —	625 —	626 —	627 —	628 —	629 —
630 —	631 —	632 —	633 —	634 —	635 —	636 —	637 —	638 —	639 —
640 —	641 —	642 —	643 —	644 —	645 —	646 —	647 —	648 —	649 —
650 —	651 —	652 —	653 —	654 —	655 —	656 —	657 —	658 —	659 —
660 —	661 —	662 —	663 —	664 —	665 —	666 —	667 —	668 —	669 —
670 —	671 —	672 —	673 —	674 —	675 —	676 —	677 —	678 —	679 —
680 —	681 —	682 —	683 —	684 —	685 —	686 —	687 —	688 —	689 —
690 —	691 —	692 —	693 —	694 —	695 —	696 —	697 —	698 —	699 —
700 —	701 —	702 —	703 —	704 —	705 —	706 —	707 —	708 —	709 —
710 —	711 —	712 —	713 —	714 —	715 —	716 —	717 —	718 —	719 —
720 —	721 —	722 —	723 —	724 —	725 —	726 —	727 —	728 —	729 —
730 —	731 —	732 —	733 —	734 —	735 —	736 —	737 —	738 —	739 —
740 —	741 —	742 —	743 —	744 —	745 —	746 —	747 —	748 —	749 —
750 —	751 —	752 —	753 —	754 —	755 —	756 —	757 —	758 —	759 —
760 —	761 —	762 —	763 —	764 —	765 —	766 —	767 —	768 —	769 —
770 —	771 —	772 —	773 —	774 —	775 —	776 —	777 —	778 —	779 —
780 —	781 —	782 —	783 —	784 —	785 —	786 —	787 —	788 —	789 —
790 —	791 —	792 —	793 —	794 —	795 —	796 —	797 —	798 —	799 —
800 —	801 —	802 —	803 —	804 —	805 —	806 —	807 —	808 —	809 —
810 —	811 —	812 —	813 —	814 —	815 —	816 —	817 —	818 —	819 —
820 —	821 —	822 —	823 —	824 —	825 —	826 —	827 —	828 —	829 —
830 —	831 —	832 —	833 —	834 —	835 —	836 —	837 —	838 —	839 —
840 —	841 —	842 —	843 —	844 —	845 —	846 —	847 —	848 —	849 —
850 —	851 —	852 —	853 —	854 —	855 —	856 —	857 —	858 —	859 —
860 —	861 —	862 —	863 —	864 —	865 —	866 —	867 —	868 —	869 —
870 —	871 —	872 —	873 —	874 —	875 —	876 —	877 —	878 —	879 —
880 —	881 —	882 —	883 —	884 —	885 —	886 —	887 —	888 —	889 —
890 —	891 —	892 —	893 —	894 —	895 —	896 —	897 —	898 —	899 —
900 —	901 —	902 —	903 —	904 —	905 —	906 —	907 —	908 —	909 —
910 —	911 —	912 —	913 —	914 —	915 —	916 —	917 —	918 —	919 —
920 —	921 —	922 —	923 —	924 —	925 —	926 —	927 —	928 —	929 —
930 —	931 —	932 —	933 —	934 —	935 —	936 —	937 —	938 —	939 —
940 —	941 —	942 —	943 —	944 —	945 —	946 —	947 —	948 —	949 —
950 —	951 —	952 —	953 —	954 —	955 —	956 —	957 —	958 —	959 —
960 —	961 —	962 —	963 —	964 —	965 —	966 —	967 —	968 —	969 —
—	971 —	972 —	973 —	974 —	975 —	976 —	977 —	978 —	979 —
980 —	981 —	982 —	983 —	984 —	985 —	986 —	987 —	988 —	989 —
990 —	991 —	992 —	993 —	994 —	995 —	996 —	997 —	998 —	999 —

The Hackers Guide to Area Code

C — Crossbar Office
E — Electronic or Digital Office
S — Step Office

A — AT&T
G — GTE
I — ITT
N — Northern Telecom

Date Completed _____