

## TELCOM6.TXT

Extracting [Basic6.doc] ...

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=BASIC TELECOMMUNICATIONS=  
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### Part VI

#### Preface:

This article will focus primarily on the standard Western Electric single-slot coin telephone (aka fortress fone) which can be divided into 3 types:

- Dial-Tone First (DTF)
- Coin-First (CF): (ie, it wants your \$ before you receive a dial tone)
- Dial Post-Pay Service (PP): you pay after the party answers

#### Depositing Coins (Slugs):

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Once you have deposited your slug into a fortress, it is subjected to a gamut of tests.

The first obstacal for a slug is the magnetic trap. This will stop any light-weight magnetic slugs and coins. If it passes this, the slug is then clied as a n, dime, or quarter. Each slug is then checked for appropriate size and weight. If these tests are passed, it will then travel through a nickel, dime, or quarter magnet as appropriate. These magnets set up an eddy current effect which causes coins of the appropriate characteristics to slow down so they will follow the correct trajectory. If all goes well, the coin will follow the correct path (such as bouncing off of the nickel anvil) where it will hopefully fall into the narrow accepted coin channel.

The rather elaborate tests that are performed as the coin travels down the coin chute will stop most slugs and other undesirable coins, such as pennies, which must then be retrieved using the coin release lever.

If the slug miraculously survives the gamut, it will then strike the appropriate totalizer arm causing a ratchet wheel to rotate once for every 5-cent increment (eg, a quarter will cause it to rotate 5 times).

The totalizer then causes the coin signal oscillator to readout a dual-frequency signal indicating the value deposited to ACTS (a computer) or the

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TSPS operator. These are the same tones used by phreaks in the infamous red boxes.

For a quarter, 5 beep tones are outputted at 12-17 pulses per second (PPS). A dime causes 2 beep tones at 5 - 8.5 PPS while a nickel causes one beep tone at 5 - 8.5 PPS. A beep consists of 2 tones: 2200 + 1700 Hz.

A relay in the fortress called the "B relay" (yes, there is also an 'A relay') places a capacitor across the speech circuit during totalizer read-out to prevent the "customer" from hearing the red box tones.

In older 3 slot phones: one bell (1050 -1100 Hz) for a nickel, two bells for a dime, and one gong (800 Hz) for a quarter are used instead of the modern dual-frequency tones.

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=TSPS & ACTS=  
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While fortresses are connected to the CO of the area, all transactions are handled via the Traffic Service Position System (TSPS). In areas that do not have ACTS, all calls that require operator assistance, such as calling card and collect, are automatically routed to a TSPS operator position.

In an effort to automate fortress service, a computer system known as Automated Coin Toll Service (ACTS) has been implemented in many areas. ACTS listens to the red box signals from the fones and takes appropriate action. It is ACTS which says, "Two dollars please (pause) Please deposit two dollars for the next ten seconds" (and other variations). Also, if you talk for more than three minutes and then hang-up, ACTS will call back and demand your money. ACTS is also responsible for Automated Calling Card Service.

ACTS also provide trouble diagnosis for craftspeople (repairmen specializing in fortresses). For example, there is a coin test which is great for tuning up red boxes. In many areas this test can be activated by dialing 09591230 at a fortress (thanks to Karl Marx for this information). Once activated it will request that you deposit various coins. It will then identify the coin and output the appropriate red box signal. The coins are usually returned when you hang up.

To make sure that there is actually money in the fone, the CO initiates a "ground test" at various times to determine if a coin is actually in the fone. This is why you must deposit at least a nickel in order to use a red box!

Green Boxes:  
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Paying the initial rate in order to use a red box (on certain fortresses)

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left a sour taste in many red boxer's mouths thus the GREEN BOX was invented. The green box generates useful tones such as COIN COLLECT, COIN RETURN, and RINGBACK. These are the tones that ACTS or the TSPS operator would send to the CO when appropriate. Unfortunately, the green box cannot be used at a fortress station but it must be used by the CALLED party.

Here are the tones:

COIN COLLECT 700 + 1100 Hz  
COIN RETURN 1100 + 1700 Hz  
RINGBACK 700 + 1700 Hz

Before the called party sends any of these tones, an operator released signal should be sent to alert the MF detectors at the CO. This can be accomplished by sending 900 + 1500 Hz or a single 2600 Hz wink (90 ms) followed by a 60 ms gap and then the appropriate signal for at least 900 ms. Also, do not forget that the initial rate is collected shortly before the 3 minute period is up.

Incidentally, once the above MF tones for collecting and returning coins reach the CO, they are converted into an appropriate DC pulse (-130 volts for return & +130 volts for collect). This pulse is then sent down the tip to the fortress. This causes the coin relay to either return or collect the coins.

The alleged "T-Network" takes advantage of this information. When a pulse for COIN COLLECT (+130 VDC) is sent down the line, it must be grounded somewhere. This is usually either the yellow or black wire. Thus, if the wires are exposed, these wires can be cut to prevent the pulse from being grounded. When the three minute initial period is almost up, make sure that the black & yellow wires are severed; then hang up, wait about 15 seconds in case of a second pulse, reconnect the wires, pick up the fone, hang up again, and if all goes well it should be "JACKPOT" time.

Physical Attack:

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A typical fortress weighs roughly 50 lbs. with an empty coin box. Most of this is accounted for in the armor plating. Why all the security? Well, Bell contributes it to the following:

"Social changes during the 1960's made the multislot coin station a prime target for: vandalism, strong arm robbery, fraud, and theft of service. This brought about the introduction of the more rugged single slot coin station and a new environment for coin service."

As for picking the lock, I will quote Mr. Phelps: "We often fantasize about 'picking the lock' or 'getting a master key.' Well, you can forget about it. I don't like to discourage people, but it will save you from wasting alot of

your time--time which can be put to better use (heh, heh)."

As for physical attack, the coin plate is secured on all four side by hardened steel bolts which pass through two slots each. These bolts are in turn interlocked by the main lock.

One phreak I know did manage to take one of the 'mothers' home (which was attached to a piece of plywood at a construction site; otherwise, the permanent ones are a bitch to detach from the wall!). It took him almost ten hours to open the coin box using a power drill, sledge hammers, and crow bars (which was empty -- perhaps next time, he will deposit a coin first to hear if it slushes down nicely or hits the empty bottom with a clunk.)

Taking the fone offers a higher margin of success. Although this may be difficult often requiring brute force and there has been several cases of back axles being lost trying to take down a fone! A quick and dirty way to open the coin box is by using a shotgun. In Detroit, after ecologists cleaned out a municipal pond, they found 168 coin phone rifled.

In colder areas, such as Canada, some shrewd people tape up the fones using duct tape, pour in water, and come back the next day when the water will have froze thus expanding and cracking the fone open.

In one case, "unauthorized coin collectors" where caught when they brought \$6,000 in change to a bank and the bank became suspicious...

At any rate, the main lock is an eight level tumbler located on the right side of the coin box. This lock has 390,625 possible positions ( $5^8$ , since there are 8 tumblers each with 5 possible positions) thus it is highly pick resistant! The lock is held in place by 4 screws. If there is sufficient clearance to the right of the fone, it is conceivable to punch out the screws using the drilling pattern below (provided by Alexander Mundy in TAP #32):

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      !!      ^
      !!      !
! 1- 3/16 " !!      !
!<--- --->!!      1-1/2"
-----!
! !      !! !      !
! (+)      (+)-! -----
---!      !! !      ^
! !      !! !      !
! !      (Z)    !! !      !
! !      !! !    2-3/16"
---!      !! !      !
! (+)      (+) !      !
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!      !! !      !
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!!
!!
(Z) Keyhole  (+) Screws
!!
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After this is accomplished, the lock can be pushed backwards disengaging the lock from the cover plate. The four bolts of the cover plate can then be retracted by turning the boltworks with a simple key in the shape of the hole on the coin plate (see diagram below). Of course, there are other methods and drilling patterns.

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:-----:
!_!
( )
!_!
[roughly]
Diagram of cover plate keyhole
:-----:

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The top cover uses a similar (but not as strong) locking method with the keyhole depicted above on the top left side and a regular lock (probably tumbler also) on the top right-hand side. It is interesting to experiment with the coin shute and the fortresses own "red box" (which Bell didn't have the 'balls' to color red).

## Miscellaneous: -----

In a few areas (rural & Canada), post- pay service exists. With this type of service, the mouthpiece is cut off until the caller deposits money when the called party answers. This also allows for free calls to weather and other DIAL-IT services! Recently, 2600 magazine announced the CLEAR BOX which consists of a telephone pickup coil and a small amp. It is based on the principal that the receiver is also a weak transmitter and that by amplifying your signal you can talk via the transmitter thus avoiding costly telephone charges!

Most fortresses are found in the 9xxx area. Under former Bell areas, they usually start at 98xx (right below the 99xx official series) and move downward.

Since the line, not the fone, determines whether or not a deposit must be made, DTF & Charge-A-Call fones make great extensions!

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Finally, fortress fones allow for a new hobby--instruction plate collecting. All that is required is a flat-head screwdriver and a pair of needle-nose pliers. Simply use the screwdriver to lift underneath the plate so that you can grab it with the pliers and yank downwards. I would suggest covering the tips of the pliers with electrical tape to prevent scratching. Ten cent plates are definitely becoming a "rarity!"

Fortress Security:

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While a lonely fortress may seem the perfect target, beware! The Gestapo has been known to stake out fortresses for as long as 6 years according to the Grass Roots Quarterly. To avoid any problems, do not use the same fones repeatedly for boxing, calling cards, & other experiments. The telco knows how much money should be in the coin box and when its not there they tend to get perturbed (read: pissed off).

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[45] Mins Left [ # [filename] D M V L H [Return] to Quit]?

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