



# ***Exploding The Phone***

db513

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Bibliographic Cover Sheet

Title	<b>Bell Labs Memo Regarding Unauthorized Access to AUTOVON Network</b>
Date	1976-01-29
Author(s)	Hopper, Kenneth D. (Bell Labs)
Abstract	Memo describing meeting at FBI Los Angeles on January 21-23, 1976 regarding AUTOVON access.
Keywords	AUTOVON; Ken Hopper
Source	Anonymous

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Bell Laboratories

**RESTRICTED BELL SYSTEM  
SECURITY INFORMATION**

subject: Bell System Security - Unauthorized  
Access to Autovon Network - File  
39865-2

date: January 29, 1976

from: K. D. Hopper

MEMORANDUM FOR FILE

On Wednesday, January 21, 1976, through Friday, January 23, 1976, a series of meetings, interviews, and tests were conducted at Los Angeles, California. The purpose of these proceedings was to determine the credibility of recent reports of Autovon network misuse. Those participating were:

W. F. Bowren	Security Director	Pacific Telephone, Los Angeles
Jay Cochran	Asst. Director	FBI, Washington, D.C.
R. S. Edfast	Security Manager	Pacific Telephone, Pasadena
B. A. Fonger	Communications Analyst	NSA, Washington, D.C.
R. E. Gebhardt	Asst. Director	FBI, Los Angeles
W. E. Harward	Section Chief	FBI, Washington, D.C.
K. D. Hopper	AMTS - Security Support	BTL, Holmdel
C. F. Israel	Autovon Network Manager	AT&T Long Lines, Washington, D.C.
Robert Jacobs	Special Agent	FBI, Los Angeles
W. R. Perrin	Security Manager	Pacific Telephone, Pasadena
N. H. Saxe	Security Supv.	AT&T Long Lines, New York
W. P. Schmidt	Sr. Security Agent	General Telephone, Santa Monica
William Snell	Special Agent	FBI, Los Angeles

and two interviewees, identified subsequently.

This matter is the subject of many separate investigations including:

FBI Los Angeles Case 139-430

AT&T Long Lines Security Case No. 6-506

General Telephone of California Case **23-453**

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A meeting was held at the FBI field office, 11000 Wilshire Boulevard, Los Angeles on Wednesday afternoon, January 21. In attendance were Messrs. Cochran, Fonger, Harward, Hopper, Jacobs, Schmidt, and Snell. Messrs. Jacobs and Snell provided some background information on two subjects to be interviewed the following day. Both had agreed to demonstrate their methods of entering the Autovon network by blue box manipulation and operator deception ("con"). Instrumentation and telephone line arrangements were discussed. Some specialized devices were required which were put together by the FBI radio shop. It was decided that the interviews could best be conducted with a minimum number of interviewers. Both subjects had consented to tape recording, therefore it was planned to assemble those not present in the interview room in a nearby conference room. As tape reels were to be completed (3/4 hour intervals) they would be brought to the conference room and played. It was planned to use 2-channel tape equipment, with one channel associated with the telephone line and the other to a room microphone.

On Thursday morning, January 22, a meeting began at 9:00 a.m. at the Los Angeles FBI field office. Those in the conference room were Messrs. Bowren, Cochran, Edfast, Fonger, Perrin, and Schmidt. Those in the interview room were Messrs. Harward, Hopper, Israel, Jacobs, Saxe, and Snell.

The first person interviewed was 18 years old, who described himself as having been an active "phone enthusiast" since 1969 or 1970. He proceeded to demonstrate Autovon access by ordinary blue box technique to an Autovon assistance operator in Alaska. She then completed a call over Autovon, back into DDD, to another telephone in the interview room. We spoke over the connection. Similarly, on another call he requested an Autovon assistance operator to complete to an Autovon telephone at Mr. Israel's office in Washington, D.C. This call was also via Alaska and was completed.

guard banding blue box technique involved two separate oscillators one at 2600 Hz, the other at 3200 Hz and a proportional mixer arrangement. This is diagrammed in Figure 1. He was successful in holding up two to three links with ease, and occasionally could extend to four links; however he could not successfully gain entry to the Autovon network *by this method.*

He also demonstrated distant city calling over MCI and Union Oil private microwave tie line facilities to Washington, D.C., New York City, Dallas, and San Francisco. This was all done with only a normal TOUCH-TONE® telephone and did not require use of a blue box or other devices.

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also stated he had knowledge of verification access schemes and could readily acquire Bell System proprietary matter.

Complete details of calling techniques and other information supplied by him is included in Appendix I. He also furnished a written description of his Autovon entry methods. This is included as Appendix III.

The second person interviewed was identified only as "Bill." He is in his mid-20's and well-spoken. He also demonstrated Autovon access through an assistance operator ("Alaska Switch"), and through a California military base operator (Edwards AFB). He, like used guard banding with 2600 Hz and 3200 Hz. With his arrangement separate test oscillators were used. The 2600 Hz level remained constant and the 3200 Hz level varied so as to control the most distant link. Also, like he could not complete a call into Autovon by guard banding. His arrangement is diagrammed in Figure 2.

Bill discussed verification access by MF outpulsing of 11-digit codes. He demonstrated switchhook flashing to cause a new sender attachment (in lieu of 2600 Hz method) and stated that he had only found this a viable technique when operating from General Telephone Company areas.

Bill also mentioned accessing computer networks by use of a Model 33 teletypewriter having DTWX features. One such network involved real estate listings in the Detroit, Michigan area, while the other system is called the "ARPA net" and involves educational institutions. He also stated he had accessed the maintenance teletype channel of ESS offices, however, did not yet know exactly how to exploit this avenue. The new No. 4 ESS at Chicago is another challenge which he evidently plans to explore.

Throughout the interview, Bill made frequent reference to a binder containing original pages of the ~~traffic rate and route~~ guide. He mentioned that they were somewhat outdated, however were 99 percent usable. He stated his sources of proprietary documents included employees being terminated and trash searches, particularly at times of traffic practice reissues. An attempt to order AT&T Long Lines traffic practices from Kansas City met with no success.

Complete details of Bill's calling techniques and other information supplied by him is included in Appendix II.

During the evening of Thursday, January 22, Messrs. Fonger, Hopper, Israel, Saxe, and Schmidt went to the Security Laboratory of General Telephone Company of California at Santa Monica. The methods demonstrated (or discussed) by

*DISTANCE DIALING REFERENCE*

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and "Bill" were tried. At 9:30 p.m., PST, we succeeded in completing a call to Mr. Israel's Washington, D.C. Autovon telephone. The procedure was:

Dial Tone

TT: 1 907 555 1212

2600 Hz

MF: KP1 980 111 ST

(Kalakaket Creek  
Air Force Station)

Ring and Announcement: ".....980"

2600 Hz + 3200 Hz

MF: KP1 940 121 ST

(Pedro Dome  
Air Force Station)

Answer: "May I help you?"

Request for assist to Autovon 851 1738, identified as "Jack Frost," call accepted without question and completed.

At 10:30 p.m. PST, we succeeded in completing a call without operator assistance. The sequence was as follows:

Dial Tone

TT: 1 907 555 1212

2600 Hz

MF: KP1 980 111 ST

(Kalakaket Creek  
Air Force Station)

Ring and Announcement: ".....980"

2600 Hz + 3200 Hz

MF: KP1 940 111 ST

(Pedro Dome  
Air Force Station)

Ring and Announcement: ".....940"

2600 Hz + 3200 Hz

MF: KP1 123 851 1738 ST

(Washington D.C.  
Autovon tel. number)

Ring

Answer: "Network Management Center"

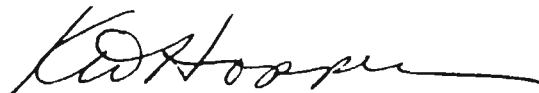
The equipment arrangement used the same 2600 Hz + 3200 Hz signal source as used by plus other equipment. The arrangement is shown in Figure 3.

At about 9:00 p.m. PST, it was noted that 907-555 entry into the network was being alternate routed by way of Seattle. This was determined from announcements which included the 206 location code. Inquiry of the New York Network Management Center indicated that overload was indicated on the direct Los Angeles-Alaska trunk group. The network administration people indicated that this was a highly unusual condition, especially at this time. (Later information indicates perhaps two other blue box users may have been making similar attempts about this time.)

Our success in direct Autovon dialing came only after many, many, fruitless attempts, perhaps as many as 100. Throughout this procedure one circuit to Alaska was unavailable to legitimate callers.

On Friday morning, January 23, a meeting was held at the Los Angeles FBI field office. Present were Messrs. Cochran, Fonger, Gebhardt, Harward, Hopper, Jacobs, and Snell. The information developed from the previous day's interviews was reviewed, along with the results of our tests from General Telephone's laboratory.

Certain enforcement actions were deemed necessary by the FBI, and they shall proceed in that area. Mr. Fonger indicated he would be visiting the Holmdel Laboratory in the near future to consult with appropriate persons. He has long-established contacts within Bell Laboratories. K. D. Hopper agreed to analyze the recording tapes on an expedited basis and provide call directing codes to the concerned persons.



K. D. Hopper

HO-3326-KDH-ks

Att.

Figures 1, 2, and 3

Appendixes I, II, and III

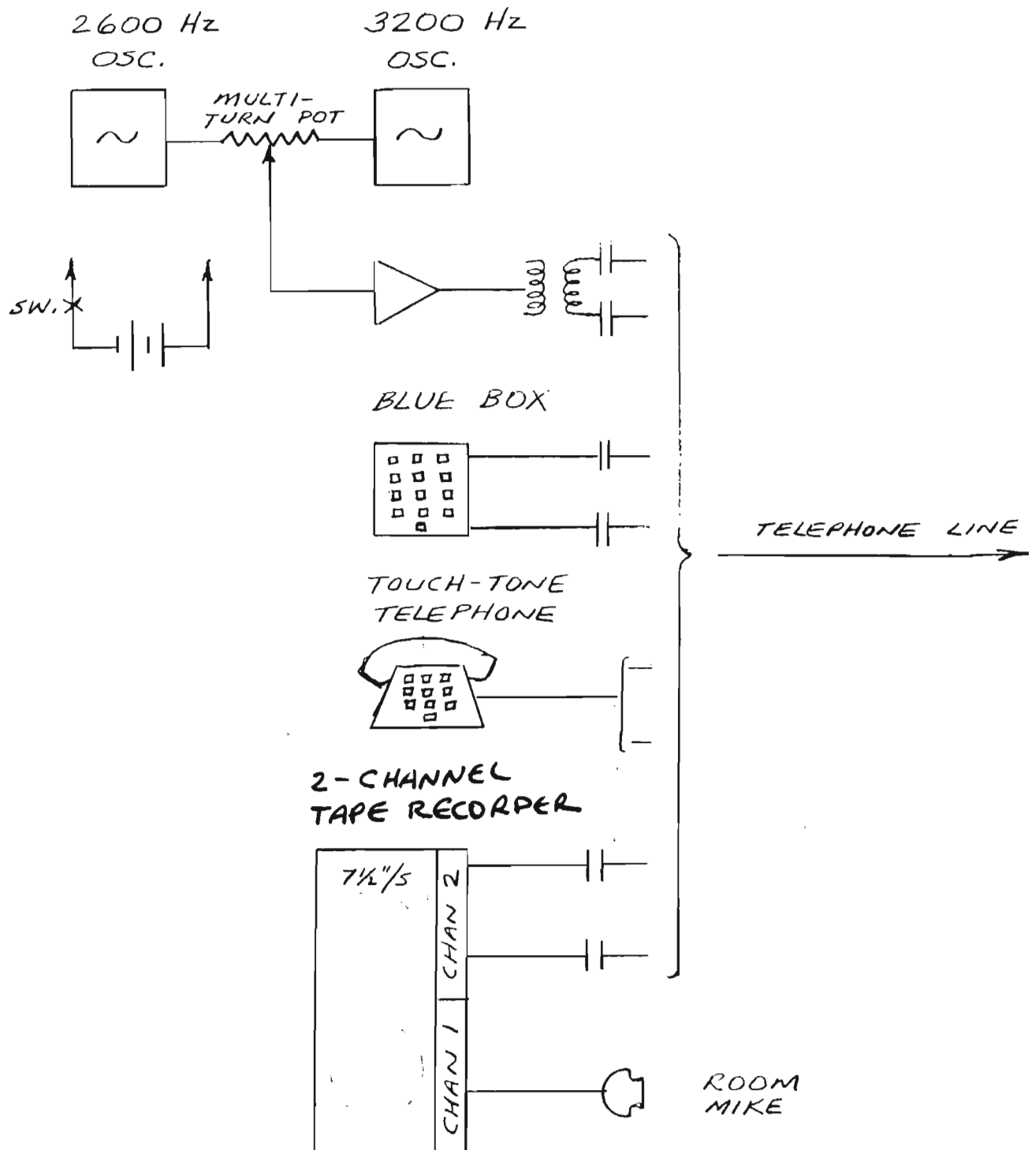
RESTRICTED BELL SYSTEM  
SECURITY INFORMATION

Copy to  
J. F. Doherty - AT&T - Basking Ridge  
C. F. Israel (2) - AT&T - Washington  
N. H. Saxe (2) - AT&T - 32 Avenue of Americas  
W. P. Schmidt (2) - General Telephone - Santa Monica  
W. F. Bowren (2) - PAC - Los Angeles  
W. B. Cagle  
J. S. Engel  
J. W. Fitzwilliam  
W. O. Fleckenstein (2)  
R. J. Keevers  
Ian Ross  
F. S. Vigilante

H. J. MICHAEL reports that several years ago there was a study to determine possible CCSA - AUTOVON X-OVERS due to common switching machines. A person involved in this study was GEORGE SPEAK of Southwestern Bell.

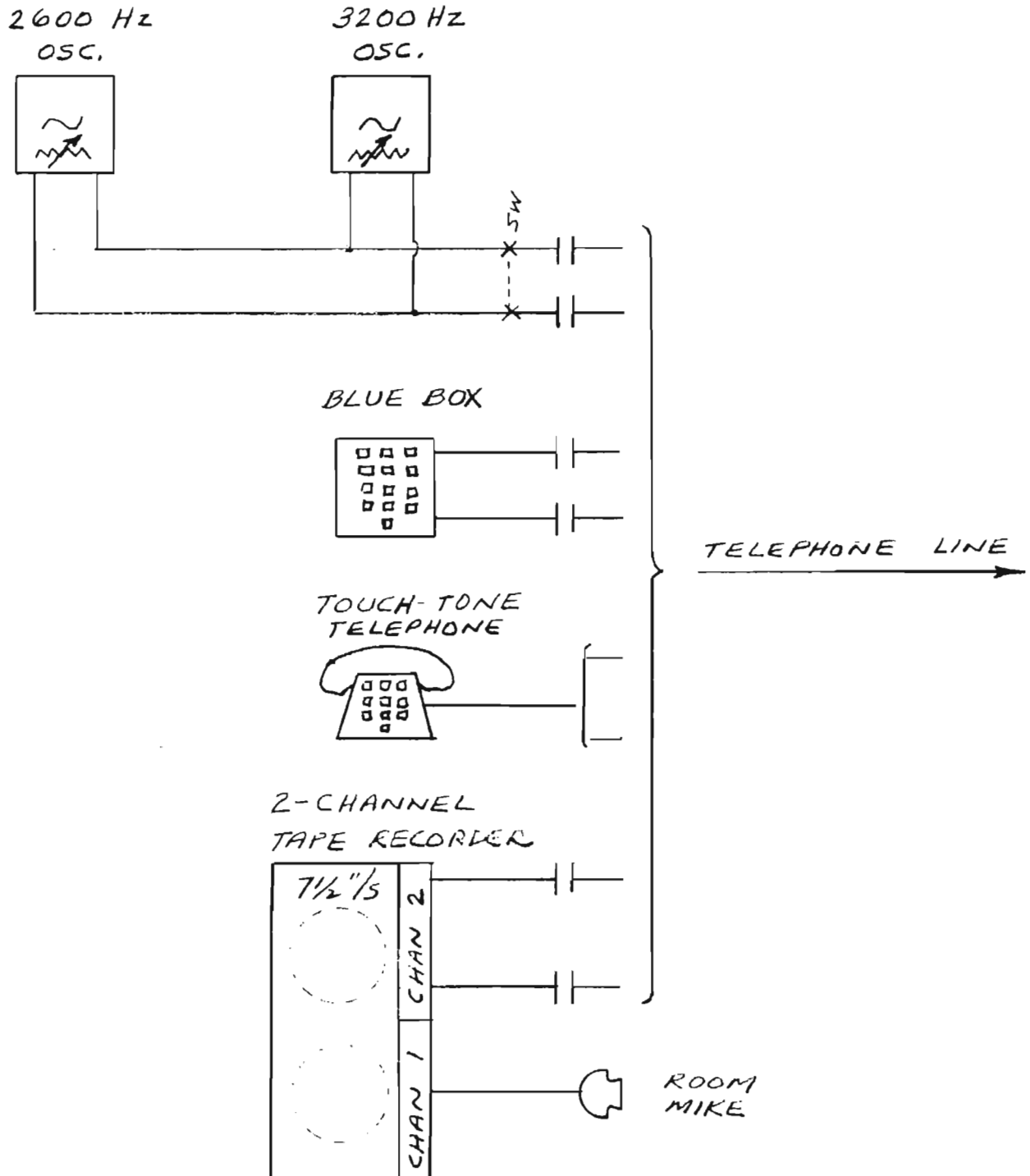
HJM also advises that DCA is contemplating use of a two-tone signalling unit made by "International Telephon" Co. A meeting has taken place concerning this.

# RESTRICTED BELL SYSTEM SECURITY INFORMATION





# RESTRICTED BELL SYSTEM SECURITY INFORMATION



ISSUE

1-29-76

ENGR

DRAWN  
KDH

TITLE

BILL'S DEMONSTRATION  
ARRANGEMENT

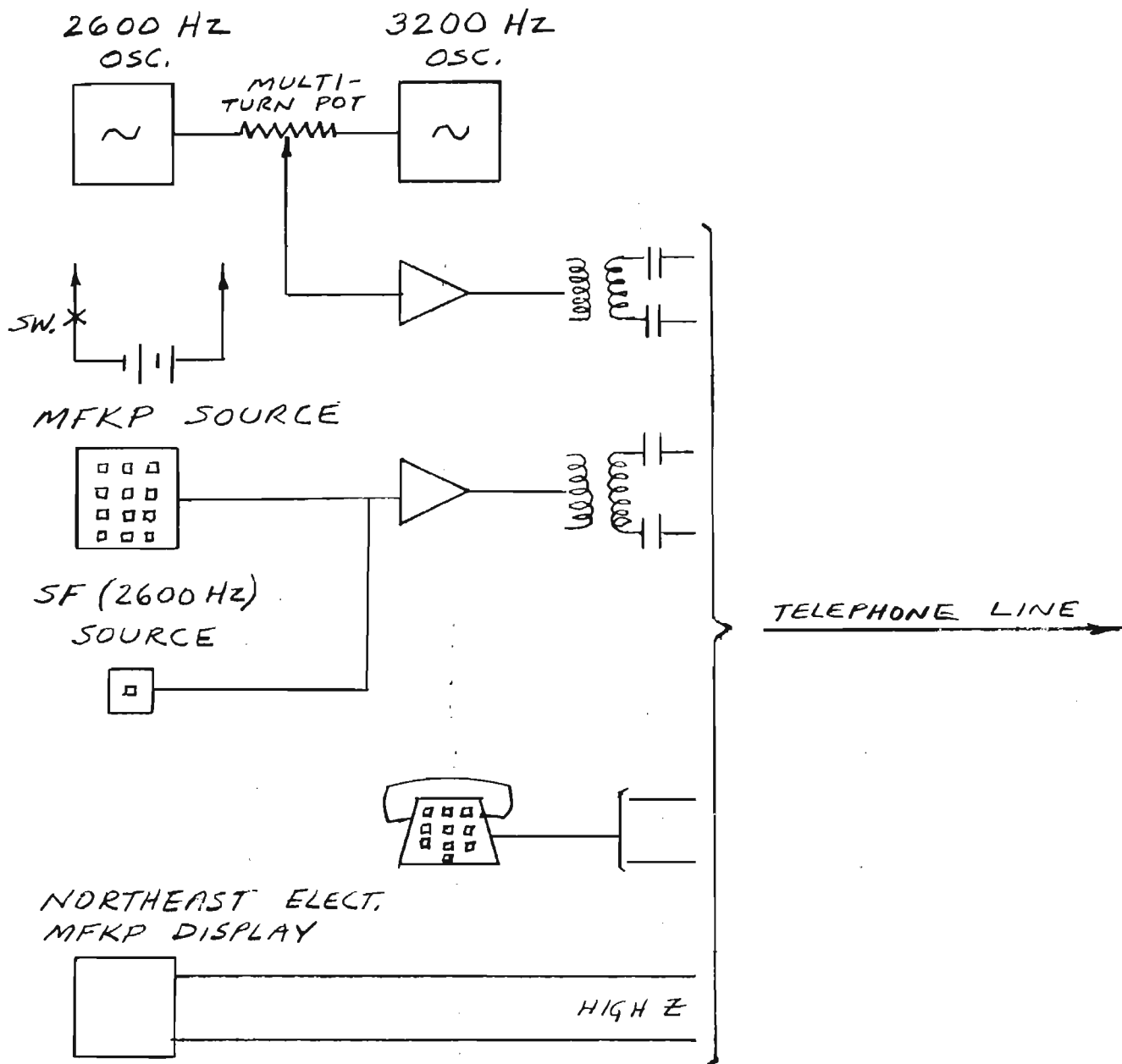
BELL TELEPHONE LABORATORIES  
INCORPORATED

FIG. 2

SHEET

7 16

# RESTRICTED BELL SYSTEM SECURITY INFORMATION



ISSUE

1-29-76

ENGR

DRAWN

KDH

TITLE

GENERAL TEL. CO. OF CALIF.  
SECURITY LAB INSTRUMENTATION

BELL TELEPHONE LABORATORIES  
INCORPORATED

FIG. 3

NO. OF SHEETS PER SET

SHEET

**RESTRICTED BELL SYSTEM  
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APPENDIX I

Information supplied by

Successful Call from DDD, through Autovon, and Back to DDD

Dial Tone

TT: 1 907 555 1212

2600 Hz

MF: KP1 980 940 1230 ST

Ring

OP1: Answer: "This is Autovon, may I help you?"

"Dialing assistance please, I'm trying to reach the Los  
B: Angeles base 833-1110."

OP1: "Had you been dialing; that when I came on the line?"

B: "Why no, I was dialing for assistance in dialing."

OP1: "Oh, alright, and what's happening when you dial this 833  
number?"

B: "I'm getting a reorder for no circuits."

OP1: "What is your Autovon number?"

B: "462-7219."

OP1: "Thank you."

Ring

OP2: Answer: "? Air Force Station"

B: "Operator could you assist me in completing a 3-minute call  
off base?"

OP2: "Is it official?"

B: "Yes, it is."

OP2: "What is the number?"

B: "463 5333 in the 213 area code, I'm sorry, 473-5333."

OP2: "473, alright."

Ring

(Connect to phone in room)

Successful Call Through Assistance Operator to Autovon Telephone

TT: 1 907 555 1212

2600 Hz

MF: KP1 980 940 1230 ST

Answer: "Autovon"

B: "Yes, operator, dialing assistance please on a no ring 851-1738."

OP: "Alright sir, your Autovon number?"

B: "462-7211."

OP: "One moment."

Tone Ring - OP: "Its ringing alright sir."

Answer: "Network Management Center"

B: "This is the Autovon Test Board at Mount Weather, how do you read me?"

"Read you just fine."

(Requests for test, offer to stand by)

Miscellaneous Remarks Relating to Autovon

states he has been active in Autovon for about 4 months, starting about early August, 1975.

December 28 (1975) was last time he succeeded in direct MF pulsing of Autovon number without operator assistance. He believes some routing or code changes were put into effect on that date or shortly thereafter.

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He has succeeded in MF outpulsing one call with FO priority.

"Draper spent about 2 days developing the 721 1110 because he had to find a number that would work" (re: Alaska routing). *POSSIBLY 722-1110, SEE APPENDIX III, PG. 3*

"123 is the commercial network's, well the 4A's access to the Autovon switch, 999 is the access from the Autovon switch to the DDD net." Got "123" from 980 maintenance man.

"1230 translates into Alaska Autovon assistance and they will complete for you anywhere."

"There are two Autovon nets, CONUS and the foreign."

All 4-wire Autovon recordings knock themselves off.

First Successful Call Through Union Oil Private System

"Here's another one of my joys, Union Oil"

Dial Tone

TT: 486-6628

Ring, Auto Ring Trip

Announcement: "Thank you for waiting..."

TT: 9 239 1111 - irregular hits

Operator dial assist to another number, number passed.

Call Completed

Second Successful Call Through Union Oil Private System

Dial Tone

TT: 486-6620

Ring, Auto Ring Trip

Announcement: "Thank you for waiting..."

TT: 9 964 9041 111

OP: "Can I help you?"

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B: "Dialing assistance on a no ring please."

Answer: "Hello"

B: "Hello, how are you doing?" (Conversation with Draper)

(NOTE: It appears the OP had a display of his dialed digits, as the call was completed after her entry without passing of further number information by

Comments Concerning Union Oil

"Its called Union Oil private tie line microwave, can't whistle it off."

"Union Oil runs a diverter to San Francisco, OK, it has a telephone number and you call up the number and it seizes a Union Oil centrex and dials 189 which is San Francisco dial tone and then dials a zero for the credit card center operator, but I don't let it, what I do is it goes 189 and then I hit a 9 into it while - the second it goes to seize dial tone I hit a 9 so by the time it hears the tone it's just getting dial tone, OK so I am inserting it between the 9 and the zero, so what it does it goes 189, gets dial tone out of up north, then I dial, I insert a 9 which gets outside dial tone, and then a zero, then before the pulser times out, before the 0+ feature times out, I get my number right quick and I have a choice I can either (A) have her complete the call for me, or (B) keep the pulser on by doing this once every 6 seconds and tell her to go ahead and cancel the call and then I TOUCH-TONE in a zero. With all that it goes (didididi) and the light goes out on her board and she hits position release and of course that gets dial tone back. Then I can dial the rest. Its call diverter... I have direct trunking to Anchorage, Alaska which has possibilities. I can dial 105, and then the next thing you hear is (di-di-chi-whooo). You can't whistle it off either, you can't whistle off Anchorage, Alaska when you dial it. Its local dial tone from Anchorage, Alaska. You dial 105, get local dial tone, then I can either dial 10 digits and get back to L.A., or I can dial 7 digits and get anything in the 907 area code to ring, if I want..... There is no such thing as toll restriction in the smaller centers.

Successful Call Through MCI

B: "This is MCI"

Dial Tone

TT: 624 6783

Ring

Auto Ring Trip - Tone

TT: 22445 214 651 1400

B: "There's dial tone from Washington, D.C., let's go to New York's DID."

TT: 22445 212 489 9320

Q: "What's DID?"

B: "Direct Inward Dial."

TT: 22445 213 473 5333

Ring

(Connect to phone in room)

B: "L.A. to Washington, D.C. to Dallas to New York to L.A., all with TOUCH-TONE signaling. All private microwave! They are all ground start loops."

Comments Concerning Verification Access

"Something like calling 870-1111 which is the local incoming line to verify and you tell them that you are the testboard and you are calling to do transverter transmission tests.... the operators go for it.....have her plug in the circuit and you go "

KPl 213 366 6666 ST

"and you dial"

KPl 001 46575 ST

"What you'll do is you'll come into the guy's line but one-way scrambled from him to you....then get Lima Electronics up in San Francisco to send you have them sent out a schematic of their scrambler PC board circuits.....you do the circuit backwards and you get a descrambler....and you sit back and crank up your loudspeaker."

I've breadboarded out a circuit.

P.T.&T. INFO SOURCE ON THIS PRIVACY SCHEME:  
B.H. SCOTT

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"Mr. R. P. Cornell who is the network manager, or AVP of Network Engineering up in Frisco, company headquarters, he got the word from... Godfrey, I think his name was...look we need auto verify, get it now! Alright, AT&T wasn't ready with the circuit yet, for some reason there was some sort of a foul-up....we'll get it from Lima Electronics. Cornell said to his righthand man "get out there and buy it now!"

"You don't have BSPs on them, they are only in the form of preliminary CDs....and I do have friends who would cause one to vanish for 10 minutes while they go to the Xerox room."

Other Remarks by \_\_\_\_\_

Most of his activity has been after hours because of alternate routing uncertainties during peak traffic periods.

States he can tune box by ear.

"4E in Chicago just cut in."

"424-9337, in area code 800, just so happens to ring the Secret Service switchboard in the White House which answers and says "White House." Say go get Gerry....."

Made blue box operational test using KP1 213 000 ST and sending digit string KP1 213 N N - N ST



# RESTRICTED BELL SYSTEM SECURITY INFORMATION

## APPENDIX II

Information supplied by "Bill":

First Successful Entry to Autovon Assistance Operator, No  
Call Passed

Dial Tone

TT: 1 800 322 6972

Switchhook Flash

MF: KP1 907 272 8411 ST

2600 Hz (Whistled)

MF: KP1 980 940 1230 ST

Ring

OP: Answer: "Autovon Assistance"

B: "Is this Sage Autovon or General Purpose?"

OP: "General Purpose"

2600 (Whistled)

Second Successful Entry to Autovon Assistance Operator, No  
Call Passed, Three Operators Involved

Dial Tone

TT: 1 800 322 6972

Switchhook Flash

MF: KP1 907 940 121 ST

Continuous Ring

OP1: Answer: "Alaska Switch   ?  "

B: "Yes Operator, I need assistance in dialing Autovon number  
833-1000"

OP1: "Do you have a control number?"

B: "I have no control number"

OP1: "Where are you calling from?"

B: "I am calling from Fairbanks"

Ring

OP1: "Are you with the Jack Frost exercise?"

B: "I imagine so, yes Operator"

OP1: "Where is the call going to?"

B: "It's going to El Segundo, California, Operator"

OP1: "And you have a control number?"

B: "No control number, Operator"

OP1: "Who are you with there?"

B: "I believe Jack Frost Company"

OP1: "Oh - alright"

Ring

OP2: "Air Force Base, stand by please"

"May I help you?"

B: "Yes operator, are you located in El Segundo, California?"

OP2: "Yes"

B: "OK could you ring off base for me please?"

OP2: "Where are you calling from sir?"

B: "I am calling from Fairbanks, Alaska"

OP2: "You have to come in 833 1110"

B: "1110?"

OP2: "Right"

B: "I'm sorry" - call terminated

(Flash - Autovon operator recalled)

OP1: "Alaska Switch \_\_\_\_ ? \_\_\_\_"

B: "Yes, operator apparently I got the wrong number, would you rekey over the General Purpose Autovon network 833 1110?"

OP1: "Yes"

Ring

OP3: "\_\_\_\_ ? \_\_\_\_" (Answer)

B: "Yes, Operator would you ring off base for me, please?"

OP3: "Government official?"

B: "It's unofficial"

OP3: "Would you place your call after 1730"

B: "1730" - terminated

Successful Con of Edwards AFB Operator to Accept Autovon  
Call

Dial Tone

TT: 1 800 322 6972

Switchhook Flash

MF: KP1 805 277 0001 ST

Ring

OP: Answer: "Edwards, Operator \_\_\_\_" (Numeral Indistinct)

B: "Yes, could you ring El Segundo Unit, Air Force Unit 833-1110 over the Autovon, please"

OP: "Sir who are you calling from?"

B: "Where am I calling from?"

OP: "Yeah"

B: "I'm calling from Edwards"

OP: "You know it is against our policy to do that, ring Autovon from the housing, you are calling from the 258 number?"

B: "Yes apparently so, I'm trying to figure out how I'm supposed to do it."

OP: "Well it's supposed to be a base extension mostly, I will ring it this time for you but base extensions are the only one that do have access to Autovon calls, unless it's an emergency or \_\_\_\_? \_\_\_\_ial."

B: "OK, I'm not familiar -"

(Call Passed)

Ring

Answer: "El Segundo"

B: "Is this the El Segundo unit?"

"Yes" - Call Terminated

Miscellaneous Remarks Relating to Autovon

Bill states he has been an active Autovon experimenter for 4-5 months. (This is the same as

"Class of service recognized between a standard DDD tandem and an Air Force tandem, now when you try to access one Air Force tandem and try an Autovon tie line code or whatever it is, \_\_\_\_? they won't access because it's the wrong class of service, but if you go into one Air Force tandem and then over into another Air Force tandem, it will recognize the Air Force class of service and that will go for \_\_\_\_? Autovon."

"9078, I do 980, 940, I'm going from Kalaket Creek Air Force Station to Pedro Dome Air Force Station, OK, now there is an in-band trunk from 9078, wherever that's located to Kalaket Creek, and there is another one that's in-band from Kalaket Creek to Pedro Dome. What I have to do is I have to leave the two in-band trunks up in between here and 9078, and from here to 980, and then I had to clear the trunk from 980 to 940, because the register in 980 doesn't have the capacity to hold all the digits needed to route the traffic through the Autovon, cause you need 3 + 3 + 7 and the maximum is 11 digits, so you have to reseize and key it up so you have enough room to insert all the required digits."

"940 is Pedro Dome Air Force Station."

"123 + 7-digit code will translate into Autovon."

Other Remarks by Bill

"Guard banding limited to three (links) sometimes four."

Q: "Are these two oscillators critical in regard to frequency or level or both?"

B: "They are very critical in terms of level."

"The reason I use 3200 cycles is because of frequency response curve."

"It's probably pretty close to zero (dB)."

"It will respond down to a negative nine (dB)."

"English network uses 2280 Hz, in-band."

Q: "How do you call to Russia?"

B: "Go 188 to Montreal to access overseas IDDD route."

Guard band off

KP 1 0 710 9547 ST

188 winks, no tone like others

"I have called the American Embassy."

China, no access

Hong Kong easy

"There is a way to route to Antarctica haven't done it myself."

CLETS, NCIC - no penetration to his knowledge.

"PCCC," nonprofit computer co-op at Palo Alto.

AUTODIN - "never accessed myself."

ARPA net access: net includes MIT, Florida universities, maybe NSA. Uses same frequencies as DTWX. Has 33 tele-typewriter.

Detroit computer provides real estate listings, voice answerback.

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Test Train access to verification - Continental telephone:  
714-86704D (MF), overhear conversation, 2-way talk path.

TSPS: 001 + 7D

Knows of evidence gathering devices by name, somewhat confused regarding features.

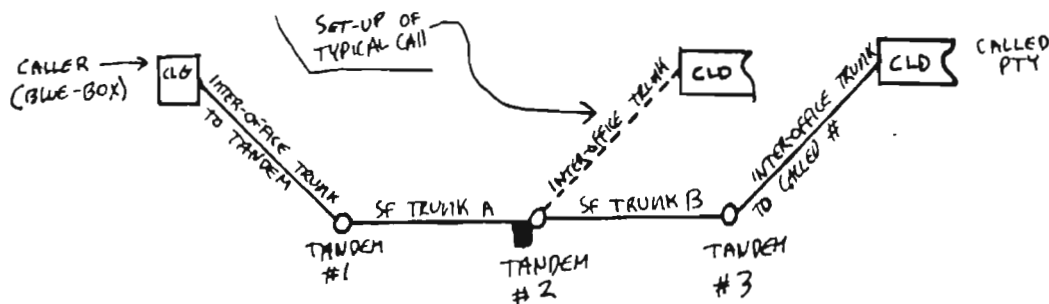
# RESTRICTED CELL SYSTEM SECURITY INFORMATION

## APPENDIX III

PAGE 1

### AUTOVON ACCESS INFO

To access the autovon system, one must have the proper tools and devices. They consist of the following: one 'Blue-Box' or Multi-frequency Outpulse unit which must be electrically coupled to the telephone line, as opposed to any other form of coupling such as acoustic, etc. This unit must be equipped with a special circuit for generation of the Guard Tone signal, which is a 2600 Hz signal mixed with a 3200 Hz signal with a potentiometer to control the mix. Preferably, in the fully-turned clockwise position there should be a 2600 signal generated only, and in the middle position a 50% each mix of 2600 Hz and 3200 Hz. In the full counter-clockwise position a pure signal of 3200 Hz should be generated. There is also the requirement of including an output volume control, for the purposes of fine-tuning the operation of the Guard Tone circuit. The variable frequency-of-output control knob should be of the two turn type, or a good leeway for fine-tune adjustment in the middle-range of the mix operation. In other words, a potentiometer with a greater number of turns either way becomes easier to fine tune as there is more physical space between the different mixes. In the operational phase of this unit, it is necessary to remove the transmitter assembly from the handset of the phone so there is no interference in the circuit from room noise and the like. It must be made clear that this is a precision operation, and must be performed as such. The actual 'Blue-Box' or MF device used is standard in nature, using the conventional frequencies for such units. A simple explanation of Guard Banding follows: Guard Banding is the process of indicating to a far end SF trunk that the calling party has disconnected when, in fact, he has not. This is similar to the method used by phone phreaks for 'whistling off' a long distance (SF) trunk to prepare it for subsequent Blue-Boxing. As stated, it provides a solution to the problem indicated in this diagram.



## RESTRICTED BELL SYSTEM

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III- Page 2

How does the caller disconnect (or reset) trunk circuit B with 2600 Hz while not disconnecting trunk circuit A and resetting circuit A, thereby losing circuit B?? The answer is simple. The term 'Guard-Band' means a frequency generated within specified frequency ranges (these specifications are indicated in the technical references available from the bell system concerning telephone coupling devices and their requirements; in this application they are roughly between 300 and 3250 Hz) which causes the 2600 Hz disconnect signal to be ignored by trunk circuitry when the Guard-Band frequency accompanies it. 3200 Hz is an optimum frequency for such purposes because it is in the upper fringes of the frequency spectrum which long haul carrier trunking (SF) will pass. To 'whistle off' or reset trunk circuit B, the 'whistler' simply sends both frequencies down the line. The Guard-Band frequency prevents Tandem number 2 from disconnecting the circuit, but it is diminished to such an extent by filtering in Tandem 2 that only a small amount passes to trunk circuit B. The 2600 Hz, being lower in the frequency response spectrum passes more easily, and consequently, Tandem 3 receives much 2600 Hz but little 3200 Hz. Trunk circuit B is subsequently reset and Tandem 3 awaits key-pulsing. In this way, and with the proper application as described above, one may stack tandems and gain access into the Autovon Network.



RESTRICTED CALL SYSTEM  
SECURITY INFORMATION

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ACCESS CODE & THEORY

To access the network, one first provides himself with the above-mentioned devices and requirements. Then, you pick up the phone line connected to the MF unit and proceed to dial 907-555-1212. This is the number for Directory Assistance in Alaska. As soon as you hear the distinct hiss (or white noise) of the long distance trunk, you send a 1 second burst of 2600 Hz down the line to clear the trunk. One requirement is that the trunk must be direct to Alaska, as sometimes during heavy traffic conditions calls to Alaska are routed through secondary trunking in Seattle, Washington. The way that one can tell if it is a direct trunk or not is by letting the trunk sit undisturbed after clearing it, and waiting for the trunk to time out into its recording. If the recording says '907-1' then you're in the money, but if it says '206-1' then that means that you were routed through Seattle, and that you must re-initiate the process from the beginning. Assuming we are now on a clear trunk to Alaska we proceed to MF KP 980 111 ST. What this serves to do is set up a connection from the commercial class office in Alaska in which we landed when we whistled off the trunk to a military Air Force installation, as the prefix 980 is Air Force only. The link between the commercial office and the Air Force office is SF in nature, and this is what we apply the guard band to, with a mix of appx. 20% 3200 Hz and 80% 2600 Hz. This clears the circuit all the forward to the Air Force Tandem, without losing our first connection to the commercial class office, as explained previously. Now we are in the Air Force Tandem at 980. We then proceed to MF KP 940 111 ST. The Air Force Tandem goes over its special trunking to that particular installation which is served by that prefix. Again, this new connection is SF in nature, and we then Guard Band this new circuit with a mix of appx. 40% 3200 Hz and 60% 2600 Hz. This resets the 940 Air Force Tandem, which awaits new digits. Now, at this point we have succeeded in getting completely out of any previous association with the commercial net, which we achieved when we routed between the two Air Force (AF) Tandems. We then MF

\* KP 123+722-1110 ST. What essentially we are doing is routing over military-class trunks to a special switching network that interfaces commercial class calls and the autovon net. The access code of 123 is the code for calls to autovon, 999 is autovon's access back into the commercial net. Now normally, the switcher would block our call, because commercial users are not allowed direct access to autovon. But because we have routed over AF Tandems, the switcher checks for our military status, finds it ok, and then routes us over SF autovon trunking to the end switch center associated with the autovon prefix 722. Since the autovon number 722-1110 is non-working, a recording comes onto the circuit from the end office to announce this, at the end of which it automatically resets the autovon trunk. At this point, one may dial any 7 digit autovon number, or prefix the 7 digits with an autovon area code, such as 814 for Taiwan. The autovon call is then handled through military circuits according to a routine priority indication.

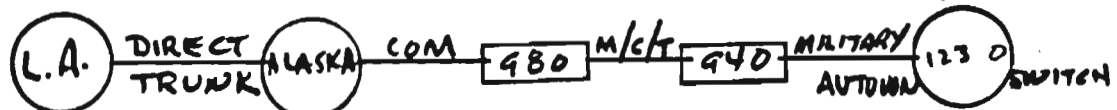
\* SEE REMARK, APPENDIX I, PG. 3 (DRAPER)

# RESTRICTED BELL SYSTEM SECURITY INFORMATION

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## ACCESS TO PRIORITY SYSTEM

The following code is used after obtaining a direct and cleared trunk to Alaska. KP+980+940+1230ST. Guard Band this circuit. What this does is set up a path to here.



P=Priority 0-4

Next, we input KP+123+P+(Area Code)+7 Digits+ST. 123 is the Autovon access code. As before we are not blocked from translation of 123 because of our coming from military trunks. This is the easiest way.

The other method is described in 001.0. After our recording resets the Autovon trunk, we then dial out on it. The switch automatically pulses a routine priority indication forward as we complete our call. The object is to Guard Band one more time, resetting the link from the Autovon Office to the switcher. Thus, we now can enter our own sequence.

KP+P(Area Code)+7 Digits+ST. Since we cleared the link, we don't give the Autovon Office a chance to establish their own priority on the call.