

LOOPS.TXT

LOOPS EXPLAINED
AUTHOR UNKNOWN

LOOPS OCCUR IN ALL AREA CODES AND CONSIST OF TWO PHONE NUMBERS. THESE NUMBERS ARE IN THE SAME EXCHANGE AND THE LAST FOUR DIGITS ARE USUALLY SIMILAR. A TYPICAL LOOP PAIR MIGHT LOOK LIKE 212-555-9990 AND 555-9Y93. THERE ARE USUALLY AT LEAST TWENTY LOOPS IN AN AREA CODE AND OFTEN ALL OF THE LOOPS IN AN AREA CODE WILL HAVE IDENTICAL SUFFIX PAIRS.

THE BASIC THING ABOUT ANY LOOP IS THAT THE TWO NUMBERS ARE CONNECTED TOGETHER. IF I WERE TO CALL ONE NUMBER AND YOU WERE TO CALL THE OTHER WE'D BE CONNECTED. IT'S ALL A BIT EERIE AT FIRST BECAUSE MOST LOOPS DO NOT RING; IF YOU DIAL A LOOP AND THERE IS SOMEONE ON THE OTHER END YOU WILL BE INSTANTLY CONNECTED. WHAT WILL YOU HEAR IF YOU DIAL A LOOP NUMBER AND THERE'S NO ONE ON THE OTHER END? THAT DEPENDS UPON WHICH OF THE NUMBERS YOU DIAL. IF YOU DIAL THE HIGHER NUMBER OF THE PAIR YOU WILL HEAR ONLY SILENCE; IF YOU DIAL THE LOWER ONE YOU WILL HEAR A 1000 HZ TONE. ON MOST LOOPS YOU CAN TALK TO ONE CALLER AFTER ANOTHER ON THE OTHER END WOW TWO PEOPLE TO TALK AND USUALLY SOUND LIKE ANY OTHER PHONE CONNECTION. YOU MAY BE ASKING SO WHAT? THE ANSWER TO YOUR QUESTION IS THAT LOOPS OFFER ANONYMITY. PEOPLE USE THIS ANONYMITY FOR MANY REASONS.

WE ARE NOW TO THE POINT OF WONDERING WHAT TELCO USES LOOPS FOR. THERE HAVE BEEN A NUMBER OF THEORIES ADVANCED ON THIS TOPIC OVER THE YEARS BUT FEW PEOPLE HAVE BOTHERED TO ASK TELCO. ONE COMMON THEORY HAS BEEN AKIN TO THE IDEA THAT THE LOOPS ARE SOMEHOW USED TO "TIE UP" UNUSED PHONE LINES AT THE CENTRAL OFFICE TO "KEEP THEM OUT OF TROUBLE." (I HAVE ALWAYS ENJOYED THE IMAGE OF TWO LONELY PHONE LINES TIED TOGETHER TO KEEP THEM COMPANY.)

LOOPS ARE USED TO SAVE TIME AND MANPOWER IN TESTING LONG DISTANCE TRUNKS. WE'RE NOT TALKING ABOUT THE PHONE LINE THAT CONNECTS YOUR PHONE TO THE CENTRAL OFFICE BUT THE TRUNKS THAT CONNECT CENTRAL OFFICES AND RUN IN LENGTH FROM A FEW THOUSAND FEET TO MANY MILES. HOME OR BUSINESS TELEPHONE IS A TTY VOICE AND THE CALLER'S VOICE IN DIFFERENT DIRECTIONS. ONCE THE LINE GETS TO TELCO PREMISES THE SIGNAL IS DIVIDED UP INTO TWO CIRCUITS. ONE CIRCUIT CARRIES YOUR VOICE AND THE OTHER CARRIES YOUR CALLER'S VOICE. IF THE SIGNALS WERE KEPT ON ONE CIRCUIT THERE WOULD BE PROBLEMS WITH FEEDBACK AND ECHOES. TRUNKS MAY CONSIST OF TWO PAIRS OF TWO WIRE CIRCUITS OR MAY BE RADIO FREQUENCY CARRIERS ON A CABLE. TRUNKS HAVE REPEATERS ALONG THE WAY WHICH AMPLIFY THE SIGNAL REMOVE ECHOES AND EQUALIZE FREQUENCIES. REPEATERS OCCUR ABOUT EVERY TWO MILES ON AN "OLD STYLE" WIRE TRUNK LINE AND ABOUT EVERY 2000 FEET ON CARRIER TRUNKS. VERY SHORT TRUNKS MAY NOT HAVE A REPEATER. REPEATERS NEED TO BE TESTED AND ADJUSTED OCCASIONALLY. IN THE OLD DAYS A TECH WOULD TEST A TRUNK BY ARRANGING FOR SOMEONE TO BE AT THE OTHER END. HE WOULD THEN SEND A 1000 HZ TEST TONE TO THE OTHER PERSON WHO WOULD READ THE VOLUME ON A METER. TO COMPLETE THE TEST THE OTHER TECH SENDS A SIGNAL BACK ON THE OTHER LEG TO THE FIRST TECH AS THE PHONE SYSTEM GREW TELCO DECIDED TO CUT DOWN ON MANPOWER BY TYING TWO LINES TOGETHER. THUS THE LOOP WAS BORN. TRUNKS ARE TIED TOGETHER VIA A THING CALLED A "ZERO LOSS TERMINATOR WHICH CONNECTS LINES

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SO THERE IS NO CHANGE IN VOLUME. BY THE MID FIFTIES, THE ENTIRE PHONE SYSTEM HAD BEEN EQUIPPED WITH LOOPS, SO A TECH AT ONE END COULD TEST A TRUNK ALONE BY DIALING A LOOP. HE DIALS THE OTHER HALF OF THE LOOP WITH A KNOWN GOOD TRUNK. THEN HE REVERSES THE SIGNAL PATH TO COMPLETE THE TEST.

IT WASN'T LONG BEFORE SOME ORDINARY CITIZENS DISCOVERED THAT LOOPS COULD ALSO PASS VOICES NOT JUST TONES. SINCE THE LINES BELONGED TO TELCO THEY WEREN'T BILLED FOR THE CALL. SO A FEW PEOPLE MADE FREE CALLS TO FRIENDS BUT THERE WAS SO LITTLE OF THIS THAT ITS EFFECT ON THE PHONE COMPANY'S INCOME WAS WAY "DOWN IN THE NOISE." IT WASN'T UNTIL YEARS LATER IN THE EARLY SEVENTIES THAT BELL WAS TO PUT BILLING CIRCUITRY ON LOOP NUMBERS.

TO AVOID GIVING AWAY THEIR LOCATION MOST BOOKIES USED A CHEESEBOX A DEVICE THAT CONNECTS TWO PHONE LINES TOGETHER. CHEESEBOXES WERE INSTALLED IN A SMALL BUSINESS OFTEN A SMALL BUTCHER SHOP OR A GROCERY. THE BOOKIE ARRANGED WITH THE PROPRIETOR TO HAVE TWO PHONES INSTALLED IN THE SHOP AND WOULD PAY A SMALL MONTHLY FEE. HE THEN TIED THE LINES TOGETHER WITH HIS CHEESEBOX AND GAVE ONE OF THE NUMBERS TO HIS CLIENTELE. SOME BOOKIES EITHER COULDN'T AFFORD A CHEESEBOX OR COULDN'T LOCATE ONE AT ANY PRICE SO THEY HIT UPON USING LOOPS.

IT WAS GOOD WHILE IT LASTED. GRADUALLY HOWEVER MORE AND MORE SHADY CHARACTERS STARTED USING LOOPS. THE AUTHORITIES WEREN'T BLIND TO THIS AND STARTED APPROACHING THE TELCO TO DO TRACES ON THESE LOOPS. EVENTUALLY THE PHONE COMPANY WAS SPENDING A LOT OF TIME ON CRIMINAL TRACES AND DECIDED TO DO SOMETHING ABOUT THESE LOOPS.

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=STARTED INSERTING A BANDPASS FILTER THAT PASSED ONLY 1000 HZ IN THE TERMINATOR END OF ITS' LOOPS. WITH THIS CHANGE TTBLOCKED VOICES. WE'RE GOING TO SEE THAT THE SOLUTION WAS ONLY TEMPORARY THOUGH. THE OLD STYLE FOUR WIRE TRUNKS COULD ONLY HANDLE ONE CALL AT A TIME TAKING UP A LOT OF WIRE AND SPACE. THERE HAD TO BE A WAY TO CRAM CALLS INTO A SMALLER SPACE. BY THE EARLY 1960'S BELL HAD STARTED SWITCHING TO CARRIER TRUNKS WHICH PUT MANY CALLS ON A CABLE. EACH SIGNAL MODULATED AN AM CARRIER ON A DIFFERENT FREQUENCY. BECAUSE CARRIER USES RADIO FREQUENCY TRANSMITTERS AND RECEIVES CALLS INTO A SMALLER SPACE.

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LET'S LOOK AT HOW LOOPS ARE USED NOWADAYS. IF A TECH DIALS UP THE LOWER NUMBER HE WILL IMMEDIATELY GET A 1000 HZ TONE COMING BACK TO HIM WHICH IS INJECTED AT A SPECIFIC VOLUME KNOWN AS "ZERO DB" LEVEL. USING HIS METER HE CAN GAUGE IF THERE ARE ANY PROBLEMS ON THE LINE AND IF HE NEEDS TO DO A COMPLETE TEST AT VARIOUS FREQUENCIES HE THEN TURNS THE FILTER BYPASS SWITCH

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ON. MOST OF THIS WORK IS DONE AT NIGHT WHEN REPAIR PEOPLE ARE FREE FROM NORMAL CHORES.

IN PREPARING THIS REPORT I INTERVIEWED SEVERAL SECURITY DIRECTORS FOR NEW YORK TELEPHONE COMPANY AND SPENT SOME TIME ON LOOPS TALKING TO PEOPLE WHO USE THEM. IT TURNS OUT THERE ARE PEOPLE USING LOOPS FOR MORE THINGS THAN I HAD IMAGINED. I HAVE ALWAYS WONDERED IF SPIES USE LOOPS BUT I HAVEN'T ENCOUNTERED ANY YET. WHEN I STARTED LOOKING INTO LOOPS I WAS AWARE THAT SOME RADIO PIRATES USE LOOPS. ESPECIALLY IN THE NEW YORK CITY AREA YOU'LL OFTEN RUN INTO AM AND FM PIRATES ON LOOPS LATE AT NIGHT.

SOME LOCAL LOOP NUMBERS ARE PRETTY WELL KNOWN AND ARE PASSED AROUND HIGH SCHOOLS AND COLLEGES. WHEN STUDENTS GET BORED AT NIGHT OR WANT TO FIND A PARTY THEY CALL A LOOP AND WAIT THERE TILL SOMEONE ELSE CALLS. IT MAY BE SOMEONE THEY KNOW OR A COMPLETE STRANGER. BUT IT'S SOMEONE TO TALK TO. THEN THERE ARE THE LOOP HABITUATES. THEY REGULARLY MEET WITH THEIR CIRCLE OF FRIENDS AND ACQUAINTANCES ON LOOPS AND TEND TO RESENT STRANGERS ON THEIR LOOPS.

REPRESENTATIVES ARE QUICK TO POINT OUT THAT LOOPS BELONG TO THE PHONE COMPANY. ANYONE ELSE USING THEM IS A TRANSGRESSOR. SINCE BELL IS THE AGGRIEVED PARTY IT NEEDN'T HAVE ANY QUALMS ABOUT LISTENING TO LOOPS NOR ABOUT TRACING CALLERS. BELL WISHES TO DISCOURAGE PEOPLE FROM USING THEM AND PERIODICALLY PROGRAMS ITS' BILLING COMPUTER TO LOOK FOR LOOP NUMBERS. ANY CUSTOMER THUS FOUND IS SENT A CARD POINTING OUT THAT THESE NUMBERS BELONG TO TELCO. WITH THE EXCEPTION OF THOSE STEALING SERVICES BELL BECOMES AWARE THAT SOME ONE IS CALLING A LOOP USING A FAKED CREDIT CARD NUMBER; OR SPRINT OR MCI WILL ASK FOR HELP TRACING SOMEONE ILLEGALLY STEALING THEIR SERVICES TO CALL A LOOP. THEN IT'S A MATTER OF WAITING FOR THE PERSON TO TRY AGAIN AND TRACING THE CALL. IN THESE AFFAIRS THE PHONE COMPANY IS VERY AGGRESSIVE AND EFFECTIVE IN TRACKING DOWN OFFENDERS. BELL HAS SOME VERY WELL TRAINED PEOPLE WHO ARE MOST ADEPT AT KEEPING THE OFFENDER ON THE LINE UNTIL A TRACE IS COMPLETE.

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