



Exploding The Phone

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Bibliographic Cover Sheet



Title **AUTOVON Access Info**

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Abstract Overview of how to use guard banding to get into the AUTOVON network.

Keywords AUTOVON; guard banding; guardbanding

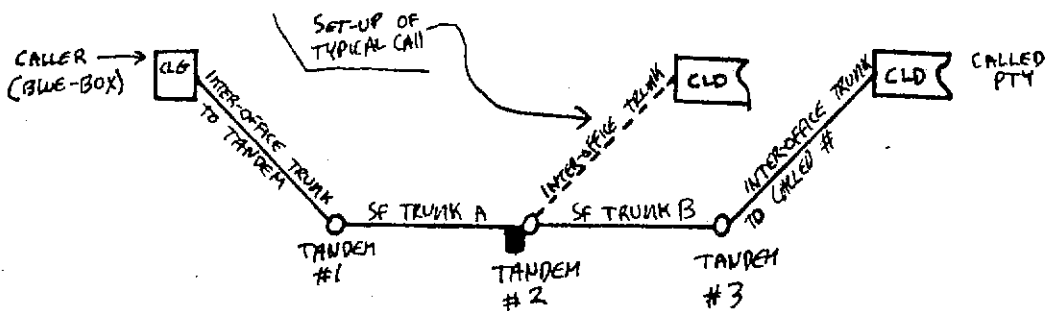
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AUTOVON ACCESS INFO

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.



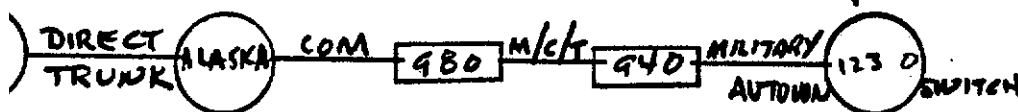
How does the caller disconnect (or reset) trunk circuit B with 2600 Hz while not disconnecting trunk circuit A and resetting circuit A, thereby losing circuit B?? The answer is simple. The term 'Guard-Band' means a frequency generated within specified frequency ranges (these specifications are indicated 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.

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.

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.