# GBPPR 'Zine Issue #21 / The Monthly Journal of the American Hacker / December 2005

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## REMOTE OFFICE TEST LINE

## 10. REMOTE OFFICE TEST LINE

## 10.1 GENERAL

This section describes the functions and equipment of the remote office test line (ROTL) for the  $5ESS^{@}$  switch.

The ROTL is a feature that allows interoffice trunk testing automatically from a Centralized Automatic Reporting on Trunks (CAROT) system. The CAROT system is a computerized system that automatically accesses and tests trunks for a maximum of 14 offices simultaneously. The 5ESS switch ROTL supports the following capabilities:

- · Transmission tests-100, 102, and 105 test lines
- · Connection appraisal—100, 102, and 105 test lines
- · Security callback
- · Trunk make-busy and restore
- · Trunk status request
- · Balance and long-term test.

Note: The 100, 102, and 105 test lines are at the far end of the trunk. Transmission test calls and connection appraisal calls are placed via ROTL toward the distant test lines. The 5ESS switch ROTL supports test calls toward the indicated test lines by providing trunk access and seizure, outpulsing of the digits necessary to reach the test line, and a tone detection capability which recognizes when the indicated test line has answered the test call.

The same transmission tests performed by CAROT/ROTL can be requested locally with the "TST:TRK" input message and with poke commands at the trunk and line work station (TLWS).

The ROTL functions are answering calls from CAROT controller, receiving information in the form of multifrequency (MF) digits, and causing trunks to be accessed and attached to the responder for transmission measurement.

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The 5ESS switch should be equipped with at least two ROTL ports. It has the ability to park incoming ROTL calls by returning test progress tone back to the CAROT system while ROTL waits for the resources needed to complete the calls. The tone detector that listens for recycling is the resource that is unavailable. The number of ROTL calls that can be parked is determined by the number of ports assigned to ROTL. The number of ROTL calls that can be served simultaneously is determined by the lesser of the number of ports and the number of transmission test function (TTF) circuits available to ROTL. The minimum TTF configuration contains one measurement circuit pack (TN304). It is capable of supporting one ROTL call. Some of the circuits on this circuit pack are shared with other test features and contention can occur. The most heavily used resource is the responder and ROTL is given a higher priority than other users of this resource. Additional measurement circuit packs may be added in a global digital service unit (DSU) group if unequipped circuit pack locations in the unit are available. Each TN304 circuit pack will accommodate one ROTL call. Two TTFs can be assigned in an switching module (SM) if the SM is equipped with two global digital service units (GDSUs). Any number of SMs can be equipped with TTFs. To make use of the additional TTFs, ROTL ports would have to be assigned across the respective switching modules.

Other ROTL functions are determining the test call instructions, seizing the trunk, and causing outpulsing over the trunk under test to the distant office.

#### **10.2 EQUIPMENT**

In the 5ESS switch, the ROTL hardware functions are provided by the TTF which is a group of circuit packs in the global DSU. These circuit packs are not provided exclusively for ROTL, but ROTL utilizes the capability provided by this hardware to perform its functions. The ROTL software uses the TTF to perform the following functions:

- Detect tones from CAROT (not MF-priming digits)
- Perform call disposition analysis for the trunk under test
- · Perform measurements, encode the results, and send them to CAROT
- · Send a detailed error code to CAROT in response to a ring forward
- · Internally connect a digital path from the trunk under test to the CAROT path.

The TTF accesses voice-frequency channels only through the bit stream as provided over the peripheral interface data bus (PIDB). Direct control resides within the module controller of the module in which it is located, and such control is exercised by software interaction over the peripheral interface control bus (PICB).

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#### REMOTE OFFICE TEST LINE

#### 10.3 TRUNK CONDITIONING

The CAROT Test Center can perform the following functions:

- · Perform a security callback
- · Remove trunks from service
- · Restore trunks to service
- Request the status of a trunk or group of trunks [in-service or out of service (locked out or disabled)].

These functions are requested by the test center via MF commands.

## 10.3.1 TRUNK MAKE-BUSY AND RESTORE

When the 5ESS switch system software receives a request to make a trunk remote maintenance-busy or a request to restore the trunk to service, the response is as follows:

- a. A determination is made whether or not authorization has been established for the make-busy or restore request. If authorization has not been established (that is, a security callback has been performed), a 120-interruptions per minute (IPM) low tone is sent to the control location.
- b. If authorization has been established, the trunk identification and the action request (make-busy or restore trunk) is passed to the software controlling trunk status AT&T 3B20D computer memory.
- c. When the trunk status has been updated, a message is returned to the ROTL and a message is printed in the 5ESS switch. The printed message lists the action taken
- d. The ROTL then returns a proper tone response to the CAROT controller. Refer to Table 10-1 for proper tone responses.

The make-busy and restore request is handled by the 5ESS switch software and an MF receiver that is shared with call processing.

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## 10.3.2 SECURITY CALLBACK

To prevent unauthorized remote locations from taking trunks out of service, several conditions must be satisfied prior to affecting the condition of a trunk. First, the remote location must identify itself as being on an authorized list. The identification (ID) digit, supplied in the priming, must correspond to a valid entry in the office dependent data (ODD) relation "ROTLCB". Second, the 5ESS switch must place a call to a prestored directory number and connect the tone detector to the callback circuit. Third, the remote location must transmit the unlocking frequency (1004 Hz) to the ROTL over the callback circuit. Fourth, the ROTL (tone detector) must recognize the unlocking frequency and must declare that authorization has been established. The authorization list states whether a particular test center is authorized to exceed the automatic maintenance limit (AML). Currently, only manual test centers are allowed to exceed the AML. The AML limits the total number of trunks in a trunk group which can be in an out-of-service condition at any one time. Once a security callback is performed, it is effective until the caller disconnects.

## **10.3.3 TRUNK STATUS REQUESTS**

In addition to conditioning trunks, any test center can request the maintenance-busy status of either a single trunk or a trunk group. A single-trunk request is followed by the trunk identity (trunk group and member), and it asks if that trunk is currently available to customer traffic. A group request asks if any trunk in the group is maintenance-busy, and if so, if there are more trunks than the AML permits maintenance-busy in the group. The proper tone responses are summarized in Table 10-2.

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## 10.4 TESTS PERFORMED BY ROTL

## 10.4.1 GENERAL

The 5ESS switch ROTL is capable of making test calls to 100-type, 102-type, and 105-type far-end transmission test lines. The transmission measuring circuits perform loss and noise measurements, and self-checks on an originating and terminating basis. Far-to-near transmission loss and near-end noise measurements are made in conjunction with the 100-type test line. Only far-to-near loss measurements are made with the 102-type test line. The 105-type test line provides 2-way transmission loss and noise measurements, noise with tone, gain slope, and return-loss measurements.

The test center (Figure 10-1) originates a call to the ROTL office via a Direct Distance Dialing (DDD) network connection. The call is processed with the central office switching equipment in the same manner as a regular call. When the ROTL has been seized, it returns a 2225-Hz test progress tone to the test center. When the 5ESS switch is prepared to receive test priming information (an MF receiver is connected), the test progress tone is turned off. This is an indication to the test center to transmit priming information to ROTL. This priming information includes the type of action to be performed. Any error detected in the priming information will result in 120 IPM being returned by ROTL. When the action specified is a transmission test, the priming information also includes the trunk under test identity and the far-end test line (FETL) digits. Refer to Table 10-3 for a summary of ROTL priming information. At the conclusion of each action (either successful or unsuccessful), ROTL can be given a recycle command (1 second of 1300 Hz). The ROTL will return to the state of preparing to receive digits. The ROTL will send the test progress tone and when it is ready to receive a new command, the test progress tone will terminate. At the conclusion of all testing, CAROT sends a drop access command (2 seconds of 1300 Hz) which causes ROTL to disconnect. If CAROT disconnects, ROTL will also disconnect and release all resources associated with the call.

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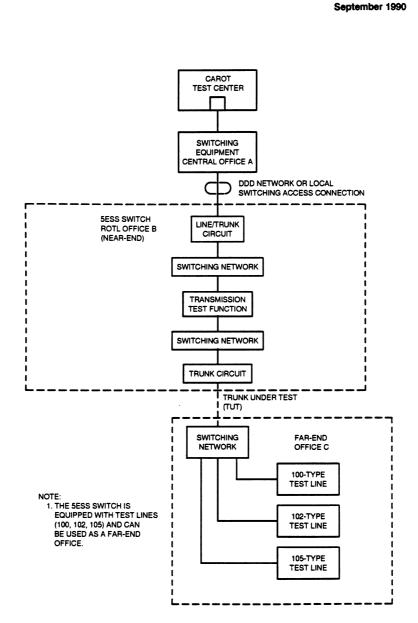


Figure 10-1 — 5ESS Switch ROTL Application

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## 10.4.2 REMOTE OFFICE RESPONDER TESTING

## 10.4.2.1 Transmission Tests (100-Type Test Line)

This test is a 1-way (far-to-near) loss and/or noise transmission test to a 100-type test line in the far-end office. The test center transmits MF test priming information to the 5ESS switch which is interpreted by the ROTL program. The ROTL program decodes the priming information and connects a TTF tone detector to the trunk under test (TUT) and reserves a TTF responder. If either of these resources are not available, ROTL will queue them. When the TUT is seized, a 0.5-second burst of test progress tone is sent to CAROT by ROTL. The FETL number is outpulsed exactly as received in the priming. The far-end office connects to a 100-type test line. Then, the far-end office transmits a nominal 1004-Hz for a nominal 5.5 seconds to the ROTL office. This tone is followed by a quiet termination. The tone is detected by ROTL and another 0.5-second burst of test progress tone is sent from ROTL to CAROT. If prior to the 1004-Hz tone any audible rings or other signals (low tone) are heard by ROTL, it will send low tone to CAROT that follows the envelope of the received signal. Reorder or busy tone will appear to be heard directly from the far end by CAROT, but actually the tones have been regenerated. If the test progress tone is heard instead of the expected milliwatt tone, reorder will be sent to CAROT. The near-end responder is activated and a third 0.5-second burst of test progress tone is sent to CAROT. This tone is the signal that CAROT can start making measurements. If the responder in the near-end office is requested by the test center to make a 1000-Hz loss measurement, the near-end responder measures the received signal from the trunk under test. The responder then generates a measurement data signal consisting of a 1200-Hz guard tone and a 2200-Hz data tone followed by a 1200-Hz trailing guard tone. The duration of the data tone is proportional to the amplitude of the received signal. The measurement data signal is forwarded to the test center. Then, the ROTL office sends a 1000-Hz signal to the test center for as long as the 1000-Hz signal is present from the far-end office. The near-end responder resets when the tone is turned off by the far-end office to await additional MF commands from the test center. The ROTL will continue to wait for measurement commands until one of the following is received:

- · CAROT disconnects
- · Recycle
- · Release
- · Release/make-busy.

The maximum elapsed time is 3 minutes.

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## 10.4.2.2 Transmission Tests (102-Type Test Line)

This test is a 1-way loss test (far-to-near) to a 102-type test line in the far-end office. It follows a pattern similar to the 100-type test line. The test center transmits MF test priming information to the 5ESS switch which is interpreted by the ROTL program as a request to connect to the trunk under test. The terminating 102-type test line directory number is then outpulsed to the far-end office over the trunk under test. Unlike the 100 test, no TTF responder is reserved at this point. When the test line is seized at the far-end office, the 102-type test line transmits  $1000 \pm 10$  Hz at 0 dBm to the ROTL office. When this tone is detected, the second burst of test progress tone is sent to CAROT as in the 100-type test line call. At this point, ROTL requests a TTF responder. The third burst of test progress tone is started when the responder is requested, terminated, available, and ready to make measurements. These types of test lines interrupt the signal periodically at approximately 10-second intervals. The responder in the ROTL office makes a loss measurement only when the tone is present so that the interruption in the 1000 Hz from the 102-type test line does not cause any error in the measurement.

## 10.4.3 RESPONDER-TO-RESPONDER TESTING

## 10.4.3.1 Transmission Tests (105-Type Test Line)

## 10.4.3.1.1 General

Responders provide 2-way transmission loss and noise measurements and a variety of other measurements of the trunk under test. The test center controls the measurements of trunks between the near-end office and a far-end office containing the 105-type test line. All measurement results on the trunk under test are sent back to the test center in the form of frequency-shift data signals.

The 105 call follows a pattern similar to the 100-type and 102-type test line calls. When the trunk under test has been seized, the first burst of test progress tone is sent and the directory number of the far-end 105-type test line is outpulsed. The far-end sends back test progress tone while it is queuing for a responder. The test progress tone is terminated when the far-end responder is ready. The termination of this test progress tone causes the second burst of test progress tone to be sent to CAROT by ROTL. After the connection has been established and the far-end responder has been connected, ROTL makes a bid for the near-end responder at the ROTL office. The third burst of test progress tone is sent to CAROT while waiting on a responder as in the 102-type test line call. When the responder is available, control is given to the CAROT Test Center. The test center controls the action of the responder.

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#### 10.4.3.1.2 Loss Measurements

Loss measurements are initiated when the test center sends a 2/6-MF command signal, which requests loss measurements, to the ROTL responder and to the far-end responder

The ROTL responder sends the 1200-Hz guard tone to the test center. Simultaneously, the far-end responder sends a 1004-Hz (1-mw) test tone over the trunk under test. This tone level is to be measured by the ROTL responder.

The ROTL responder measures the 1-kHz signal received from the far-end responder. It converts the measured loss to a 2200-Hz data tone. Then, the ROTL responder transmits the 2200-Hz data tone to the test center immediately following the 1200-Hz guard tone. The 2200-Hz data tone is followed by a second 1200-Hz guard tone. The ROTL responder also transmits a 1000-Hz (1-mw) test tone to the far-end responder after the far-to-near transmission test has been made. The 1000-Hz test tone transmitted to the far end from the ROTL responder allows the near-to-far loss on the trunk under test to be measured.

The far-end responder measures the level of the 1000-Hz signal from the ROTL responder. The received signal is converted to a 2200-Hz data signal which is transmitted back toward the test center along with guard tone on both sides of the data signal. The value of the measurement is indicated by the length of time that the responder sends 2200 Hz. The relationship between the measurement and length of the 2200-Hz signal is logarithmic. The ROTL responder detects the 1200-Hz guard tone. When the guard tone is detected, the trunk under test is bridged to the access connection. The access connection routes the measurement results to the test center. After completing the loss measurements, the responders return to a signal-receive state awaiting further command signals from the test center.

#### 10.4.3.1.3 Noise Measurements

Noise measurements are initiated when the test center sends the appropriate 2/6-MF command signals to the ROTL responder and far-end responder.

The far-end responder terminates the trunk under test. The ROTL responder measures the near-end noise, converts the measurements into a 2200-Hz data signal, and transmits this signal (as guard-data-guard) to the test center. The test center then sends a second 2/6-MF signal to the responders.

The far-end responder recognizes the MF signal and measures the far-end noise. During the measurement, the ROTL responder provides a termination for the trunk under test. The far-end responder transmits a 1200-Hz guard tone, followed by the 2200-Hz data signal, and then 1200-Hz guard tone toward the test center. The ROTL responder detects the 1200-Hz guard tone and bridges (cuts through) the trunk under test to the access connection, so that the guard-data-guard (2200-Hz data signal) from the far-end responder can be sent to the test center. The responders then return to a signal-receive state awaiting further MF command signals from the center.

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The test center causes self-checks to be made on both near-end (simulated) and far-end responders for loss, noise, and other tests that are requested. The results of the self-checks are transmitted back to the test center. These tests consist of the following:

- · Return-loss measurement
- · Noise with tone measurement
- · Gain-slope measurements.

The return-loss measurement is initiated when the near-end responder receives 2 or 3 MF digits as a request for a return-loss measurement. It relays the layer 2 (and 3, if required) MF digit(s) which denote the test desired to the far-end responder (Table 10-4). The far-end responder applies quiet termination for 2.56 seconds upon receipt of the MF command. The three return-loss tests are: echo return-loss, singing return-loss, and singing return-high loss. All three tests have the same timing.

As soon as the near-end responder receives the test request, it starts sending a guard tone (1200 Hz) to the control location. A guard tone is sent for 2.6 to 2.75 seconds. At the same time, the near-end starts transmitting the proper signal to the far end and also measuring the return-loss. The "return-loss" signal is not a signal sent by the far-end responder but is the portion of the transmitted signal which is reflected back. The transmit-measure process lasts for 2.56 seconds. Note that the 2.56-second quiet termination provided by the far-end responder will not be in exact synchronism with the near-end quiet termination due to transmission delays.

After the near-end responder completes the measurement, it sends data (2200 Hz) to the control location. The duration of the data signal is proportional to the return-loss measurement. Then the near-end sends a guard tone for 25 to 50 milliseconds. As soon as the near-end completes the measurement, it also applies a quiet termination to the trunk under test. This quiet termination lasts for 2.56 seconds. At the end of the 2.56-second quiet termination interval, the near-end is ready to receive data from the far-end. It will wait for data for 2.56 seconds, and if none is received in that period, the near-end resets. If data is received, the near end relays it to the control location, and at the end of the signal, resets.

After the far-end receives the test request (MF) digit, it applies a quiet termination for 2.56 seconds as previously described. It then transmits the test signal (according to which return-loss test is being performed) and measures the return signal for 2.56 seconds. It then transmits the measurement to the near-end in the guard-dataguard format as described for the near-end responder. The far-end responder then

Note that the time intervals as shown in (Figure 10-2) for the far- and near-end responders are not synchronous. Transmission delays are not shown.

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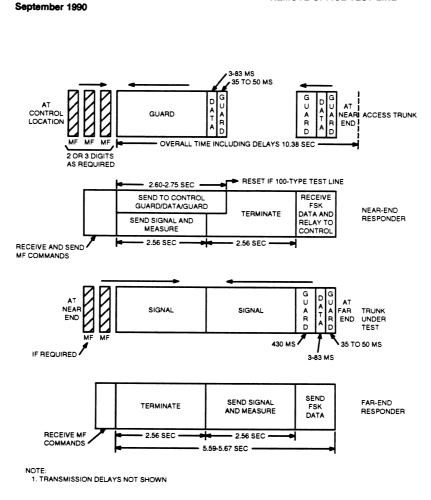


Figure 10-2 — Timing Interval for Return Loss Measurements

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The noise with tone measurement is the same as the loss measurement described in Part 10.4.3.1.2 of this section except for the following:

- The received tone is processed in the noise measurement path with the addition of a 1000-Hz band rejection filter.
- The transmitted tone from the far-end responder toward the near end is always 1004 Hz at -16 dBm. This is the first action that the far-end responder takes after satisfactorily receiving a command to make the noise with tone measurement.

The gain slope measurements involve making loss measurements at the following three frequencies and levels:

- · 404 Hz at -16 dBm
- 1004 Hz at -16 dBm
- · 2804 Hz at -16 dBm.

The three frequencies are used to measure the bandwidth of the trunk which is the range of frequencies that the trunk can transmit.

Table 10-4 summarizes the ROTL responder interpretation of the MF signals from CAROT or other locations. The column labeled "MF Signals" shows the sum of two frequencies. The power of the two tones is measured as though the tones were continuous.

There are four columns called "LAYER" numbered 0 through 3. These indicate the state of the MF receiver in the responder. The first two layers, 0 and 1, are used only for a near-end responder interfacing with a ROTL. The purpose of layer 0 is to inform the responder (in the ROTL office only) that the impedance of the trunk under test is 600 ohms, that the office is arranged for testing at test point 0, and that the far-end test line is code 100, 102, or 105. This information is transmitted via the first MF pulse received in the 0 layer of the MF receiver. When the responder in the ROTL office is in the 0 or 1 layer, no MF information is forwarded to the far end of the trunk under test.

The release MF signal in any layer causes the responder to signal the test line that the trunk under test should be released. If the two pulses are received in succession, then the responder will signal the ROTL that the trunk under test should be made busy and then released. A delay of 200 ms is begun, after the receipt of the first 900 Hz plus 1300 Hz MF signal, to check for the occurrence of another 900 Hz plus 1300 Hz MF signal within that interval.

The layer MF pulse causes the MF detector in the responder to go to the next higher state (for example, from layer 0 to layer 1). When an MF signal other than RL or layer is received with the MF receiver in layer 0, it must shift to layer 2 so that the next MF will be interpreted as a test instruction and be transmitted to the far end of the trunk under test. Note that the far-end responder is initially in layer 2. Layers 0 and 1 signals are not transmitted to the far end.

When the responder is used with a code 105-type test line or a miniresponder is used at the terminating end of the trunk under test, the initial state of the MF receiver must be layer 2. This is necessary because the first MF pulse will contain test rather than conditioning information.

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At the conclusion of a transmission test, CAROT normally sends a release digit (MF 5 digit) to accomplish the following:

- · Release the test equipment
- · Return the trunk to its prior test condition
- · Recycle ROTL in preparation for a new set of priming.

The CAROT can also send a release/make-busy command (two MF 5 digits). This command recycles ROTL but leaves the trunk in an out-of-service/maintenance/CAROT (OOS/MTCE/CAROT) state. The CAROT can also send a recycle command (1 second, 1300 Hz) which has the same effect as the release. The recycle command can be given at any time and is also used at the conclusion of each nontransmission test command to recycle ROTL. The ROTL responses to the above three commands are summarized in Tables 10-5 and 10-6.

## 10.4.4 BALANCE AND LONG-TERM TEST

The terminal balance function of the ROTL involves connecting a tone-and-quiet source to a selected outgoing trunk from the ROTL central office. Upon receipt of the same information as a transmission test, except for a different request code, a call is originated by the ROTL over the selected trunk. When the call terminates, a 1000-Hz start test tone burst is expected by ROTL. After it occurs, the tone-and-quiet source is attached to the trunk in the ROTL office. This source provides 10 seconds of 1004-Hz (0 dBm) tone followed by a 30-minute period of quiet balance termination during which balance measurements or adjustments can be made at the far end of the CAROT trunk or line. The test is terminated by receiving a disconnect on the trunk under test. After 60 seconds of quiet termination, the ROTL is no longer associated with this test, and a recycle signal from the test center will have no effect. Prior to this, a recycle will be accepted.

## 10.4.5 CONNECTION APPRAISAL TEST

The Connection Appraisal feature provides for conducting a transmission test on a connection setup from the 5ESS switch office to a test line in a distant office with normal routing and trunk selection. More than one trunk may be used in a built-up connection. The directory number of the far-end transmission test line is included in the priming information. When priming is complete, a test line in a far-end office is dialed up. When the test line is seized, the test sequence proceeds in a manner similar to a routine transmission test.

For a connection appraisal test, the ROTL originates a call in a subscriber-like manner by using digits contained in the priming information sent from the control location. The sequence of signals is identical to that for trunk transmission tests with the following variations:

- Call processing trunk hunting mechanisms are used to determine the trunk to be used for the call.
- · There is no monitoring for supervisory hits.
- The overall connection, instead of a particular trunk, is measured.
- There is no make-busy capability.

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#### 10.5 OFFICE DEPENDENT DATA REQUIREMENTS

Office dependent data is required in the 5ESS switch for the ROTL feature. The CAROT accesses ROTL through the DDD network by dialing a directory number assigned to ROTL which will terminate at test software in the 5ESS switch. Since a directory number is assigned to ROTL, the ROTL directory number must be associated with a unique route index. A route index defines how a call is to be routed. The route index associated with the ROTL directory number routes to a trunk group of ROTL test ports. The ROTL test ports must be assigned in the switching modules with transmission test functions.

The 5ESS switch data base must contain the callback directory number of the CAROT and any directory number of authorized manual location(s) for the ROTL security callback. The ROTL security call is described in Part 10.3.2 of this section. This list of authorized locations must be defined in the 5ESS switch. The list also contains the authority for each directory number (none, manual, or automatic). The "none" maintenance test mode inhibits any and all callers from a given CAROT from changing the trunk status of the tested trunks. All "manual" mode locations have the authority to remove trunks from service allowing the automatic maintenance limit to be exceeded. The "auto" maintenance test mode indicates that the CAROT or control location can automatically remove trunks from service if they fail specific tests. The automatic maintenance limit with the "auto" mode cannot be exceeded. The automatic maintenance limit is established by the operating telephone company customer and states the number of trunks that can be removed from service.

The screening index and digit analysis selector that will be used for ROTL security callback and connection appraisal calls must be defined. The screening index and digit analysis selector are accessed during digit analysis of ROTL calls.

The assignment of office dependent data is made via the initial office data administration run or recent change menus and view. The data assignments required for ROTL consist of the following:

- · A trunk group and trunk group member for ROTL test ports
- · Route index to the trunk group of ROTL test ports
- · Line class code for ROTL
- · ROTL test line
- · Digit analysis selector and screen index data
- · CAROT code and security callback data.

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The data assignments in the 5ESS switch can be made via the video display terminal, TELETYPE  $^{@}$  4025BS teletypewriter terminal, VT\*-100 video terminal, or equivalent, by using the interactive process provided by the recent change menus and views. With systems using program documentation standards commands, use the following input messages to access the recent change menus and views.

- · RCV:MENU:APPRC!-5E1(1A) software release
- RCV:MENU:APPRC;PRINT!—5E1(2) and later software releases.

With systems using the man-machine language (MML) commands [5E1(2) and later software releases], use RCV:MENU,DATA APPRC,PRINT; to access the recent change menus and views. Refer to the 5ESS Input Message Manual [AT&T 235-600-700 (formerly IM-5D000-01)] for further details.

The recent change view transition procedures differ depending on the software release in the office. If you are not familiar with the procedures for going from one view to another, refer to the appropriate section for further details concerning the recent change menus and views. The appropriate documents are listed in the REFERENCES paragraph of this section.

The recent change views that are necessary to make the data assignments for ROTL and examples showing data assignments are as follows:

- TRUNK GROUPS—TRUNK GROUP VIEW (View 5.1) (Figure 10-3)
- TRUNKS—GROUPS AND MEMBER VIEW (View 5.5) (Figure 10-4)
- ROUTING AND CHARGING—ROUTE INDEX VIEW (View 10.2) (Figure 10-5)
- LINE MISC-LINE CLASS CODE VIEW (View 4.1) (Figure 10-6)
- LINES-PBX DIRECT INWARD DIALING AND TEST VIEW (View 1.5) (Figure 10-7)
- MISC-OFFICE PARAMETERS VIEW (View 8.1) (Figure 10-8)
- MISC-REMOTE OFFICE TEST LINE VIEW (View 14.2) (Figure 10-9).

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<sup>\*</sup> Trademark of Digital Equipment Corporation

#### **REMOTE OFFICE TEST LINE**

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#### 10.6 REFERENCES

The following documents may be consulted for additional information:

- AT&T 235-600-700: Input Message Manual—5ESS Switch (formerly IM-5D000-01)
- AT&T 235-600-750: Output Message Manual—5ESS Switch (formerly OM-5D000-01)
- · AT&T 235-080-100: 5ESS Switch Translation Guide (formerly TG-5)
- AT&T 235-118-200: Recent Change Procedures—Menu Mode—5E2(1) and later Software Releases—5ESS Switch
- AT&T 235-118-201: Recent Change Procedures—Batch Release—5E2(1) and later Software Releases—5ESS Switch
- AT&T 235-118-202: Recent Change Procedures—Text Interface—5E2(1) and later Software Releases—5ESS Switch

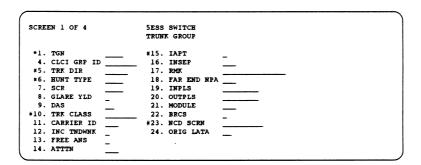


Figure 10-3 — Example of Trunk Group Assignments (Sheet 1 of 4)

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```
SCREEN 2 OF 4
                                          SESS SWITCE
ANNC TRUNKS
26. ANNC CYCL _
27. BARGE IN _
                                 35. GL ANN TGN
36. BILLING DN
                                                                   48. CAMAQ
49. DIR CON DN
50. BUSY LAMP
51. MK BUSY KEY
                                 37. CUTTHRU
39. VALNPA
      OPERATOR TRUNKS 40. VALNXX1
OUTPL REQ 41. VALNXX2
AUDIBLE 42. VALNXX3
28. OUTPL REQ _
29. AUDIBLE _
30. SIGNAL
                                                                   52. FGB BILL
53. CMC
                                 43. VALNXX4
                                                                   54. BLK NO ANI
55. ATT BILL
31. FREE TERM _
                                 44. VALNXX5
45. VALNXX6
33. FINAL
34. TSPS TYPE
                                  46. VALNYY7
                                                                   56. CMC ID
                                 47. VALNXX8
```

Figure 10-3 — Example of Trunk Group Assignments (Sheet 2 of 4)

```
SCREEN 3 OF 4 5ESS SWITCE
TRUNK GROUP

VERIFY ONLY
57. GRP SIZ _____
58. ACT SIZ _____
59. SATELLITE ___
60. TERM SFG __
```

Figure 10-3 — Example of Trunk Group Assignments (Sheet 3 of 4)

```
SCREEN 4 OF 4

SESS SWITCE
TRUNK GROUP

WARNING: These fields will update all members in the group if
not left blank or if "CHange" fields are marked "Y". The data
displayed are fefault values and does not reflect existing data.

61. TRANS CLASS 69. STOPGO 77. SUPV
62. CH TRAN CLASS 70. CH STOPGO 79. ANI 63. IDLE STATE 71. BOLD BUSY 80. CH ANI 64. CH IDLE STATE 72. CH HOLD BUSY 80. CH ANI 65. IN START DIAL 73. SATELLITE 66. CH IN START DIAL 73. SATELLITE 66. CH IN START TO THE FORM FOR THE FORM
```

Figure 10-3 — Example of Trunk Group Assignments (Sheet 4 of 4)

## REMOTE OFFICE TEST LINE

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SCREEN 1 OF 2	5ESS SWITCH	
	TRUNK NUMBER	
*1. TGN	20. CGASPN	
*2. MEMB NBR	21. HOLD BUSY	
10. TEN	22. SATELLITE	
11. DEN	23. TRF SAMPLE	
12. LTP	24. CAMOPTLK TEN	
13. CLCI TRK ID	24. CAMOPTLK TEN 25. CAMOPTLK DN	
14. TRANS CLASS		
15. SUPV	27. OTODPN1	
16. IDLE STATE	28. OTODPN2	
17. IN START DIAL	29. SLC OTODPN3	
18. OUT START DIAL	30. SLC OTODPN4	
19. STOPGO	35. BRCS	

Figure 10-4 — Example of Trunk Group Member Assignments (Sheet 1 of 2)

```
SCREEN 2 OF 2

SESS SWITCH
TRUNK MEMBER

36. AUTO
37. SLVLD SPN
38. ANI
```

Figure 10-4 — Example of Trunk Group Member Assignments (Sheet 2 of 2)

Figure 10-5 — Example of Route Index Assignments

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```
*1. LCC

*2. RAX

*3. SERVCL

*4. TERM

*5. SCR

6. LINESCRN

7. DAS

*8. INSEP

*9. DESEP

11. RMK
```

Figure 10-6 — Example of Line Class Code Assignments

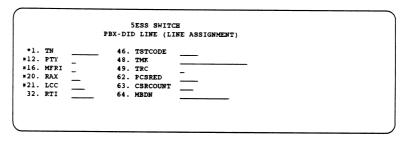


Figure 10-7 — Example of Test Assignments

#### REMOTE OFFICE TEST LINE

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```
SCREEN 1 OF 4
                             SESS SWITCH
                 OFFICE PARAMETERS (MISCELLANEOUS)
*1. OFFICE ID
                       13. IMPLD NPA _
                                                  APT TESTING
                       2. IMLT2
                                             20. HRSTART
 3. EXSIG
                       16. PERC2SILC _____
17. HOME NPA
                                             21. MINSTART
22. DURATION
 4. MANROUT
 5. POTENT
                       18. TD-WINDOW
 6. TIMEZONE
7. DST
                                             23. RUNSUN
24. RUNMON
                       19. CCS
 8. CUTTRANS
                                              25. RUNTUE
 9. HOLIDAY
                                              26. RUNWED
10. SES
11. POFFLOSS
                                             27. RUNTHR
28. RUNFRI
12. RING TOT
                                              29. RUNSAT
```

Figure 10-8 — Example of Screen Index and Digit Analysis Selector Assignments (Sheet 1 of 4)

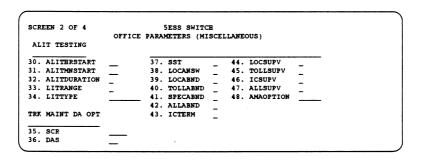


Figure 10-8 — Example of Screen Index and Digit Analysis Selector Assignments (Sheet 2 of 4)

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SCRI	EEN 3 OF 4	5ESS SWITCH FICE PARAMETERS (MISCELLANE)	ous)	
	EADAS/RMAS OPTION	S PERM SIG & COIN		TOUCH TONE FRAUD
49.	EADASOPT	55. 5 MIN PST	62.	ALLOW TTF
50.	RMASOPT	56. VAR PST	63.	PRINT TTF
		57. VAR INT	64.	SIGI
	CAMA OPTIONS	58. COIN INT		<del>-</del>
		<del>-</del>		OPEN CKT TEST LINE
51.	TRKTRCD1	DIVISION OF REVENUE		
52.	TRKTRCD2		65.	TONE DUR
53.	TRKTRCD3	59. DRON	66.	OPEN INT
54.	TRKTRCD4	60. DRHRLY		
	<u></u>	61. DRCOUNTTYPE		

Figure 10-8 — Example of Screen Index and Digit Analysis Selector Assignments (Sheet 3 of 4)

SCREEN 4 OF 4	5ESS SWITCE
	OFFICE PARAMETERS (MISCELLANEOUS)
CI OPTIONS	ALARM REPORTS
67. CARRID	70. REPORT SUMMARY
MULTIFREQ RINGING	COMMUNICATION MODULE
69. REVMAN _	71. SIDE 0
	72. SIDE 1
	73. CONV

Figure 10-8 — Example of Screen Index and Digit Analysis Selector Assignments (Sheet 4 of 4)

## REMOTE OFFICE TEST LINE

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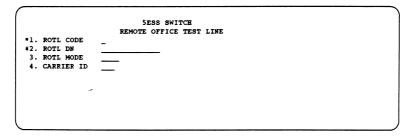


Figure 10-9 — Example of Control Location Assignments

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## REMOTE OFFICE TEST LINE

TABLE 10-1 ROTL RESPONSE FOR MAKE-BUSY OR RESTORE					
RESPONSE	CONDITION				
Test Progress Tone-2225 Hz	Trunk made busy or restored.				
Two Burst Test Progress Tone* (2225 Hz)	Trunk made busy and automatic maintenance limit has been exceeded.				
60-IPM Low Tone	Request refused because automatic maintenance limit would be exceeded or trunk is traffic busy.				
120-IPM Low Tone	Security call back for ROTL unlock was not successful.				
* Each tone and quiet separation period is $520 \pm 80$ ms.					

TABLE 10-2 ROTL RESPONSE FOR TRUNK OR TRUNK GROUP STATUS REQUEST					
RESPONSE	CONDITION				
Two Burst Test Progress Tone* (2225 Hz)	Some trunks in group are made busy, but automatic maintenance limit has not been reached.				
60-IPM Low Tone	Individual Trunk - Trunk out of service.				
60-IPM Low Tone	Trunk Group - The number of trunks in the group out of service at or above the automatic maintenance limit.				
120-IPM Low Tone	Priming information error.				
Test Progress Tone-2225 Hz	Individual Trunk - Trunk in service.				
Test Progress Tone-2225 Hz	Trunk Group - All trunks in group in service.				
* Each tone and quiet separation period is $520 \pm 80$ ms.					

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	R	TABI OTL PRIMIN	LE 10-3 G INFO		ATIO	N		
				DIGIT	S TRA	NSMI	TED TO ROTL MF F	RECEIVER
ROTL	JSAGE		1	2	3	4		· · 24 (max)
		100-type	KP*	0	0			
		102-type	KP	0	2		Trunk Trunk Group Mem-	
m m .		105-type	КР	0	5		(4) ber (4)	
Transmission Test	Override	100-type	КР	1	0		Trunk	Far-End Test Line
	Made Busy	102-type	КР	1	2	M	Identifier†	Number‡ + ST+
		105-type	КР	1	5	D I		(≤ 11 digits)
Balance and Long Term Tests			КР	4	0	F		
16565	Override N	Aade Busy	КР	4	1	E		
Make Busy and Restore	Make Trui Busy	nk Remote	КР	5	0	K		
make busy and nestore	Restore Trunk Made Remote Busy		КР	5	1		Trunk Identifier†	ST
	Individual		KР	5	2		·	
Trunk Status	Trunk Gro	up by Trunk	КР	5	3			
Request	Trunk Group by Group		КР	5	4		Trunk Group I	lentifier + ST
Callback Unlock Request		KP	5	5	ID	ST		
	100-type		KP	6	0			
Connection Appraisal	102-type		КР	6	2		Far-End Test Line Number§ +ST (≤ 15 digits)	
* KP = Kev Pulse (Start F	105-type		КР	6	5			

<sup>\*</sup> KP = Key Pulse (Start Pulse) † ST = Stop Pulse

<sup>‡</sup> Exact digits to be outpulsed § 7, 10, or 11 digit directory number of far-end test line.

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TABLE 10-4 (NOTE) INTERPRETATION OF RESPONDER MF COMMANDS						
MF SIGNALS Hz	LAYER 0	LAYER 1	LAYER 2	LAYER 3		
700 + 900	600, 0, 105	-	Loss Self-Check: The responder closes a loop to measure its input and output of 1004 Hz (0 dBm)	High frequency return self-check measurement		
700 + 1100	600, 0, 102	-	Loss Measurement at 1004 Hz (0 dBm)	High frequency return loss measurement		
700 + 1300	600, 0, 100	-	Noise Self-Check: Far-end responder checks itself (1004 Hz at -67 dBM)	-		
700 + 1500			-	-		
700 + 1700	•	-	Echo return loss measurement	Echo return loss self- check measurement		
900 + 1100	-	-	C-noise measurement with far-end responder	-		
900 + 1300	Release	Release	Release	Release		
900 + 1500	-	-	Low frequency return loss measurement	Low frequency return loss self-check measurement		
900 + 1700	-	-	Loss measurement at 1004 Hz at -16 dBm	Self-check measurement at 1004 Hz at -16dBm		
1100 + 1300	-	-	Loss measurement at 404 Hz at -16 dBm	Self-check measurement at 404 Hz at -16dBm		
1100 + 1500	-	-	Noise self-check measurement on responder in the ROTL office	-		
1100 + 1700	Layer	Layer	Layer	-		
1300 + 1500	-	•	Noise measurement with the responder in the ROTL office	-		
1300 + 1700	-	-	Loss measurement at 2804 Hz at -16 dBm	Self-check measurement at 2804 Hz at -16 dBm		
1500 + 1700	-	-	Noise measurement in the presence of a 1004-Hz tone at -16 dBm	Noise with tone self- check measurement through the appropriate filters		
Note: Dashes indicate unassigned code-state combinations.						

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# TABLE 10-5 (NOTE) ROTL RESPONSES TO RECYCLE, RELEASE, AND RELEASE/MAKE BUSY AFTER TRANSMISSION TESTS

CAROT COMMAND SENT TO ROTL	ROTL RESPONSE TO COMMAND	MEANING
Release or recycle	Test progress tone	Normal, trunk release, ready for new priming at end of test progress tone.
	60-IPM low tone (busy)	A supervisory hit or disconnect was detected on the trunk under test during testing. (A recycle command is normally sent by CAROT to recycle ROTL after this response is receive.)
Release make busy	Test progress tone	Normal, trunk make busy, ready for new priming at end of test progress tone.
	120-IPM low tone (reorder)	No authorization to remove trunks (security call back not performed).
	60 IPM (busy)	Could not busy trunk, probably due to AML being exceeded.
	Silence	A recycle authorization sent by CAROT. ROTL will return 60 IPM indicating that a hit or disconnect was detected on the trunk under test. A second recycle is required to recycle ROTL.

Note: There is no monitoring for supervisory hits or disconnects on 102-type tests, or on connection appraisal. At any time, ROTL sends 120-IPM low tone (reorder) to CAROT; there may be additional information available from ROTL. This information can be requested by sending a ring forward request (1300 Hz for 100 ms). Ring forward is not used by the 5ESS switch ROTL in normal testing as it does not perform operational tests. The response to ring forward will be in the guard-data-guard format. An alternative is to request a noise measurement. It will also trigger the guard-data-guard reply, which can be interpreted as a noise reading and converted to the error code. Table 3-6 lists the 5ESS switch ROTL errors.

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## REMOTE OFFICE TEST LINE

TABLE 10-6 RING FORWARD ERROR REPLIES			
92A PULSE LENGTH (milliseconds)	H310 NOISE READING* (dB)	MEANING	
9	18	Unknown, no further information	
17	22	Route failure to test trunk	
25	26	Failed to set up path to trunk	
33	30	Failure during call disposition analysis	
41	34	Failure at trunk under test	
49	38	Failure to close path to trunk	
57	42	Could not understand priming	
65	46	No answer supervision received on trunk	
73	50	Security callback has not been completed	
81	54	Hardware failure	
89	58	Failed to activate (seize) trunk	
97	62	Failure during outpulsing	
105	66	Glare seen on trunk	
113	70	Interrupt seen at trunk process	
121	74	TTF CUT tone detector detected wrong tone	
129	78	Data base error	
137	82	Failed to get a wink	
153	90	Failed to send milliwatt on a BALT test	

<sup>\*</sup> The noise readings are taken using either the 92A or H310 test sets, the two common test sets used for ROTL. The H310 test set is only capable of determining the ring forward error by making a noise measurement. The error reply is converted into an equivalent noise reading in dB. The 92A test set can make the noise measurement, or it has provisions for measuring the duration of the error tone directly in milliseconds.

## Nortel DMS-100 Line-to-Trunk Translations

## **Description**

When a call originates from a line, the associated line tables are read and interpreted. The call then enters the screening tables where digit analysis begins. After some general pre–screening or pre–translation is performed, the call may progress into more detailed screening based on NPA–NXX digits to determine the path into the designated routing tables for defining the destination trunk for termination of the call.

## **Operation**

Line—to—trunk translations can be traced using a simplified block diagram, representing the major functions within the translation process, as shown in the following figure:

The *lines* tables contain information about the originator of the call in a DMS-100 switch. These tables have three primary functions:

- Establish the hardware function and specify the hardware location for each line.
- Indicate the type of ringing codes used or options and features assigned to each line.
- Provide the next logical step in translation.

The *screening* tables contain the information used to analyze the digits that the DMS–100 switch receives. This screening process tests the digits dialed before continuing to the next routing stage, to determine, for example, whether this call is local or non–local.

The screening tables establish the call type based on the digits received. The three basic call types are:

- Operator Assisted (OA)
- Direct Dial (DD)
- No Prefix (NP)

The *routing* tables route the calls to their final destination. The information found in these tables dictates how and where a call will be completed, or if the call will route to a recorded announcement or treatment.

The *trunking* tables contain detailed information about trunks originating and terminating in the DMS–100. Each trunk connected to the office is represented by entries in trunk tables.

## Translations Table Flow for Line-to-Trunk Translations

As soon as a line goes off–hook, the associated Line Concentrating Module (LCM) informs the switch that the line went off hook and provides the Line Equipment Number (LEN). The originating line has its LEN stored in table LENLINES (Line Assignment). From the data stored in table LENLINES, the switch determines the Directory Number (DN), party, and options of the line. If there are features associated with the line, the switch accesses table LENFEAT (Line Features) to determine what these features are.

Field LNATTIDX (Line Attribute Index) in table LENLINES points to a tuple in table LINEATTR (Line Attributes). The entries in this tuple determine the following:

- The standard pre-translator to route to in table STDPRTCT (List of Standard Pre-Translation Tables).
- The Local Call Area (LCA) subtable to use for local call checking.
- The Serving Numbering Plan Area (SNPA) to access in table HNPACONT (List of Home NPA Code Subtables).

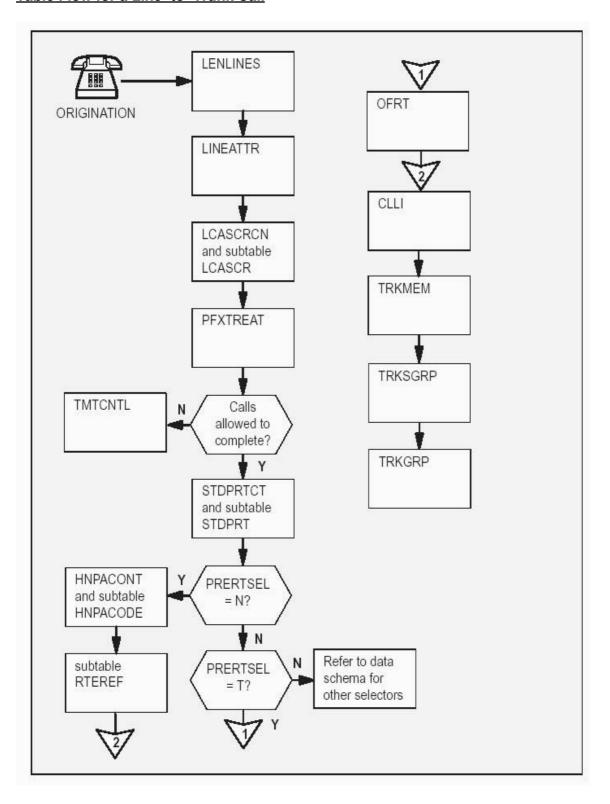
Verification of the call type is done in table LCASCRCN (Local Calling Area Screening Control) and its subtable LCASCR and in table PFXTREAT (Prefix Treatment).

The call then routes to table STDPRTCT and its subtable STDPRT. At this point, call processing will continue either through table HNPACONT and its subtables or through table OFRT (Office Route). The pre–translator route selector entered in subfield PRERTSEL of subtable STDPRT determines how call processing progresses. Information on the valid values for this subfield can be located in the data schema section.

The Common Language Location Identifier (CLLI) of the trunk datafilled in subtable HNPACONT.RTEREF or table OFRT is listed in table CLLI. Trunk group type and screening information are provided in table TRKGRP (Trunk Group). Table TRKSGRP (Trunk Subgroup) defines the signaling and control information and table TRKMEM (Trunk Member) contains the physical location of each trunk member.

The line-to-trunk translations process is shown in the flowchart that follows.

## Table Flow for a Line-to-Trunk Call



The following table lists the datafill content used in the flowchart for a call routed between a line and a trunk using table OFRT. In the example:

NPA of Calling Line : 807
Calling Line DN : 5701011
Called Line DN : 9601017

Trunk : S5BBB8070PTCA

NPA of Called Line : 705 Pre-Translator Route Selector : T

\_\_\_\_\_\_

## Datafill Example for Line-to-Trunk Translations Routing Using Table OFRT

Datafill Table	Example Data					
LENLINES	HOST 14 1 01 02 S 0 5701011 DT 7 \$					
LINEATTR	7 1FR NONE NT NSCR 1 807 P570 P570 RTE3 10 NIL NILSFC NILLATA 0 NIL NIL 00 N \$					
LCASCRCN	807 P570 ( 1) MAND N					
subtable LCASCR	570 570					
PFXTREAT	MAND DD N DD UNDT					
STDPRTCT	P570 (1) (65021)					
subtable STDPRT	1571 17 T DD 1 OFRT 165 7 11 NONE					
OFRT	165 ( N D S5BBB8070PTCA 0 N N ) \$					
CLLI	S5BBB8070PTCA 356 80 S5BBB_TO_S5807_OG_PTS_CAMA					
TRKMEM	S5BBB8070PTCA 29 0 DTC 10 7 10					
TRKSGRP	S5BBB807OPTCA 0 DS1SIG STD OG MF DD 7 0 NO NO N N Y 120 UNEQ M					

<sup>-</sup>End-

The following table lists the datafill content used in the flowchart for a call routed between a line and a trunk using table HNPACONT and its subtables. In the example:

NPA of Calling Line : 807
Calling Line DN : 5663000
Called Line DN : 9601017

**Trunk** : S5807705TPTIT

NPA of Called Line : 705 Pre-Translator Route Selector :  $\ensuremath{\mathtt{N}}$ 

\_\_\_\_\_

## Datafill Example for Line-to-Trunk Translations Routing Using Table OFRT

Datafill Table	Example Data		
LENLINES	HOST 04 0 00 19 S 0 5663000 DT 8 \$		
LINEATTR	8 1FR NONE NT NSCR 2 807 P566 P566 RTE1 10 NIL NILSFC NILLATA 0 NIL NIL 00 N \$		
LCASCRCN	807 P566 ( 2) MAND N		
subtable LCASCR	566 566		
PFXTREAT	MAND DD N DD UNDT		
STDPRTCT	P566 (1) (65021)		
subtable STDPRT	11 1806 N DD 1 NA		
HNPACONT	807 201 1 ( (32) ( 1) ( 14) ( 0) 0		
subtable HNPACODE	705960 705960 FRTE 21		
subtable RTEREF	21 N D S5807705TPTIT 3 N N		
CLLI	S5807705TPTIT 228 40 S5807_TO_S5705_2W_PTS_INTERTOL		
TRKMEM	S5807705TPTIT 6 0 DTC 5 9 7		
TRKSGRP	S5807705TPTIT 0 DS1SIG STD 2W MF DD N 5 5 MF DD 7 0 N NO NO N N Y M 70 UNEQ		
TRKGRP	S5807705TPTIT IT 0 NPDGP NCIT 2W IT ASEQ 705 P807 NSCR 807 000 N N \$		

## **Datafilling Office Parameters**

The following table shows the office parameters used by line–to–trunk translations. For more information about office parameters, refer to the *DMS–100 Office Parameters Reference Manual*, NTP 297–8021–855:

\_\_\_\_\_

## Office Parameters Used by Line-to-Trunk Translations

Table Name	Parameter Name	Explanation and Action
OFCENG	ACTIVE_DN_SYSTEM	This parameter specifies the type of DNs that can be used in an office. If this parameter is set to "NORTH_AMERICAN", the directory numbe must use the form NPA-NXX-XXXX. If this parameter is set to "UNIVERSAL", the directory number may vary in length.
	AIN_ACTIVE	This parameter controls the activation of the Advanced Intelligent Network (AIN). Enter "Y" to activate AIN software. Enter "N" to deactivate AIN software. If this parameter is set to "N", parameter AIN_OFFICE_TRIGGRP in table OFCVAR is disregarded.
OFCVAR	AIN_OFFICE_TRIGGRP	This parameter is used to subscribe trigger behaviors on an office-wide basis. The entry in field AINGRP in table TRIGGRP is entered here. The default value is "NIL".
 -End-		

Datafill Sequence

The following table lists the tables that require datafill to implement line—to—trunk translations for the *calling line*. The tables are listed in the order in which they are to be datafilled.

Datafill Tables Required for Line-to-Trunk Translations for the Calling Line

Table	Purpose of Table
HNPACONT	The home numbering plan area control table lists all the home or serving area NPAs for a particular area.
subtable HNPACODE	The home numbering plan area code subtable lists the route treatment or table to which the translation routes for each of the assigned NPAs
STDPRTCT	The standard pre-translator table lists the names of the standard pre-translator subtables.
subtable STDPRT	The standard pre-translator subtable determines the next stage of translation, based on the range of leading digits.
LCASCRCN	The local calling area screening control table lists the NPA code and local calling area name and its prefix selector.
subtable LCASCR	The local calling area screening code subtable determines from the dialed digits if the call is local or non-local.
PFXTREAT	The prefix treatment table determines the call treatment to which a call is routed.

LINEATTR	The line attribute table provides pointers to screening and billing
	tables and assigns line attributes for digit analysis.
I DNI INDO	mb. 1' b. l. b. l. b. l. b. l. b. l. b. Day b. d. c. l. l. b. l
LENLINES	The line assignment table contains the DN, hardware location, and options associated with the calling line.
	options associated with the calling line.
-End-	

The following table lists the tables that require datafill to implement line—to—trunk translations for the *called trunk*. The tables are listed in the order in which they are to be datafilled.

-----

Datafill Tables Required for Line-to-Trunk Translations for the Trunk

Table	Purpose of Table
CLLI	The common language location identifier table lists the name that uniquely identifies each trunk group, tone, or announcement.
TRKGRP	The trunk group table contains customer-defined data associated with each trunk group.
TRKSGRP	The trunk subgroup table specifies supplementary information for each trunk group.
TRKMEM	The trunk member table gives the physical location of each trunk assigned to one of the trunk groups.
OFRT	The office route table lists up to eight alternate routes in order of preference. This table lists tones or announcements for calls requiring treatment.

# **Datafilling Table HNPACONT**

The following table shows the datafill specific to line—to—trunk translations for table HNPACONT. Only those fields that apply directly to line—to—trunk translations are shown.

## Datafilling Table HNPACONT

Field	Subfield or Refinement	Entry	Explanation and Action
STS		0 to 9,999,999	Serving Translation Scheme (STS) Enter the Serving Numbering Plan Area (SNPA) or STS code.
HNPACODE		See note	Home Numbering Plan Area Code (HNPA) This field is an index into subtable HNPACODE.
			Note: This field does not accept any input.

-End-

The following example MAP display shows sample datafill for table HNPACONT:

STS	NORTREFS	NOAMBIGC	RT	EREF	HNP	ACODE	AT	TRIB	RTE	EMAP
807	201	1	(	32)	(	1)	(	14)	(	0)

# **Datafilling Subtable HNPACONT.HNPACODE**

The following table shows the datafill specific to line-to-trunk translations for subtable HNPACONT.HNPACODE. Only those fields that apply directly to line-to-trunk translations are shown.

\_\_\_\_\_

#### Datafilling Subtable HNPACONT.HNPACODE

	Subfield or Refinement	Entry	Explanation and Action
FROMDIGS		Numeric (3 digits)	From Digits
TODIGS		Numeric (3 digits)	To Digits If field FROMDIGS represents a single code, enter the same single code as in field FROMDIGS. If field FROMDIGS represents the first number of a block of consecutive numbers, enter the last number in the block.
CDRRTMT		See subfield	
	CD	FRTE, HRTE, or LRTE	Code Type Enter "FRTE" if the call routes to a Foreign Numbering Plan Area (FNPA) that requires three-digit translation.
			Enter "HRTE" if the call routes to a non-local route within the HNPA.
			<pre>Enter "LRTE" if the call routes to a local route.</pre>
			Datafill refinement RR.
	RR	1 to 1,023	Route Reference Index Enter the route reference index of the route list in subtable HNPACONT.RTEREF.

The following example MAP display shows sample datafill for subtable HNPACONT.HNPACODE:

FROMDIGS	TODIGS	CDRRTMT
705960	705960	FRTE 21

# **Datafilling Subtable HNPACONT.RTEREF**

The following subtable shows the datafill specific to line—to—trunk translations for subtable HNPACONT.RTEREF. Only those fields that apply directly to line—to—trunk translations are shown.

-----

#### Datafilling Subtable HNPACONT.RTEREF

Field	Subfield or Refinement	Entry	Explanation and Action
RTE		1 to 1,023 or blank	Route Reference Index Enter the route reference number assigned to the route list.
RTELIST		See subfield	Route List This field consists of a vector of up to nine multiples of subfield RTESEL and refinements CONNTYPE, CLLI, DELDIGS, PRFXDIGS, and CANCNORC. Enter "\$" to signify the end of the vector.
	RTESEL	N	Route Selector Enter "N" if the outgoing or two-way trunk group is inter-toll.  Enter "T" if translation routes to table OFRT.
	CLLI	Alphanumeric (1 to 16 characters)	

-End-

The following example MAP display shows sample datafill for subtable HNPACONT.RTEREF:

RTE	RTELIST
21	( N D S5807705TPTIT 3 N N) \$

# **Datafilling Table STDPRTCT**

The following table shows the datafill specific to line—to—trunk translations for table STDPRTCT. Only those fields that apply directly to line—to—trunk translations are shown.

-----

## Datafilling Table STDPRTCT

Field	Subfield or Refinement	Entry	Explanation and Action
EXPRTNM		Alphanumeric (up to 8 characters)	External Standard Pre-Translator Subtable Enter the name defined by the operating company to represent the standard pre-translator subtable.
STDPRT		See note	Standard Pre-Translator The field is an index into subtable STDPRT.

Note: This field does not accept

any input.

-End-

The following example MAP display shows sample datafill for table STDPRTCT:

EXPRTNM	STI	OPRT	AMAPRT
P570	(	1)	(65021)
P566	(	1)	(65021)

# **Datafilling Subtable STDPRTCT.STDPRT**

The following table shows the datafill specific to line—to—trunk translations for subtable STDPRTCT.STDPRT. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_

#### Datafilling Subtable STDPRTCT.STDPRT

		Entry	Explanation and Action
FROMDIGS		Numeric (up to 18 digits)	From Digits Enter the digit or digits to be translated. If the entry represents a block of consecutive numbers, enter the first number in the block.
TODIGS		Numeric (up to 18	To Digits If field FROMDIGS represents a block of consecutive numbers, enter the last number in the block.
PRETRTE		See subfield	Pre-Translation Route This field consists of subfield PRERTSEL and its refinements TYPECALL, NOPREDIG, TRANSYS, and POS.
	PRERTSEL	N, S, or T	<pre>Pre-Translator Route Selector Enter "N" if translation is to route to table HNPACONT.</pre>
			Enter "S" if translation is to route directly to table CLLI.
			Enter "T" if translations is to route to a test line or table OFRT.
	TYPCALL	DD, OA, NP, or NL	Type of Call Enter the type of call:
			DD (Direct Dial) NP (No Prefix) OA (Operator Assisted) NL (Nil)

For Traffic Operator Position System (TOPS)

NOPREDIG 0 to 7 Number of Prefix Di Enter the number of interpreted as pref	digits that are to be
international trans	ranslation routes to lations (on a local witching unit only).
Enter "NA" if the t	ranslation routes to ns.

-End-

The following example MAP display shows sample datafill for subtable STDPRTCT.STDPRT:

FROMDIGS	TODIGS	PRETRTE
1571	17	T DD 1 OFRT 165 7 11 NONE
11	1806	N DD 1 NA

# **Datafilling Table LCASCRCN**

The following table shows the datafill specific to line—to—trunk translations for table LCASCRCN. Only those fields that apply directly to line—to—trunk translations are shown.

-----

### Datafilling Table LCASCRCN

Field	Subfield or Refinement	Entry	Explanation and Action
NPALOCNM		See subfields	NPA Local Calling Area Subtable Name This field consists of subfields STS and LCANAME.
	STS	Numeric (3 digits)	Serving Translation Scheme Enter a serving NPA code for the trunk group
	LCANAME	Alphanumeric (up to 4 characters)	Local Calling Area Name Enter the key to subtable LCASCRCN.LCASCR.
LCASCR		See note	Local Calling Area Screening This field is an index into subtable LCASCR
			Note: This field does not accept any input.
PFXSELEC		OPTL, MAND, or Alphanumeric (up to 4 characters)	Prefix Selector Enter the name of the prefix selector that is assigned to subtable LCASCR.

-End-

The following example MAP display shows sample datafill for table LCASCRCN:

NPALOCNM	LCASCR	PFXSELEC	PFSFOR10
807 P570	( 1)	MAND	N
807 P566	( 2)	MAND	N

# **Datafilling Subtable LCASCRCN.LCASCR**

The following table shows the datafill specific to line—to—trunk translations for subtable LCASCRCN.LCASCR. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_

## Datafilling Subtable LCASCRCN.LCASCR

Field	Subfield or Refinement	Entry	Explanation and Action
FROMDIGS		Numeric (3 digits)	From Digits Enter the three-digit local NXX code. This number represents a single code or the first in a block of consecutive local NXX codes.
TODIGS		Numeric (3 digits)	To Digits  If field FROMDIGS represents the first number of a block of consecutive local NXX codes, enter the last NXX code in the block. If field FROMDIGS represents a single local NXX code, enter the NXX code entered in FROMDIGS.

The following example MAP display shows sample datafill for subtable LCASCRCN.LCASCR:

FROMDIGS	TODIGS
570	570
566	566

# **Datafilling Table PFXTREAT**

The following table shows the datafill specific to line—to—trunk translations for table PFXTREAT. Only those fields that apply directly to line—to—trunk translations are shown.

-----

#### Datafilling Table PFXTREAT

Subfield or Field RefinementTYPLCLCD		Entry	Explanation and Action			
		See subfields	Type of Call and Local Code This field consists of subfields PFXSELEC,			
			TYPCALL, and LOCCODE.			

	PFXSELEC	OPTL, MAND, or Alphanumeric (up to 4 characters)	Prefix Selector Enter the prefix selector assigned to the prefix treatment.
	TYPCALL	DD, NP, OA, or NL	Type of Call Enter the type of call:
			DD (Direct Dial) NP (No Prefix) OA (Operator Assisted) NL (Nil)
			For Traffic Operator Position System (TOPS) calls, there can be a mixture of 0 and 1 (OA and DD) call types. Enter "NL" for these cases.
	LOCCODE	Y or N	Local Code Enter "Y" if the record is for a local call. Enter "N" if the prefix treatment record is for a non-local call.
UPDTYPCA		DD, NP, OA, or NL	Type of Call Enter the type of call:
			DD (Direct Dial) NP (No Prefix) OA (Operator Assisted) NL (Nil)
			For Traffic Operator Position System (TOPS) calls, there can be a mixture of 0 and 1 (OA and DD) call types. Enter "NL" for these cases.

The following example MAP display shows sample datafill for table PFXTREAT:

TYPLCLCD	UPDTYPCA	TREAT
MAND DD N	DD	UNDT

# **Datafilling Table LINEATTR**

-End-

The following table shows the datafill specific to line—to—trunk translations for table LINEATTR. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_

## Datafilling Table LINEATTR

Field	Subfield or Refinement	Entry	Explanation and Action
LNATTIDX		0 to 31,999	Line Attribute Index Enter the index into table LINEATTR.

SCRNCL	Alphanumeric (up to 4 characters, or NSCR)	Class of Service Screening Subtable If screening by class of service is required, enter the key to the class of service subtable assigned to the line attribute index. If screening by class of service is not required, enter "NSCR".
STS	Numeric (3 digits)	Serving Translation Scheme Enter the Serving Numbering Plan Area (NPA) assigned to the line attribute index. The Serving Translation Scheme (STS) of an existing tuple cannot be changed.
PRTNM	Alphanumeric (up to 4 characters, or NPRT)	Standard Pre-Translator Subtable  If pre-translation of digits is required, enter the key to the standard pre-translator subtable assigned to the line attribute index.  If standard pre-translation is not required, enter "NPRT".
LCANAME	Alphanumeric (up to 4 characters, or NLCA)	Local Calling Area Screening Subtable If screening of local central office codes (NXX) is required, enter the key to the local calling area subtable assigned to the line attribute index. If screening of local NXX codes is not required, enter "NLCA".

-End-

The following example MAP display shows sample datafill for table PFXTREAT:

LNATTIDX TRAFSNO RESINF	LCC MRSA OPTION	CHGCLSS SFC S	COST LATANM	SCRNCL MDI	LTG IXNAME	STS DGCLNAME	PRTNM FANIDIGS	LCANAME RESINF	ZEROMPOS OPTIONS
7	1FR	NONE	NT	NSCR	1	807	P570	P570	RTE3
10	NIL	NILSFC	NILLATA	0	NIL	NIL	00	N	\$
8	1FR	NONE	NT	NSCR	2	807	P566	P566	RTE1
10	NIL	NILSFC	NILLATA	0	NIL	NIL	00	N	\$

# **Datafilling Table LENLINES**

The following table shows the datafill specific to line—to—trunk translations for table LENLINES. Only those fields that apply directly to line—to—trunk translations are shown.

#### Datafilling Table LENLINES

Field	Subfield or Refinement	Entry	Explanation and Action
LEN		See subfields	Line Equipment Number This field defines the physical location of the equipment that is connected to a specific telephone line.

Note: Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF,

SLOT, and CIRCUIT.

PTY	R1 to R5, T1 to T5, or S	Party and Ringing Combination If the line is assigned to a two-, four-, eight-, or ten-party line, enter the party, R1 to R5 or T1 to T5, of the DN assigned to the line. If the line is assigned to an individual line, enter "S" for single party
LNATTIDX	0 to 31,999	Line Attribute Index Enter the index into table LINEATTR.
-End-		

The following example MAP display shows sample datafill for table LENLINES:

LEN	PTY	RINGCODE	DN	SIGTYPE	LNATTIDX	OPTLIST
HOST 14 1 01 02	s	0	5701011	DT	7	\$
HOST 04 0 00 19	s	0	5663000	DT	8	\$

# **Datafilling Table CLLI**

The following table shows the datafill specific to line—to—trunk translations for table CLLI. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_\_

## Datafilling Table CLLI

Subfield or Field Refinement CLLI		Entry	Explanation and Action  Common Language Location Identifier  Enter a CLLI code to uniquely identify the far end of each announcement, tone, or trunk group.		
		Alphanumeric (up to 16 characters)			
-End-					

The following example MAP display shows sample datafill for table CLLI:

CLLI	ADNUM	TRKGRSIZ	ADMININF
S5BBB807OPTCA	356	80	S5BBB_TO_S5807_OG_PTS_CAMA
S5807705TPTIT	228	40	S5807_TO_S5705_2W_PTS_INTERTOL

# **Datafilling Table TRKGRP**

The following table shows the datafill specific to line–to–trunk translations for table TRKGRP. Only those fields that apply directly to line–to–trunk translations are shown.

-----

#### Datafilling Table TRKGRP

Field	Subfield or Refinement	Entry	Explanation and Action
GRPKEY		See subfield	Group Key This field consists of subfield CLLI.
	CLLI	Alphanumeric (up to 16 characters)	Common Language Location Identifier Enter the CLLI code assigned to the trunk group in table CLLI.
-End-			

The following example MAP display shows sample datafill for table TRKGRP:

GRPKEY	GRPINFO
S5BBB8070PTCA	OC 0 NPDGP NCRT CA MIDL WK N N OG \$
S5807705TPTIT	IT 0 NPDGP NCIT 2W IT ASEQ 705 P807 NSCR 807 000 N N \$

# **Datafilling Table TRKSGRP**

The following table shows the datafill specific to line—to—trunk translations for table TRKSGRP. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_\_

#### Datafilling Table TRKSGRP

Field	Subfield or Refinement	Entry	Explanation and Action
SGRPKEY		See subfields	Subgroup Key This field consists of subfields CLLI and SGRP.
	CLLI	Alphanumeric (up to 16 characters)	Common Language Location Identifier Enter the code that is assigned in table CLLI to the trunk group to which the subgroup belongs.
	SGRP	0 or 1	Subgroup Number Enter the number assigned to the trunk subgroup.

-End-

The following example MAP display shows sample datafill for table TRKSGRP:

SGRPKEY		CARDCODE	SGRPVAR
S5BBB807OPTCA	0	DS1SIG	STD OG MF DD 7 0 NO NO N N Y 120 UNEQ M
S5807705TPTIT	0	DS1SIG	STD 2W MF DD N 5 5 MF DD 7 0 N NO NO N N Y M 70 UNEQ

# **Datafilling Table TRKMEM**

The following table shows the datafill specific to line-to-trunk translations for table TRKMEM. Only those fields that apply directly to line-to-trunk translations are shown.

\_\_\_\_\_

Datafilling Table TRKMEM	Datafilling	Table	TRKMEM
--------------------------	-------------	-------	--------

Field	Subfield or Refinement	Entry	Explanation and Action
CLLI		Alphanumeric (up to 16 characters)	Common Language Location Identifier Enter the CLLI code datafilled in table CLLI that is assigned to the trunk group of which the trunk is a member.
EXTRKNM		0 to 9,999	External Trunk Number Enter the external trunk number that is assigned to the trunk. For members of trunk groups using the AIOD option, the external trunk number must be unique over all trunks and lines using the same AIOD group.
MEMVAR		See subfield	Variable Data for Members This field consists of subfield PMTYPE and refinements.
	PMTYPE	DTC	Peripheral Module Type Enter the Peripheral Module (PM) type on which the trunk is mounted and datafill the refinements associated with this entry value.
			Enter DTC for a digital trunk controller and complete subfields DTCNO, DTCCKTNO, and DTCCKTTS.
	DTCNO	0 to 511	Digital Trunk Controller Number Enter the number of the DTC to which the trunk group member is assigned.
	DTCCKTNO	0 to 19	Digital Trunk Controller Circuit Number Enter the number of the DTC circuit card to which the trunk group member is assigned.
	DTCCKTTS	1 to 24	Digital Trunk Controller Circuit Time Slot Enter the number of the circuit card DS-1 time slot to which the trunk group member is assigned.

<sup>-</sup>End-

The following example MAP display shows sample datafill for table TRKMEM:

CLLI	EXTRKNM	SGRP	MEMVAR
S5BBB807OPTCA	0	0	DTC 0 1 5
S5807705TPTIT	6	0	DTC 5 9 7

# **Datafilling Table OFRT**

The following table shows the datafill specific to line—to—trunk translations for table OFRT. Only those fields that apply directly to line—to—trunk translations are shown.

\_\_\_\_\_

# Datafilling Table OFRT

Field	Subfield or Refinement	Entry	Explanation and Action
RTE		1 to 1,023 or blank	Route Reference Index Enter the route reference number assigned to the route list.
RTELIST		See subfield	Route List This field consists of the subfields described below.
	RTESEL	N or N2	Route Selector Enter "N" or "N2".
	CONNTYPE	D	Connection Type Enter "D" to satisfy the table editor. This field is not used by the system logic.
	CLLI	Alphanumeric (up to 16 characters)	Common Language Location Identifier Enter the code in table CLLI to which translation is to be routed.
	DELDIGS	0 to 15	Delete Digits Enter the number of digits, from 0 to 15, to be deleted before outpulsing.
			Enter "15", which must be the number of digits to be deleted before outpulsing if route selector N2 is to be used.
PRFXDIGS		Numeric	Prefix Digits  If digits and/or control signals are to be prefixed, enter the digits (up to 11) or equivalents that are to be prefixed.  If control signals are to be prefixed, enter the signal's digit equivalent.  Enter "N" if no digits are to be prefixed.
	CANCNORC	N	Cancel Normal Charge Enter "N".

DDLS	0 to 15	Delete Digits Last Stage Enter the number of digits, from 0 to 15, to be deleted from the front of the called number to be outpulsed.
ADLS	0 to 15	Add Digits Last Stage Enter the actual digits which are prefixed onto the front of the called number to be outpulsed.
		Enter "N" if no digits are to be prefixed onto the front of the called number to be outpulsed.
RTESEL	N	Route Selector Enter "N".
 CTTI	Alphanumeric (up to 16 characters)	Common Language Location Identifier Enter the code in table CLLI to which translation is routed.

-End-

# The following example MAP display shows sample datafill for table OFRT:

RTE	RTELIST		
165	( N D S5BBB807OPTCA 0 N N) \$		

## **Translation Verification Tools**

The following example shows the output from the TRAVER command between DNs (807) 570-1011 and (705) 960-1017 it is used to verify line-to-trunk translations using table OFRT.

```
>TRAVER L 5701011 17059601017 B
TABLE LINEATTR
7 1FR NONE NT NSCR 1 807 P570 P570 RTE3 10 NIL NILSFC NILLATA 0 NIL NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
P570 (1) (65021) 0
 . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
 . 17 17 T DD 1 OFRT 165 7 11 NONE
AIN Info Collected TDP: no subscribed trigger.
AIN Info Analyzed TDP: no subscribed trigger.
  . . TABLE OFRT
  . . 165 N D S5BBB8070PTCA 0 N N
  . . EXIT TABLE OFRT
  . SUBTABLE AMAPRT
  . KEY NOT FOUND
  . DEFAULT VALUE IS: NONE OVRNONE N
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 S5BBB8070PTCA 7059601017 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

## **Translation Verification Tools**

The following example shows the output from the TRAVER command between DNs (807) 566-3000 and (705) 960-1017 when it is used to verify line-to-trunk translations using subtable HNPACONT.HNPACODE.

```
>TRAVER L 5663000 17059601017 B
TABLE LINEATTR
8 1FR NONE NT NSCR 2 807 P566 P566 RTE1 10 NIL NILSFC NILLATA 0 NIL NIL 00 N $
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE LENFEAT
TUPLE NOT FOUND
TABLE OFCVAR
AIN_OFFICE_TRIGGRP NIL
AIN Orig Attempt TDP: no subscribed trigger.
TABLE STDPRTCT
P566 (1) (65021) 0
 . SUBTABLE STDPRT
WARNING: CHANGES IN TABLE STDPRT MAY ALTER OFFICE
BILLING. CALL TYPE DEFAULT IS NP. PLEASE REFER TO
DOCUMENTATION.
  . 17 1806 N DD 1 NA
  . SUBTABLE AMAPRT
  . KEY NOT FOUND
  . DEFAULT VALUE IS: NONE OVRNONE N
TABLE HNPACONT
807 201 1 ( 32) ( 1) ( 14) ( 0) 0
  . SUBTABLE HNPACODE
 . 705960 705960 FRTE 21
AIN Info Collected TDP: no subscribed trigger.
AIN Info Analyzed TDP: no subscribed trigger.
  . SUBTABLE RTEREF
  . 21 N D S5807705TPTIT 3 N N
  . EXIT TABLE RTEREF
EXIT TABLE HNPACONT
TABLE LCASCRCN
807 P566 (2) MAND N
  . SUBTABLE LCASCR
  . TUPLE NOT FOUND. DEFAULT IS NON LOCAL
TABLE PFXTREAT
MAND DD N DD UNDT
LATA IS NIL, THEREFORE NOT AN EQUAL ACCESS CALL
+++ TRAVER: SUCCESSFUL CALL TRACE +++
DIGIT TRANSLATION ROUTES
1 S5807705TPTIT 9601017 ST
TREATMENT ROUTES. TREATMENT IS: GNCT
1 *OFLO
2 LKOUT
+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

# Making Tube & Contact Microphones

### Overview

A tube, or hose, microphone is a common electret microphone which is connected to a length of tubing. The open end of the tubing can then be treated just like it was a regular microphone. It can be routed or hid in small, confined spaces or even placed at the focal point of a parabolic reflector. It can also be mounted near the corner on a glass window. This will cause the windowpane to act like a boundary reflector and will slightly increase the gain of the microphone.

Tube microphones are ideal for through–the–wall monitoring applications inside hotels, apartments, \$2600's corporate office, and even Mosques. Refer to *GBPPR 'Zine*, Issue #18 for information on building a silent drill to help during those covert microphone installations.

Tube microphones can even be trimmed to resonant at a certain audio frequency, if so desired. Just divide the speed–of–sound at sea level (1,100 feet per second), by the target frequency, in Hertz. This will be the audio wavelength, in feet. Trim the tube to this length.

#### **Example**

## Resonant Wavelength for a 1,000 Hz Tone:

```
1100 ft/s
----- = 1.1 feet or 13.2 inches
1000 Hz
```

A contact microphone is a microphone which only responds to direct sonic or physical pressure. An ideal contact microphone should not respond to any nearby "sounds." This allows for the use of enormous voltage gains (90+ dB) during the pre–amplification stage without worrying about any feedback oscillations. You'll often see contact microphones used on the National Geographic Channel when they record the "sounds" of ants and other insects walking or crawling along. Of course, that is gay. We'll be using them to monitor our neighborly terrorists and break into safes.

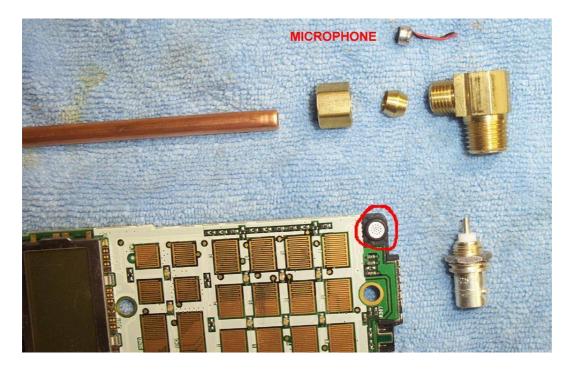
For those really quick-and-dirty operations, you can tape a standard speaker or phonograph cartridge to the wall or object you are trying to "hear" through. Then run the output into a standard microphone pre-amplifier. If you use a speaker, be sure to add a 8-to-600 ohm matching transformer.

The contact microphone microphone covered in this article isn't perfect, but it does work. It'll give the enterprising spy a good starting point. Oh... If you don't want to make a contact microphone, you can buy them commercially as "guitar pick—ups." But where is the fun in that?

## **Pictures**



Overview of the 1/4-inch O.D. tubing used for testing. This is the tubing which will carry audio from the target area to the electret microphone element. On the upper left, is clear vinyl tubing. Vinyl tubing is very flexible and easy to work with, but can be hard to route through "tough" areas because of its tendency to bunch up. Below that is white polyethylene tubing. This is just like the vinyl tubing, only much more rigid. A drawback to polyethylene tubing is its tendency to stay in a "rolled-up" form when trying to route it. To the left of that is regular copper tubing. Copper tubing is probably the best for short runs or through-the-wall applications. It is surprisingly flexible and easy to work with. Copper tubing is also the only thing that will work in areas saturated with large amounts of electromagnetic interference. Two drawbacks to copper tubing is needing a tubing cutter to properly trim it and the fact it will show up using a metal detector during a TSCM sweep.



Example of a tube microphone using a 1/4-inch electret microphone element from an old cellular phone (circled in red), a brass "Male Elbow – 1/4 IN. O.D. Tube X 1/4 IN. Male Iron Pipe" compression adapter, and a BNC jack.



Overview of how the compression fitting works. It works the same if the tubing is copper, vinyl, or polyethylene. The little brass compression rings can only be used once, so purchase alot of them. The inside of the threaded pipe end of the adapter will be tapped using a 3/8-inch, 32 TPI tap. This tap can be hard to find, but McMaster-Carr (www.mcmaster.com) carries them.



Completed tube microphone. The electret microphone element is sandwiched between the polyethylene tube and the inside rim of the compression fitting. The other end was tapped and the BNC jack screwed in. The body of the electret microphone element is compressed against the inside of the compression fitting so it all shares a common ground and only one wire is needed to connect the center pin of the BNC jack to the microphone's + (positive) terminal.



Inside rear view of the compression fitting showing the electret microphone element.



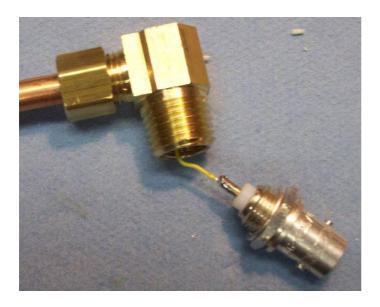
Example of inserting the electret microphone into the compression fitting.



Tapping the threads on the inside of the brass compression fitting. Brass is soft and easy to tap. Once started, turn the tap handle about 1/4 of a turn, then back it out a bit to "break" the chips forming inside the hole. Be sure to use lots of lube.



If you don't have a 3/8"-32 tap, or don't want to use a BNC jack, you can use a brass pipe cap instead. Drill out the center of the pipe cap with a 5/32" drill bit and fit a common 3/32" (mini) mono jack. Use a rubber O-ring to prevent anything from shorting out when you screw the cap to the compression fitting. The threads on the pipe cap and compression fitting may not be the same, but for this application, it still works out O.K.



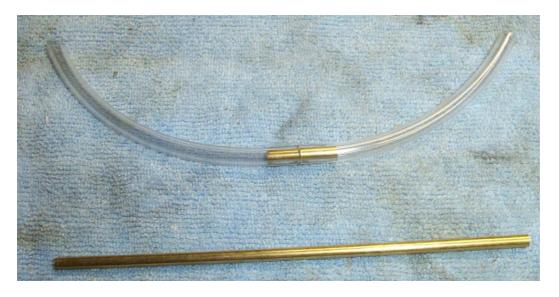
Connecting the center pin of the BNC to the electret microphone element.



Completed tube microphone adapter which is completely shielded and can be quickly connected or disconnected using normal coaxial cables.



Examples of completed tube microphones. The top example has a short length of polyethylene tubing and a "straight" microphone holder. The middle example has a short length of copper tubing and a "right-angle" microphone adapter. The one below that has a 1/4-inch to 1/4-inch brass compression adapter to allow for the quick connection or disconnection of different tubes. Use a short piece of copper tube between the two fittings to keep the electret microphone element in place. This helps to protect the microphone element from any damage by pressing the audio tube in too far, or from overtightening the compression nut.



To connect two pieces of 1/4–inch vinyl or polyethylene tubing, use a short piece of 9/32–inch O.D. brass tubing.



For the contact microphone, you'll need to do things a little differently. Now this is a total hack, but it appears to work quite well. First, you'll need a Kobitone 1-inch diameter ceramic microphone (Mouser Part # 25LM037). Two are shown in the lower left of the picture. One of the microphones is opened, with the foil removed, exposing the ceramic element.

Next, you'll need some steel-reinforced epoxy putty (cold weld). J-B Weld is the one and only. This will be used to fill the vibration pick-up "cap" and for the connection to the ceramic element.

Next, you'll need a 3/4-inch copper pipe end cap (which should actually be 1-inch in diameter), some 1/4-inch copper tubing, and a good tubing cutter.



Use the tubing cutter to cut the copper pipe end cap so it is only 3/8-inch high (closed end). Then cut a piece of copper tubing 1/2-inch long. File or debur the edges of the pipe and the tubing so everything is smooth and level. Mix the cold weld epoxy and fill the copper pipe end cap. Smooth and level the epoxy so it all looks pretty. Before it cures, place the short 1/4-inch tubing stand-off in the center of the end cap, and press the epoxy all around the sides. Smooth and level the epoxy again. See the photo for a better idea of what you're trying to accomplish.



Carefully take apart the ceramic microphone. You need to pry the cover's edges with needle–nose pliers to remove it, then use a X-acto knife to cut away the aluminum foil from the ceramic element itself. The aluminum foil is glued to the ceramic element in the center, so be careful not to pull on it, or the element will break.

What you are basically trying to do here is replace the microphone's foil "air pick-up" with a "vibration pick-up" sensor.



Place a bit of cold weld inside the 1/4-inch tubing stub and *gently* press the ceramic microphone body onto the stub, centering on the ceramic element itself. Use little bits of art foam around the edges to keep the microphone's body from twisting and breaking the ceramic element. Finish up by connecting a length of shielded wire to route the signals from the microphone.

Be very careful with this setup as it is extremely fragile.



Completed contact microphone.

To listen through walls, connect this to a standard high-impedance (10k ohms) microphone pre-amplifier.

To help in cracking safe combinations, connect it to a very-high gain, very-low noise op-amp and run the output to an oscilloscope or strip chart recorder.

# Carrier Current Surveillance Bug

## Overview

A carrier current technical surveillance device is a device for the covert interception of audio which is then transmitted, via a FM carrier frequency, on top of the standard 120 VAC power line grid. The use of AC power lines as the transmission medium is not necessary, but *extremely* convenient, as it supplies a source of power for permanent installations (i.e., Mosques, \$2600 office, etc.). Using a dedicated wire pair or even phone lines as a transmission medium will also work. You can push the signal out several miles on a standard telco twisted–pair, and the signal will still be fairly noise free.

The reception distance via AC power lines is limited by a number of factors. First, the wiring needs to be on the same side as the "pole pig" step-down transformer. These have too high of an impedance for the high-frequency carrier to pass through. Also, all the wiring needs to be on the same phase, if feed from a 3-phase supply. Read a book for more info on that one. But, more importantly, the reception distance will be limited by any noise injected into the AC power lines. Just about everything that plugs into a wall outlet will generate in-band audio noise, which means there will be alot of it! Oh... Those little AC power line filters will also attenuate the high-frequency carrier current signal. Isolation transformers will too. That should be useful knowledge if you ever need to "bug" proof the wiring of a room or house.

Carrier current surveillance devices can be easily hidden inside anything which is connected to the power grid. Lamps, TVs, VCRs, cable boxes, computers, etc. all are ideal targets. Practice makes perfect! Watch out for "Anywhere Phone Jacks" or X10 remote control devices on the same wiring. These also operate using the carrier current principle, and you don't want another source of interference on the line. Every florescent light, dimmer switch, motor, compressor, etc. on your side of the pole's step-down transformer will interfere with the signal. And of course the interference will always seem to land in the audio band. Professional devices use a digital spread-spectrum carrier which allows for multiple (tens or even hundreds) of devices to be connected to the same wiring. The digital nature of the audio modulation removes any static or external interference.

To tune the transmitter/receiver pair *without* the need to connect it to AC power lines, just connect the transmitter directly into the receiver through a series 10 kohm resistor. This makes working on and tuning both circuits much easier, and avoids any risk from high–voltage shocks. Once everything appears to be working properly, you can adjust the 5 kohm variable potentiometer on pin 11 of the CD4046 for the "clearest" audio. Try replacing that potentiometer/resistor combination with a 50 kohm potentiometer if that doesn't work out. If properly built, there should be no need for any serious tuning.

You may be wondering how one can connect such a device so easily into the power lines. It's done simply by using a resonant, tuned circuit to couple a transistor into the low–impedance of the AC power line. The tuned circuit is formed using a parallel inductor and capacitor to resonant at the carrier frequency of the transmitter (say, 300 kHz). This tuned circuit attenuates any signals out of its resonant band, especially low–frequencies like 60 Hz. Then, when coupled to the AC power line through a 0.1  $\mu$ F capacitor, the 60 Hz signal is even further attenuated, while high–frequencies, like the 300 kHz carrier, pass easily.

The plans for this carrier current surveillance device are a slightly modified version from the book <u>The Basement Bugger's Bible</u> by Shifty Bugman.

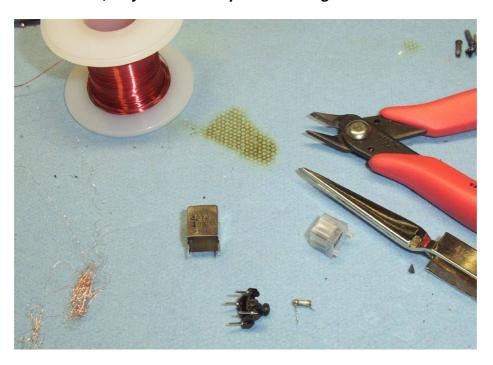
## **Pictures**



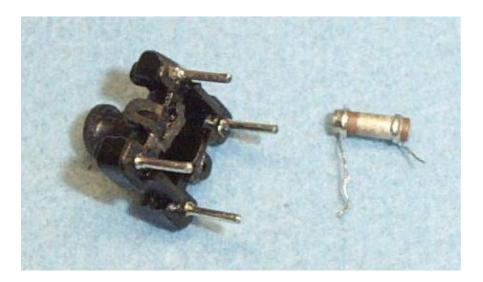
One of the most difficult parts of this project is making the modulation transformer for the transmitter section. It's not hard, but requires some patience. The transmitter's transformer is made from a modified Xicon 42IF103 455 kHz IF Transformer (Mouser Part # 42IF103). The three parts of the transformer are (left-to-right) the shield, the tunable ferrite cap, and the core.

Start by taking the stock transformer apart. Heat it gently with a hot air gun and the transformer's core should just slide out.

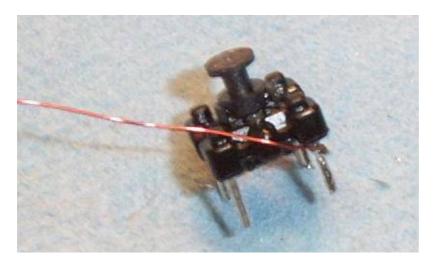
# Be sure to carefully study and document the transformer's original pin layout and construction, as you'll need to put it back together!



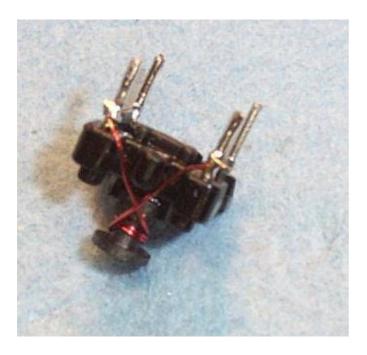
Next, cut the fine wire which is wrapped around the transformer's core. You'll need to unravel all the wire and de-solder it from the transformer's pins. Also be sure to remove the transformer's capacitor. It's the little brown/silver cylinder in the picture.



Close up of the bare transformer core and its internal capacitor. The center-tap pin on the transformer broke while removing it. It will still work.



You'll need to add your own windings to this coil. Start with the **SECONDARY** winding. This will be *three* turns of 30–gauge enamelled magnet wire (Radio Shack Part # 278–1345). Start by stripping (with a X–acto knife) and tinning one end, then solder that to one of the pins on the transformer core.

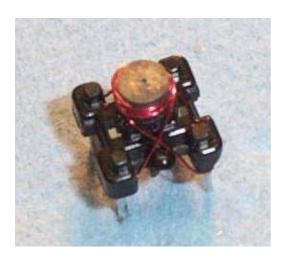


Completed **SECONDARY** winding. Be sure to use the correct pins.

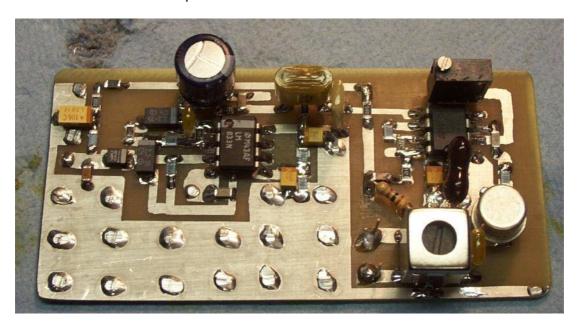


Completed **PRIMARY** winding *over* the **SECONDARY** winding.

The **PRIMARY** winding will have *twenty* turns of 30–gauge enamelled magnet wire. It's final inductance should be around 10.2  $\mu$ H. Its exact value is not too critical, as the ferrite cap allows the transformer to be "tweaked."



Overhead view of the completed transmitter transformer core.



Carrier current transmitter overview. Electret microphone input is on the left, and it feeds one-half of the LM833 op-amp. The gain is around 40 dB and it's set to roll-off around 7 kHz. The other-half of the LM833 acts as an active bias for the first op-amp. The output of the LM833 is sent through a simple RC low-pass filter to remove any remaining ultrasonic frequencies which could interfere with the FM carrier. It finally feeds a CMOS 555-timer configured to generate a square-wave carrier frequency at around 300 kHz. It's exact value is also not critical, but it should be near 300 kHz. The version shown above oscillates around 270 kHz (it will vary slightly with temperature), and works fine.

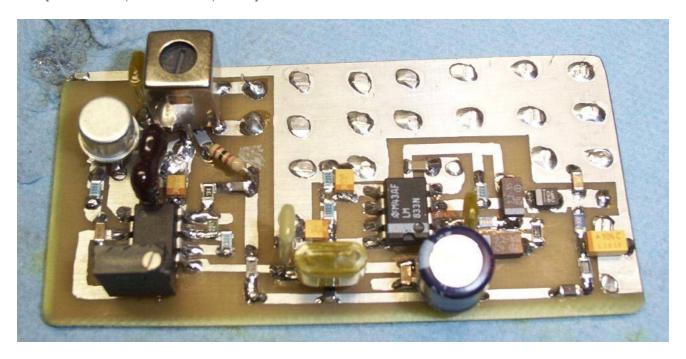
The audio input signal to the 555 frequency modules the timer's 300 kHz carrier output. This output on pin 3 of the 555 is sent to a 2N2219A transistor. The capacitor/resistor/diode protect the transistor's base–emitter junction. In the transistor's collector path, is the **PRIMARY** of our new modulation transformer. This inductor value (10.2  $\mu$ H) and a parallel 0.033  $\mu$ F capacitor form a tuned circuit which is resonant around 300 kHz. Adjust the transformer's ferrite cap to "peak" the output from the transformer. The **SECONDARY** winding of the modulation transformer connects to the AC power line via a series 0.1  $\mu$ F 250 volt, AC–rated capacitor. This capacitor has a reactance of around 26,525 ohms at 60 Hz and only 5.3 ohms at 300 kHz. This is how it can connect to the AC power line without blowing up.

## Capacitive reactance is found via the following Perl equation:

```
$Cap_React = 1 / (2 * pi * $Frequency_in_Hertz * $Capacitance_in_Farads);
```

# A parallel inductor/capacitor (LC) resonant frequency is found via the following Perl equation:

```
Frequency_in_Hertz = 1 / (2 * pi * (sqrt ($Capacitance_in_Farads * $Inductance_in_Henries))); Example: 0.033 µF and 10.2 µH in parallel = 274.3 kHz
```



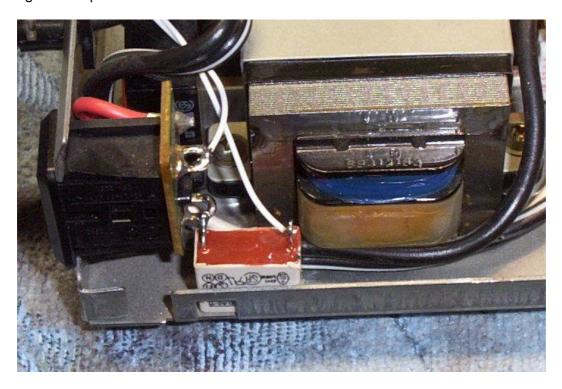
Alternate view of transmitter. It varies a bit from the schematic due to experimenting.



Internal picture of a cable box where the bug will be planted for this experiment. This cable box was chosen for a varity of reasons. There is alot of room inside, it offers a "loop–through" AC output on the back for easy connection, it is always powered on (remote control activated devices never actually power down), it uses a linear power supply so there is no switching noise, and the voltage regulator is a common 7812, so tapping into its output lines is quite easy.



Internal view of the cable box. The 7812 voltage regulator is shown in the middle. Its output is the right-most pin.



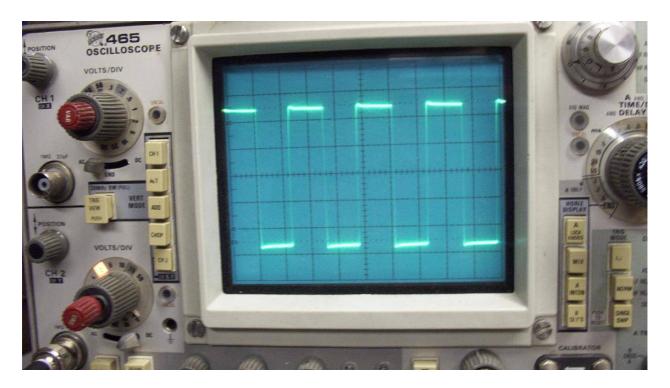
Close up view of the AC input and step–down transformer inside the cable box. The loop–through socket is on the left with the series 0.1  $\mu$ F capacitor.



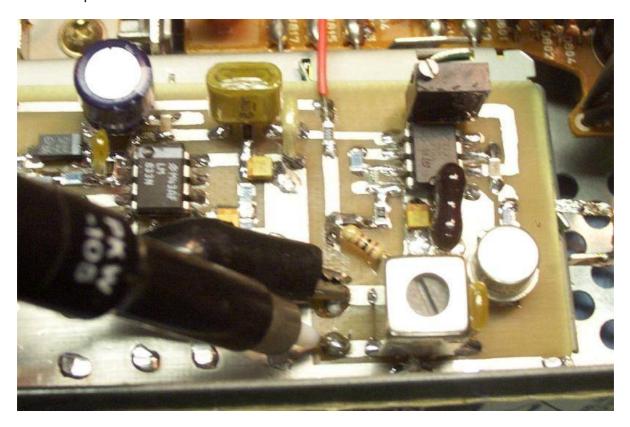
Carrier current surveillance bug planted inside the cable box. The red wire taps the cable box's +12 VDC. The small braid connection on the right is the circuit's ground. The microphone is positioned such that the audio can enter via the ventilation slots on the side of the case.



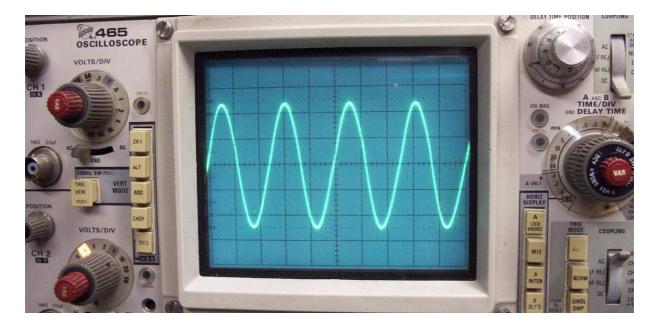
Checking the 555-timer's carrier frequency at Test Point #1 (**TP1** in the shematic). The carrier frequency is reading 275.1 kHz. This is close enough to the target frequency of 300 kHz.



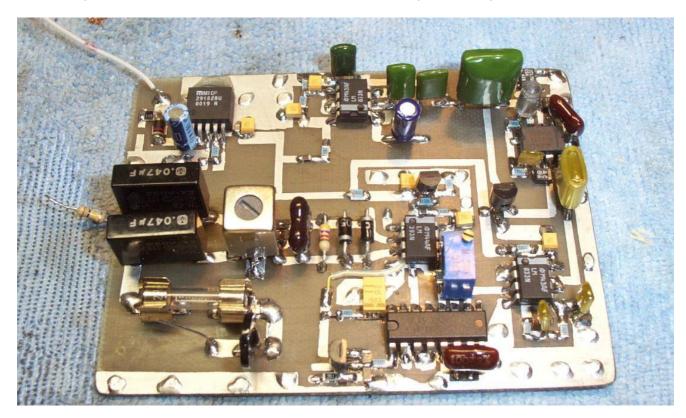
Oscilloscope view of the waveform at Test Point #1.



Peaking the output of the modulation transformer. Connect it to an oscilloscope and "peak" the output waveform by adjusting the ferrite cap inside the transformer with a plastic tuning tool.



Oscilloscope view of the transmitter's modulation transformer peaked output waveform.

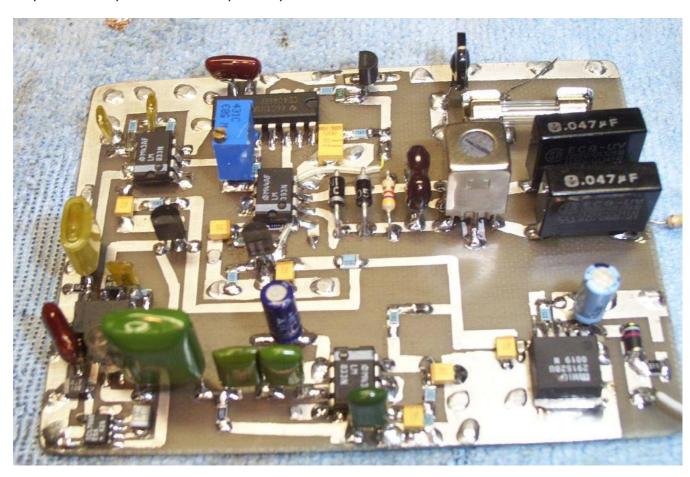


Picture of the carrier current receiver board. It too differs from the schematic due to experimentation. The AC line input is on the lower–left. One side passes through one of those low–value resistor things that are found in switching power supplies, then through a 250 mA fuse, then a series 0.1  $\mu$ F 250 volt, AC–rated capacitor. It is then connected to the **SECONDARY** side (the side with only two pins) of a *stock* Xicon 42IF103 455 kHz IF transformer. The modulation output is taken on the **PRIMARY** side of the transformer, and the transformer's center–tap *must be* grounded. This is important to properly bias the LM393. An external, parallel 330 pF capacitor lowers the resonant frequency of the transformer's tuned circuit to around 270 kHz. The 42IF103, in its stock 455 kHz configuration, has an inductance value of 680  $\mu$ H and capacitance of 180 pF. A

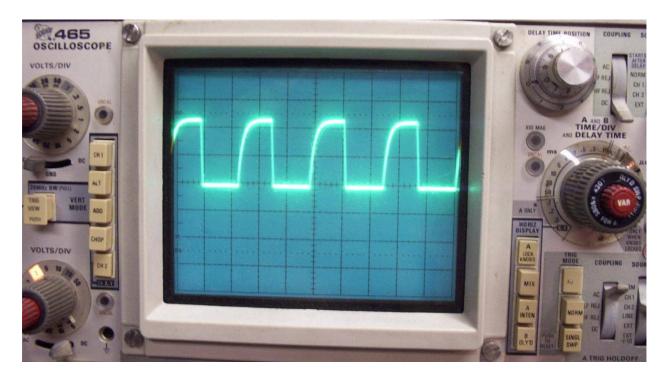
parallel 4.7 kohm resistor lowers the Q of the tuned circuit, making "off–frequency" reception possible. Two back–to–back diodes clip the waveform going into the LM393 to avoid overloading.

The LM393 is configured as a zero–crossing detector. It turns the received 300 kHz sine wave into a series of square waves. These square waves should look similar to those of the 555–timer in the transmitter. They are directly coupled into a CD4046 phase–lock loop IC configured as a FM demodulator. The CD4046 generates its own carrier frequency near 300 kHz. This internally generated frequency is compared to the input frequency. The resulting phase "difference" in the two frequencies is caused by the audio modulation. The CD4046 outputs this phase difference signal on pin 10. It is then buffered and low–pass filtered to strip the carrier by a LM833 op–amp. You'll notice that the LM393 and the CD4046 are both run from a TL431 precision, low–noise +5 VDC regulator. This help keeps the CD4046's internal oscillator on frequency. It is optional, but recommended.

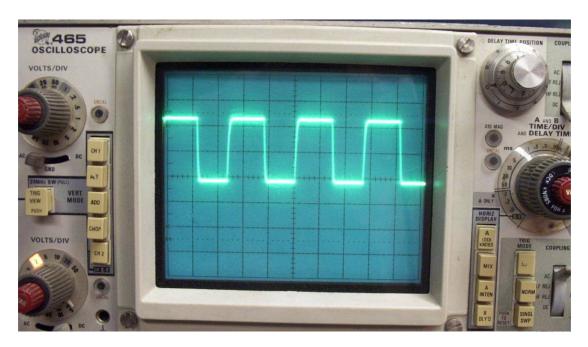
The signal passes through another LM833, this time configured as a 300 Hz high–pass filter. This helps to remove any 60 Hz hum or low–frequency rumbles. It passes through a 10 kohm volume potentiometer (with an integrated switch) and then onto a MC34119 (or NJM2113) audio power amplifier. Headphones or a low–power speaker can be driven.



Alternate view. A Maxim MAX295 was inserted to try and remove some of the in–band noise, but it didn't work too well. Total noise removal might require DSP filtering or digital modulation. Also, on pin 1 of the CD4046, was an attempt to use the loop unlock signal for something, that didn't work out either. Only one 0.1  $\mu$ F capacitor is really needed on the AC line input. The voltage regulator is a Micrel MIC29152, configured for +9 VDC.



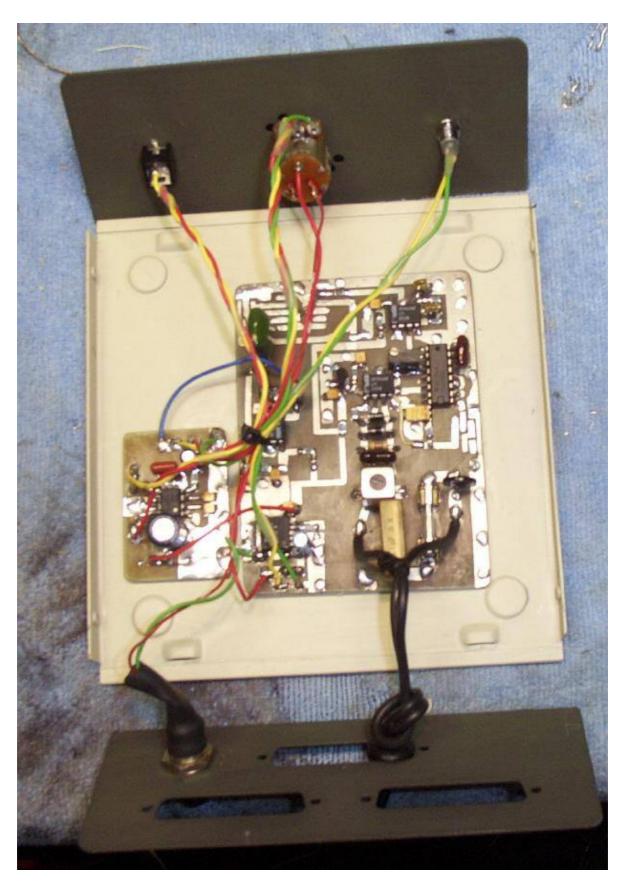
Waveform of the LM393's output going into pin 14 of the CD4046. It should be fairly close to a square wave. Adjust the LM393's 1 Mohm feedback resistor (up to 10 Mohms) to fiddle with the waveform.



CD4046's internal oscillator output at Test Point #2 (**TP2** in the schematic). Measure this *without* the receiver connected. It should be near the target carrier frequency of 300 kHz. This particular unit was measured at 263 kHz, with the parts shown in the schematic.



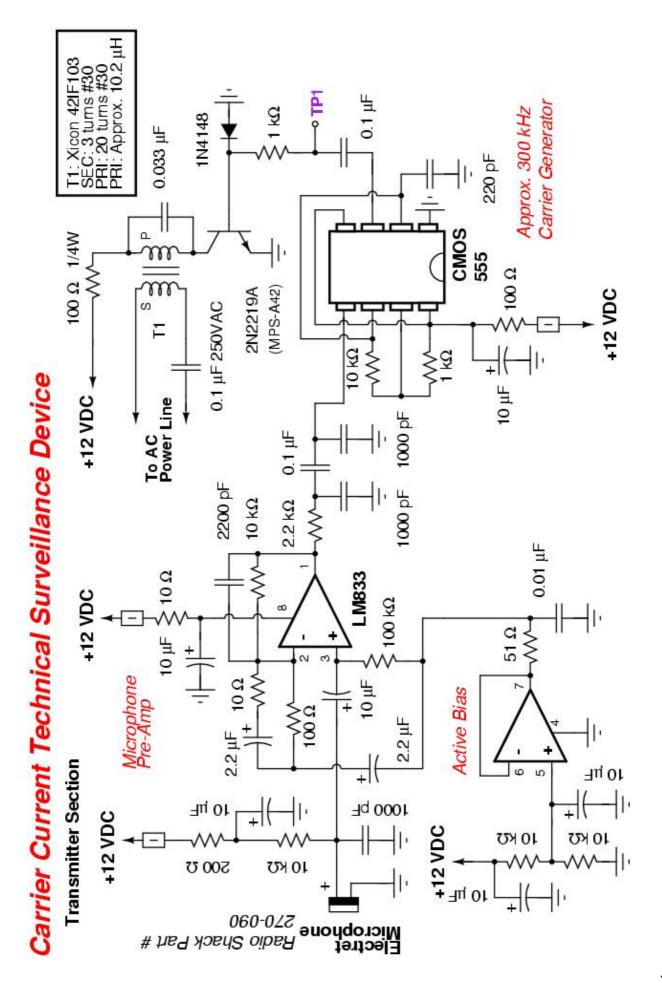
Completed receiver with a NJM2113-based audio amplifier mounted on the side. The final audio amplifier can be replaced with a high-power version, like a LM380, for driving a bigger speaker.



Installation in the case. Power is provided via a wall–wart power supply (lower–left). A separate AC power cord is used for the carrier current pick–up (lower–right). The top panel, from left–to–right, is the headphone jack, volume pot and on/off switch, and a power LED.



Completed carrier current receiver (left) and the transmitter hidden inside a cable TV converter box (right). The receiver is using an external wall–wart DC power supply. The AC pick–up is from a separate power cord coming out the back. To connect the receiver to something other than AC power lines (say, phone lines), build a breakout box from an old outlet and run the lines into that.



#### 10 µF 10 0 300 Hz High-Pass Filter +9 VDC LM833 10 uF Bipolar SS0 bE 510 0.01 uF 10 µF Bipolar 100 KT 8 <u>o</u> Speaker 0.033 µF 20 kΩ Volume 10 kΩ Audio Taper= \$ 10 kg 0.033 µF 2.2 2 20 KΩ 2 KO 0.33 µF MC34119 (NJM2113) 2.2 +9 VDC 10 Ω 100 μF 1000 pF 1000 pF 4.7 µF .|| 4.7 µF ,1 10 uF 10 0 P VDC Buffer & 7000 Hz Low-Pass Filter 22 KΩ LM833 22 kΩ Zero-Crossing Detector Carrier Current Technical Surveillance Device 10 \O +5 VDC SS KO 100 pF LM393 2.2 kg 39 KO √W-₹ 47 kΩ Multiturn 5 ko TP2 MS ₹ 2 2X 1N4004 FM Demodulator 10.02 100 µF CD4046 4.7 KQ +5 VDC Output to LM393 330 pF Ground Shield & Center Tap 2x -(REF \_\_ Xicon 42IF103 Precision Voltage Regulator Ferrite Bead Receiver Section 200 O 1/4W 250 VAC To AC Power Lines 0.1 IF I +9 VDC TL431

10 KV

10 KO

# Nortel DMS-100 Line Attribute Table (LINEATTR)

#### **Table Name**

Line Attribute Table

#### **Functional Description of Table LINEATTR**

Line attributes are assigned to regular lines in table LENLINES (Line Assignment), to Meridian stations and attendant consoles in Meridian Digital Centrex (MDC) translation tables, to Residential Enhanced Services (RES) lines in table IBNLINES (IBN Line Assignment), to Single–Line Basic Rate Interface (SLBRI) lines in table KSETLINE (Business Set and Data Unit Line Assignment), and to wireless lines in table CELLCUST (Cellular Customer).

NA011 feature AU3279, *LINEATTR SERVORD Enhancements*, split table LINEATTR into three tables to make data management easier:

- LINEATTR (Line Attribute)
- RATEAREA (Rate Area)
- XLAPLAN (Translation Plan)

The LINEATTR Compression Tool feature (59017776) checks for duplicate tuples during the ADD, CHA, and REP commands. A warning message appears before the confirmation to provide an alert of a duplicate tuple. The message only generates when table OFCVAR (Office Variables) parameter XLAPLAN\_RATEAREA\_SERVORD\_ENABLED (XRSE) is set to MANDATORY\_PROMPTS. This warning does not prevent datafill validation.

For switches using North American translations, all changes to translations fields are made in table XLAPLAN, and all changes to billing fields are made in table RATEAREA.

#### **Partitioned Table Editor**

In DMS-100 switch offices with the Partitioned Table Editor (PTE) feature, the operating company can authorize a non-operating company user to use PTE to edit specified tuples of table LINEATTR.

To access a tuple in table LINEATTR, the tuple must be owned by the end user. Ownership of tuples is defined in field OWNER of table DATAOWNR (Data Owner).

PTE enables the operating company to limit edit access to a table for a specified end user. Access can be set to denied, read–only, change–only, or add and delete tuples. It is recommended that PTE access for non–operating company users be limited to *change–only* access.

For additional information on PTE and Customer Data Change (CDC), refer to tables OWNER and DATAOWNR.

#### **Datafill Sequence**

The following tables must be datafilled before table LINEATTR:

- AMAGRPID (Automatic Message Accounting Group Identification)
- RATEAREA (Rate Area)
- XLAPLAN (Translation Plan)

For international switches, the following tables must be datafilled before table LINEATTR:

- DGHEAD (Digit Analysis Head)
- FEATCHG (International Line Feature Metering)
- PXHEAD (Prefix Code Head)

## **Table Size**

0 to 32,000 tuples

Memory is automatically allocated for the maximum number of tuples. Operating company personnel can delete tuples in this table if the tuple is not referenced in other tables.

### **Datafill**

The following table describes datafill for table LINEATTR:

# Table LINEATTR Field Descriptions

Field	Subfield	Entry	Explanation and Action
LNATTIDX		Alphanumeric (up to 16 characters)	Line Attribute Index Enter the index into table LINEATTR.
LCC		Alphanumeric (up to 8 characters, or NLCC)	Line Class Code Enter the Line Class Code (LCC) assigned to the line attribute index. The LCC of an existing tuple cannot be changed. If there is no LCC, enter "NLCC".
CHGCLSS		CAMO, CAM1, CAM2, CAM3, CSD0, DAT0, DAT1, DAT2, DAT3, DIHS, DLHS, DLLS, INWO, LAMO, LCDR, MBG, RCFW, SPCL, TRMB, TWXO, WAT0, Or NONE	Charge Class If the switching unit is configured for Local Automatic Message Accounting (LAMA), enter the charge class assigned to the line attribute index. Otherwise, enter "NONE".  Note: With Bellcore Call Detail Element (CDE) format, entry is "NONE" except in offices with the AMA Modernization feature.
COST		HI, LO, or NT	Class of Service Tone Enter the class of service tone required: "HI" (high tone), "LO" (low tone), or "NT" (no tone).  The class of service tone forwarded to the operator depends on the type of originator and on the values in field COST of table LINEATTR and fields CSTHTONE and CSTLTONE of table OFRT (Office Route).
LTG		Numeric (0 to 9,998)	Line Treatment Group Enter the Line Treatment Group (LTG) number assigned to the line attribute index.

The LTG number discriminates between customer lines assigned to the same LCC but with  $\,$ 

different routing or screening patterns.

If more than one LTG number is assigned, office parameter SO\_PROMPT\_FOR\_LTG in table OFCVAR (Office Variables) must be set to "Y".

		set to "i".
TRAFSNO	Numeric (0 to 127)	Traffic Separation Number Enter the source and destination traffic separation number (1 to 127) assigned to the line attribute index. If a traffic separation number is not required, enter "0" (zero).
		Traffic separation enables a peg count of Direct Dial (DD), Operator Assisted (OA), or No Prefix (NP) calls to be accumulated between an incoming source (incoming trunk or originating line attribute) and an outgoing source (outgoing trunk, terminating line attribute, tone, or announcement).
		For switching units with feature package NTX085AA (Traffic Separation Peg Count), the range of values for the traffic separation number is dependent on the value of office parameters TFAN_IN_MAX_NUMBER and TFAN_OUT_MAX_NUMBER in table OFCENG (Office Engineering).
		For switching units without feature package NTX085AA, the range of values for the traffic separation number is 0 to 5.
		Refer to table TFANINT (Traffic Separation Intersection) for more information on traffic separation numbers.
SFC	Alphanumeric (up to 6 characters, or	International Subscriber Feature Class  If the switching unit has an international load, enter an international subscriber feature class.
	NILSFC)	The feature class entered here must appear in table FEATCHG. For loads other than international ones, enter "NILSFC".
MDI	Numeric (0 to 1,023)	Metering Data Index  If the switching unit has an international load, enter the metering data index assigned to the line attribute index. For loads that are not international, enter "0" (zero).
IXNAME	See subfields	International Translations System Start This field consists of subfield XLASYS and refinement XLANAME.
XLASYS	AC, AM, CT, DN, FA, FT, OFC, NSC, PX, or NIL	International Translations System  If the switching unit has an international load, enter the head table name where translation starts, and datafill refinement XLANAME.  For loads that are not international, enter "NIL" and leave refinement XLANAME blank.
		For a MDC equipped with the feature Open Number

Translations, enter "PX" to direct the call to

			log is generated and the call is sent to Call Not Accepted (CNAC) treatment.
XI	LANAME	Alphanumeric (1 to 8 characters)	International Translations Name Enter the index into the head table referenced by field XLASYS.
DGCLNAME		Alphanumeric (up to 8 characters, or NIL)	Digit Analysis Tables Entry Point If the switching unit has an international load, enter a digit analysis name to serve as the entry point into the universal digit analysis tables DGHEAD (Digit Analysis Head) and DGCODE (Digit Analysis Code).
			The name entered here must appear in table DGHEAD field DGNAME. For loads that are not international, enter "NIL".
FANIDIGS		Numeric (00 to 99)	Flexible ANI Information Digit Pairs If the switching unit is equipped with feature BR0713 (Flexible ANI Information Digit Assignment), enter the Flexible Automatic Number Identification (FANI) information digit pair assigned to the line attribute index. Otherwise, enter "00".
			This digit pair is transmitted to an Inter-LATA Carrier (IC) or an Operations Support System (OSS) as part of the ANI spill (provided the IC or OSS is equipped to receive the FANI information digit pair, as indicated in field FANI of table OCCINFO [Equal Access Other Common Carrier Information]).
DFLTXLP		Alphanumeric (up to 16 characters)	Key Into Table XLAPLAN  The key entered must exist in table XLAPLAN.
DFLTRA		Alphanumeric (up to 16 characters)	Key Into Table RATEAREA The key entered must exist in table RATEAREA.
OPTIONS		ADMININF, AMAGRPID, HOT, LCABILL, or LDSV	Line Attribute Options This field is a vector consisting of up to three options.
		01 250 V	Enter "ADMININF" to create a short explanation or note regarding the use of the LINEATTR tuple, and datafill subfield ADMININF.

the TOPS operator for time and charge is  $% \left\{ 1\right\} =\left\{ 1\right\} =\left$ required or if the outgoing trunk group type is

Enter "HOT" if identification of hotel lines to

Enter "AMAGRPID" if a group identity for subscription basis tariff is required, and

datafill subfield AMAGRPID.

the translator name specified in refinement XLANAME. (Translation selector NET, network type DOD must be datafilled in table IBNXLA.) If the entry is other than PX or NIL, a DFIL117

OP.

Enter "LCABILL" if a non-interexchange carrier

call is billable.

Enter "LDSV" if Long Distance Signal Valid (LDSV) is required on a line-group basis, and datafill subfield LDSV\_STATE.

The "LDS" feature automatically provisions the LDS Option (LDSO) and the LDS Activate (LDSA) options on all lines in the same line group if LDSV is assigned against the line group and the office parameter LDS\_AUTO\_PROV\_ENABLED is set to "Y".

The LDSO and LDSA options are removed if LDSV is not provisioned against the line group. This autoprovisioning occurs after either an incoming local or toll call terminates on the line or the end user enters the LDSA feature access code.

LDSV_STATE	ACT or DEACT	Long Distance Signal Valid Status Enter "ACT" to indicate that LDSV is activated for the line group.
AMAGRPID	Alphanumeric (up to 8 characters)	AMA Group Identity Enter a group identifier defined in table AMAGRPID.
ADMININF	Alphanumeric (up to 32 characters)	Administration Information Enter any string containing alphabetic characters, numeric characters, or underscores up to 32 characters. This entry provides a explanation or note regarding the use of the LINEATTR tuple. The operating company defines the content of this entry.

Enter "+" if additional information for this tuple is in the next record. Otherwise, enter "\$" to indicate the end of the tuple.

Continuation Mark

-End-

CONTMARK

#### **Datafill Example**

The following example MAP display shows sample datafill for table LINEATTR:

+ or \$

LNATTIDX DGCLNAME	LCC FANIDIGS	CHGCLSS DFLTXLP	COST DFLTRA	LTG	TRAFSNO	SFC OPTIONS	MDI	IXNAME
0 NIL	IBN 00	NONE 905_NPRT_0	NT NLCA_NIL	0 LA_0	0	NILSFC \$	0	PX IDCXLA

# **Supplementary Information**

The following table describes Class of Service Tones (COST). Fields CSTHTONE and CSTLTONE are in table OFRT, and other lines refer to nonparty lines:

\_\_\_\_\_\_

#### Class of Service Tones

CSTHTONE	CSTLTONE	Type of Originator	Table LINEATTR COST	Resulting Tone
N	N	Line or Trunk	Don't Care	None
N	Y	Line or Trunk	Don't Care	Low
Y	N	Line or Trunk	Don't Care	High
Y	Y	Trunk	Not Applicable	None
Y	Y	Party Line	Don't Care	None
Y	Y	Other Lines	NT	None
Y	Y	Other Lines	LO	Low
Y	Υ	Other Lines	HI	High

<sup>-</sup>End-

The following table lists and describes DMS-100 Line Class Codes (LCC):

#### Line Class Codes

LCC	Description
ADATA1	Meridian ARIES Set Option Do not use in this table; refer to table IVDINV. (Integrated Voice and Data Set Inventory)
A2008	Meridian ARIES 2008 8-Key Set Do not use in this table; refer to table IVDINV.
A2016	Meridian ARIES 2016 16-Key Set  Do not use in this table; refer to table IVDINV.
A2016S	Meridian ARIES 2016 Secure Set Do not use in this table; refer to table IVDINV.
A2216A	Meridian ARIES 2016 Automatic Call Distribution (ACD) Set Do not use in this table; refer to table IVDINV.
A2216B	Meridian ARIES 2016 ACD Set Do not use in this table; refer to table IVDINV.
	Coin First Service Assign a LCC of CCF to prepay coin lines.

To define a RES CCF line, enter "Y" (yes) in field RESINFO.

If the switching unit is not configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to Operator Assisted (OA) for digit zero (0) if the coin is returned to the subscriber on 0- calls.

If the switching unit is configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to "OA" for digits 01 to 09 if the coin is returned to the subscriber on 0+ calls. The coin is automatically returned to the subscriber on 0- calls if field ZEROMPOS is other than "NONE".

For calls other than 0+ or 0- that route directly from the standard pre-translator, set the type of call to "OA" if the coin is returned to the

subscriber.

For calls that route through the route reference subtables, the nonstandard route selector (N) must be specified and the Cancel Normal Charge (CANCNORC) field must be set to "Y" if the coin is returned to the subscriber.

\_\_\_\_\_\_

#### CDF Coin Dial-Tone First Service

Assign a LCC of CDF to dial-tone first coin lines.

To define a RES CDF line, enter "Y" in field RESINFO.

If the switching unit is not configured for 0+ dialing, set the type of call in the standard pre-translator subtable to "OA" for digit 0 if a deposited coin is returned on 0- calls.

If the switching unit is configured for 0+ dialing, set the call type in subtable STDPRTCT.STDPRT to "OA" for digits 01 to 09 if the coin is returned to the subscriber on 0+ calls. The deposited coin is returned automatically to the subscriber on 0- calls if field ZEROMPOS is other than "NONE".

For calls other than 0+ or 0- that route directly from the standard pre-translator subtable, set the type of call to 0A if the coin is returned to the subscriber.

For calls that route through the route reference subtables, specify the "N" selector and the set the Cancel Normal Charge (CANCNORC) field to "Y" if the coin is returned to the subscriber.

\_\_\_\_\_\_

#### CFD Coin Free Dialing Service

Assign a LCC of CFD to coinless pay station (restricted sent paid) lines.

\_\_\_\_\_\_

To define a RES CFD line, enter "Y" in field RESINFO.

#### COIN International Coin Line

In a switch with an international load, assign a LCC of COIN to international coin lines.

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#### CSD Circuit Switched Digital Data Service

Assign a LCC of CSD to circuit switched digital data service lines.

#### CSP Coin Semi-Postpay Service

Assign a LCC of CSP to semi-postpay coin lines.

To define a RES CSP line, enter "Y" in field RESINFO.

#### DATA Data Unit

Do not use in this table; refer to table KSETINV.

(Business Set and Data Unit Inventory)

#### DISP Electronic Business Set with Display

Do not use in this table; refer to table KSETINV.

#### EOW Enhanced Outward WATS

Assign a LCC of EOW to lines with enhanced Outward Wide-Area Telephone Service (OUTWATS) in offices with feature packages NTX186AA/AB (Equal Access End Office) and NTXA16AA [Enhanced WATS Operation (POTS)].

EOW is similar to a LCC of OWT (OUTWATS Service), except that EOW can be used with or without a hunt group, and EOW can be used in conjunction with the Enhanced WATS Access Line (EWAL) option.

To define a RES EOW line, enter "Y" in field RESINFO.

\_\_\_\_\_\_

ETW	Enhanced Two-Way WATS Assign a LCC of ETW to lines with enhanced OUTWATS service in offices with feature packages NTX186AA/AB (Equal Access End Office) and NTXA16AA [Enhanced WATS Operation (POTS)].
	ETW is similar to a LCC of 2WW (Two-Way WATS), except that ETW can be used with or without a hunt group, and ETW can be used in conjunction with the Enhanced WATS Access Line (EWAL) option. ETW is a combination of the capabilities of Inward WATS (INW) and Enhanced Outward WATS (EOW).
	To define a RES ETW line, enter "Y" in field RESINFO.
IBN	Integrated Business Network Station Assign a LCC of IBN to Meridian Digital Centrex (MDC) stations. The line attributes for these lines are assigned in table IBNXLA (IBN Translation) tuples that have Direct Outward Dial (DOD) access codes.
INW	INWATS Service Assign a LCC of INW to subscribers enabled to receive calls, from within specified areas, that have been placed without charge to the originating party.
	To define a RES INW line, enter "Y" in field RESINFO.
MOB	Mobile Cellular Service Assign a LCC of MOB to mobile cellular subscribers.
M5008	Meridian Set (8 Keys) Do not use in this table; refer to table KSETINV.
M5009	Meridian Set (9 Keys) Do not use in this table; refer to table KSETINV.
M5018	Meridian Set (18 Keys) Do not use in this table; refer to table KSETINV.
M5112	Meridian Set (12 Keys) Do not use in this table; refer to table KSETINV.
M5208	Meridian Set (8 Keys, Built-In Display) Do not use in this table; refer to table KSETINV.
M5209	Meridian Set (9 Keys, Built-In Display) Do not use in this table; refer to table KSETINV.
M5212	Meridian Set (12 Keys, Built-In Display, Handsfree) Do not use in this table; refer to table KSETINV.
M5216	Meridian Set (16 Keys, Built-In Display, Headset) Do not use in this table; refer to table KSETINV.
M5312	Meridian Set (12 Keys, Built-In Display, Handsfree) Do not use in this table; refer to table KSETINV.
M5316	Meridian Set (16 Keys, Built-In Display, Handsfree) Do not use in this table; refer to table KSETINV.
M5317	Meridian Set (17 Keys, Handsfree) Do not use in this table; refer to table KSETINV.
M6310	Meridian Set (10 Keys, Built-In Display, Handsfree) Do not use in this table; refer to table KSETINV.

Meridian Set (20 keys, Built-In Display, Handsfree) Do not use in this table; refer to table KSETINV. OUTWATS Service Assign a LCC of OWT to lines with OUTWATS service. Line class code OWT is restricted to non-hunt type lines. To define a RES OWT line, enter "Y" in field RESINFO. \_\_\_\_\_\_ PBX Message Rate Service Assign a LCC of PBM to Private Branch Exchange (PBX) message rate lines. PBX Flat Rate Service Assign a LCC of PBX to PBX flat rate lines. Data Unit PDATA Do not use in this table; refer to table KSETINV. \_\_\_\_\_\_ Electronic Business Set without Liquid Crystal Display Do not use in this table; refer to table KSETINV. \_\_\_\_\_ Residential Enhanced Services Line class code RES is automatically assigned to lines with a LCC of 1FR, 1MR, OWT, EOW, INW, 2WW, ETW, CCF, CDF, CFD, CSP, ZMD, or ZMZPA whenever an option from the MDC custom calling feature set is added to the line. Conversely, if all options from the MDC custom calling feature set are removed from a line that has a LCC of RES, the LCC automatically reverts to 1FR, 1MR, OWT, EOW, INW, 2WW, ETW, CCF, CDF, CFD, CSP, ZMD, or ZMZPA. \_\_\_\_\_\_ Semi-Permanent Connection SPC In a switch with an international load, assign a LCC of SPC to lines that are used to set up semi-permanent connections. An SPC is one that can be set up or taken down by operating company personnel in a DMS-100 international switch. A semi-permanent connection has two members. Each of the two members of the connection can be a line with a LCC of SPC or a trunk of trunk group type SPC. The subscriber can use the speech/data path for the duration of the connection. Refer to table SPECCONN (P-Side to P-Side Special Connection) for more information on semi-permanent connections. Standard International POTS Line In a switch with an international load, assign a LCC of STD to standard international POTS lines. TWX Service Assign a LCC of TWX to lines with Teletype Writer Exchange (TWX) service. VIN *Virtual Line* 

Assign a LCC of VLN to Remote Call Forwarding (RCF) lines.

Remote call forwarding enables a subscriber to establish a Directory Number (DN) in one local calling area that translates to a phone in another local calling area. A remote call forwarding DN has no hardware associated with it. Calls placed to RCF DNs are automatically forwarded to the call forwarding number.

RCF DNs are defined in table CFW (Regular and Remote Call Forwarding). Field LINEATTR in table CFW indexes table LINEATTR, pointing to lines with a LCC of VLN. These lines are called virtual because no physical equipment is associated with the DN.

the RCF-to-terminator leg of the call is of type No Prefix (NP), and field MRSA in the associated LINEATTR tuple is datafilled with a valid Multi-Unit Message Rate Area (MRSA) name. Direct Dial (DD) or Equal Access (EA) billing records are produced instead of MUMR records if the second leg of the call is not of type NP. If MUMR billing is not required for a RCF line, field MRSA in the associated LINEATTR tuple is set to "NIL". \_\_\_\_\_\_ Zero Minus Denied Service Assign a LCC of ZMD to an individual line using a pre-translator different from the pre-translator provided for 1FR lines or the pre-translator provided for ZMZPA lines. The pre-translator for ZMD lines must be datafilled to enable only 0+ calls and to block 011 calls. This LCC can be assigned only if the switching unit is equipped to support coinless pay station lines. To define a RES ZMD line, enter "Y" in field RESINFO. Zero Minus Zero Plus Allowed Service Assign a LCC of ZMZPA to an individual line using a pre-translator different from the pre-translator provided for 1FR lines. The pre-translator for ZMZPA lines must be datafilled to enable only 0- and 0+ calls and to block 011 calls. This LCC can be assigned only if the switching unit is equipped to support coinless pay station lines. ZMZPA lines appear as ZMA when posted by the MAP terminal. To define a RES ZMZPA line, enter "Y" in field RESINFO. \_\_\_\_\_\_ Individual Flat Rate Service Assign a LCC of 1FR to individual flat rate lines. To define a RES 1FR line, enter "Y" in field RESINFO. \_\_\_\_\_\_ Individual Message Rate Service Assign a LCC of 1MR to individual message rate lines. To define a RES 1MR line, enter "Y" in field RESINFO. Two-Party Flat Rate Service Assign a LCC of 2FR to two-party flat rate lines. \_\_\_\_\_\_ Two-Way WATS Assign a LCC of 2WW to lines that have both INWATS and OUTWATS service on the same line. Line class code 2WW is restricted to hunt-type lines. Four-Party Flat Rate Service Assign a LCC of 4FR to four-party flat rate lines. Eight-Party Flat Rate Service Assign a LCC of 8FR to eight-party flat rate lines. Ten-Party Flat Rate Service Assign a LCC of 10FR to ten-party flat rate lines.

If MUMR (Multi-Unit Message Rate) billing is required for a RCF line,

# **Automatic Message Accounting Identities**

-End-

If different tariff arrangements are provided by an operating company on a subscription basis, the different subscriptions can be equated to different AMA group identities. Table AMAGRPID is used to create AMA group identifiers that can then be datafilled in field OPTIONS of table LINEATTR.

# Bonus



#### The Men From Mongo Present:

#### A Night in New Jack City on First Friday

(a/k/a 'Our Misadventures with Eric Corley/Emmanuel Goldstein during and after the New York 2600 Meeting')

# Citicorp Center, 5:00 PM:

We arrived at the site of the infamous 2600 meetings early to conduct an early recon. The atrium is filled with young boys who smell strongly of KY Jelly, and a few casually dressed men with short haircuts, who are wearing jackets in 80 degree weather that bulge under the shoulder. We sit alone until The Omega Man recognizes one of the MIBs as someone he killed people with in Cambodia. (Don't ask.)

#### 7:00 PM:

The pied piper of the phreak world, Emmanuel Goldstein (Eric Corley in real life), shows up fashionably late. All the young boys run screaming to him, and spend all their money on t-shirts, hats, and back issues of 2600 which they'll probably never read, yet alone understand. One of the MIBs asks "What's his fucking appeal?" Little did we know we would later find out. After about 15 minutes, the high pitched squealing of prepubescent male voices drives us all fucking nuts so we go out and have a smoke.

#### 8:00 PM:

We're down in the Village chilling out in back of a non-descript looking panel van filled with neat shit. Corley took his entourage to some restaurant where beers were six bucks a bottle. The MIBs tell us we can hang out with them, they have a couple cases of chilled Molson Ice in a cooler. The

Omega Man and his buddy from Cambodia are talking about Class III weaponry while being shown the MP-5s in a rack behind the driver's seat. The Omega Man pulls out his MP-5K PDW and passes it around. All the MIBs are suitably impressed, as all they carry are Glocks. Joshua Tower is fucking with a parabolic mike and spotting scope. He sees EG/EC sitting next to one of the young boys from the 2600 meeting; whispering in his ear. Josh hooks a speaker to the patch panel in time for us to hear EG/EC telling him "Come to NotWorks later and I'll teach you about penetration." The kid looks excited and nods his head up and down vigorously.

### 9:00 PM:

We manage to blend back in with the entourage as they head to NotWorks. NotWorks is this office space filled with computers and electronics that nobody uses. Corley is conspiciously absent. Just as we are about to ask of our host's whereabouts, we hear this high–pitched voice scream "TEACH ME MORE DADDY!" Our question is answered.

#### 9:15 PM:

After listening to a whole bunch of people talk about nothing, we decide to go out and have a smoke. Before we reach the elevator, black jumpsuits carrying some really neat Class III weaponry come crashing through the Window and out the Elevator. We all start reaching for our holsters when one of the black jumpsuits says "What the fuck are you doing here?"

#### 9:30 PM:

The feds didn't find any evidence of computer crime or ECPA violations, and kept muttering about "What a clueless asshole that pothead <redacted> is.", and how they should have just court martialed his ass in <redacted>. When they finally break down a Medeco—locked steel door into a back room and turn on the light however, they find something else getting "owned".

### 10:30 PM:

We're in Mid-Town-South Precenct having coffee and donuts with a detective leutenant who's a regular user of our Warez FTP sites. He keeps asking us "What division are you in?" The Omega Man is with some generic SWAT-garbed uniform showing him his MP-5K. The uniform has this obvious raging hard-on as he examines the Machine Pistol, and asks "Why didn't you start working the job when you came back from overseas?" Little does he know The Omega Man was asked to leave the LAPD due to excessive police brutality complaints against him, making his supervisor puke while watching him "question" a suspect, and suspicion of being involved in the claymore mine homicide of some drug dealer. Some sergeant bursts in yelling "Ya gotta see this!" We all rush into the control center, where microphones in the holding cell are blaring a cachophony of human noise. Occassionaly one hears the word "boyfucker". A cop is walking towards the cell area with an armful of toilet plungers as we watch the monitor. I guess EG/EC is going to learn what the lowest form of jailhouse life is.

#### 11:00 PM

Just as our gracious host is about to bleed to death on the floor of the holding cell, some public defender wielding a writ of Habeus Corpus comes bursting in. He's followed by an EMS ALS unit that hauls him to Mt. Sinai. Apparently the parents of his newest boyfriend called their lawyer, some guy named Bernstein, who convinced them EG/EC was worth more to them alive...

# End of Issue #21



**Any Questions?** 

#### **Editorial and Rants**

More voter fraud by the Democrats. If Manny Golddigger mentions this, I'll give everyone a million dollars.

### N.J. Judge Orders List of Adult Deaths

November 6, 2005 – From: usatoday.com

TRENTON, N.J. (AP) — A judge concerned about the potential for voter fraud in Tuesday's election has ordered the state to compile the names of all adult New Jersey residents who have died since 1985.

State Superior Court Judge Linda R. Feinberg made the ruling Friday after learning that the official responsible for tracking deaths had failed to do so because he didn't know it was his responsibility.

The case stemmed from Republican complaints that an estimated 13,000 people who apparently have died remain on voter registration lists, including 4,755 people who reportedly voted in last November's election.

The state registrar of vital statistics is required to provide counties with an annual list of all people over age 18 who have died, so the counties can remove those names from voter registration lists.

State officials say the annual lists of deaths from 1985 to 2003 are available, but last year's list remains incomplete and unverified. Deputy Attorney General Melissa Racsa said Joseph Komosinski, the registrar since 2003, "was unaware that this was one of his obligations."

Feinberg ordered the office to turn over whatever information it had from 2004.

She said the lists must be distributed by Monday to all of the state's 21 counties and both major political parties. She also ordered election workers to check the names of those who cast absentee and provisional ballots against the names of deceased residents.

"It is truly alarming," Feinberg said of concerns that people might have used dead people's names to illegally vote.

Interesting post from a Lebanese political blog.

#### **Fixing Lebanon Before Fighting the Arab Cause**

Friday, October 28, 2005 – From: lebop.blogspot.com

I am really tired of Westerners (yesterday, on this blog it was a Canadian – CANADIAN!) chastizing me about not being Arab enough, not fighting Israel enough, not pushing for the Arab cause enough.

What in the world is that? [Sorry for this storm of emotion, but I believe blogs are the place to publicly display righteous indignation.]

Who in the world is a Canadian to tell me such things? Because he thinks I should be fighting for the Arab cause, I need to: live without electricity; live under constant bombardment; live with terrorism; live without running water; live in constant fear of violence from all around (remember, pan–Arabists love to fight each other, too).

I'm supposed to listen to people with high speed internet, free healthcare, flower gardens around every house, high salaries, free access to travel practically anywhere without a visa?

I can't even use Skype or Vonage because the connection speed in this country is so slow.

I won't even get into the racism of it all. "Arabs" are supposed to fight Israel. That's part of the defintion. If you have a problem with the term Arab, that means you're Maronite – which according to Leftists means that you are evil.

Well, sorry guys, but there are plenty of leftwing, anti–Israeli parties that don't subscribe to traditional pan–Arabism. The Syrian National Socialist Party believes that the peoples of Cyprus, Lebanon, Syria, Palestine, parts of Iraq, and a sliver of Egypt are all one entity. All those other guys in Saudi and Morocco are totally different people that have nothing to do with "us."

However, you deem the Syrian National Socialists – who take pride in their acts of terror which include the assassination of one President and the attempted assassination of another – in with everyone else because they hate Jews more than the others. Their symbol is a flying swastika, which proves that they hate Joooooos.

But to continue on the racism line: the Maronite attack comes because Maronites are Christians who allegedly aspire to be European. However, Kurds never get blamed for their alliance with Israel. Is it because they are Muslims? Or is it because human rights advocates love to discourse about the poor Kurds to show how brutish, thuggish, and depraved Arabs are for beating up those lovely Kurds who should be given their own nation carved out of Iraq, Syria, Iran, and Turkey?

Kurds identify themselves as being different. They speak a different language. They feel like they are oppressed in their current situations. Why not allow them to have their own country, right?

Maronites identify themselves as being different. They have a different religion. They feel like living in a non-plural society under the helm of Syria oppresses them. Why not allow them to assert their relationship with Israel if they want to? They aren't even asking for a country. (And note that I'm using "they.")

And I don't understand why it is so difficult for people to acknowledge the possibility that Lebanon isn't just an Arab country. We're a Mediterranean country with Jews, Iranians, Greeks, Turks, Turkmen, Armenians, the descendents of crusaders, Italians, Syrians, Arabs, and even the descendents of Russians living amongst us. To claim that we are simply "Arab" is to disenfranchise a huge segment of the population, let alone history. It undermines the pluralism of the Ottoman Empire and ingenious systems the people living in this region came up with to work problems out amongst themselves in coordination with the Ottomans, French, British, Russians, and others.

# Why are Canadians and foreign leftists adding to the racist propaganda in the Middle East? Why are they giving credence to fighting a war with Israel?

We don't need any more war here. Let Canada and France and The Netherlands fight a war with Israel if they feel so strongly about it.

Oh, but war is against human rights, so no white person should ever do that. Leave that to the slightly colored folks with big noses and claim that you would be oppressing Middle Eastern culture if you stopped wars in the Middle East. The liberal white people will set the battle lines through international agreements and centuries old lines, but let the savage Jews, Muslims, and tainted oriental Christians fight for rights. The leftwing will support the weaker power, the rightwing will overwhelmingly support the stronger power.

That's the fallacy of the Western leftwing. None of its arguments on foreign policy are coherent.

At least the rightwing is honest about what they are doing. They specifically state that they want democracy because they believe it will prevent terrorism. They say they want democracy because they believe it will be beneficial to Israel. And you can't make the oil argument or self–interest argument about Lebanon because there isn't anything but mountains, water, agricultural land, and people here.

The leftwing response is, "Well, you shouldn't want democracy if it hurts Syria which is waging the eternal war with Israel. Hezbollah is a wonderful party because it wants to destroy Israel. Islamic terror isn't all that bad because the people are merely expressing their oppression and reasserting their power in the eternal Foucauldian battle."

Don't tell me who I should be fighting. Don't tell me that I should be racist against Jews. Don't tell me what is good for me. How the hell do you know?

My life would be a hell of a lot better if I had high speed internet, decent electricity, and full political enfranchisement. Israel isn't stopping that. Syria and their Lebanese cronies did. Fighting Israel does very little for me.

If you want to fight Israel, put your body where your words are. Go fight Israel, but don't do it from my land or I will fight you. However, if you are doing anything to increase my upload and download connections, working to end Lebanese governmental corruption, and trying to fully rip Syrian security agents and their agenda of terror from my land, then let me take you by the hand.

#### The Branding of the World's Top Intellectual: Noam Chomsky

November 19, 2005 – From: techcentralstation.com

By Peter Schweizer

Editor's note: In light of news that a British poll identified Noam Chomsky as the world's leading intellectual, we thought it would be a valuable exercise to run this excerpt from Peter Schweizer's new book <u>Do As I Say (Not As I Do): Profiles in Liberal Hypocrisy</u> (Doubleday \$22.95).

Note from the Author: Whereas readers of <u>The Prospect</u> found the top public intellectual in Chomsky, I found a poster child for modern–day capitalism and, because of his anti–capitalist views, a complete hypocrite.

One of the most persistent themes in Chomsky's work has been class warfare. He has frequently lashed out against the "massive use of tax havens to shift the burden to the general population and away from the rich" and criticized the concentration of wealth in "trusts" by the wealthiest one percent. The American tax code is rigged with "complicated devices for ensuring that the poor — like eighty percent of the population — pay off the rich."

But trusts can't be all bad. After all, Chomsky, with a net worth north of \$2,000,000, decided to create one for himself. A few years back he went to Boston's venerable white–shoe law firm, Palmer and Dodge, and with the help of a tax attorney specializing in "income–tax planning" set up an irrevocable trust to protect his assets from Uncle Sam. He named his tax attorney (every socialist radical needs one!) and a daughter as trustees. To the Diane Chomsky Irrevocable Trust (named for another daughter) he has assigned the copyright of several of his books, including multiple international editions.

Chomsky favors the estate tax and massive income redistribution — just not the redistribution of his income. No reason to let radical politics get in the way of sound estate planning.

When I challenged Chomsky about his trust, he suddenly started to sound very bourgeois: "I don't apologize for putting aside money for my children and grandchildren," he wrote in one email. Chomsky offered no explanation for why he condemns others who are equally proud of their provision for their children and who try to protect their assets from Uncle Sam. Although he did say that the tax shelter is okay because he and his family are "trying to help suffering people."

Indeed, Chomsky is rich precisely because he has been such an enormously successful capitalist. Despite the anti-profit rhetoric, like any other corporate capitalist he has turned himself into a brand name. As John Lloyd puts it, writing critically in the lefty New Statesman, Chomsky is among those "open to being 'commodified' — that is, to being simply one of the many wares of a capitalist media market place, in a way that the badly paid and overworked writers and journalists for the revolutionary parties could rarely be."

Chomsky's business works something like this. He gives speeches on college campuses around the country at \$12,000 a pop, often dozens of times a year.

Can't go and hear him in person? No problem: you can go online and download clips from earlier speeches—for a fee. You can hear Chomsky talk for one minute about "Property Rights"; it will cost you seventy—nine cents. You can also by a CD with clips from previous speeches for \$12.99.

But books are Chomsky's mainstay, and on the international market he has become a publishing phenomenon. The Chomsky brand means instant sales.

As publicist Dana O'Hare of Pluto Press explains: "All we have to do is put Chomsky's name on a book and it sells out immediately!"

Putting his name on a book should not be confused with writing a book, because his most recent volumes are mainly transcriptions of speeches, or interviews that he has conducted over the years, put between covers and sold to the general public. You might call it multi–level marketing for radicals. Chomsky has admitted as much: "If you look at the things I write — articles for Z Magazine, or books for South End Press, or whatever — they are mostly based on talks and meetings and that kind of thing. But I'm kind of a parasite. I mean, I'm living off the activism of others. I'm happy to do it."

Chomsky's marketing efforts shortly after September 11 give new meaning to the term "war profiteer." In the days after the tragedy, he raised his speaking fee from \$9,000 to \$12,000 because he was suddenly in greater demand. He also cashed in by producing another instant book. Seven Stories Press, a small publisher, pulled together interviews conducted via email that Chomsky gave in the three weeks following the attack on the Twin Towers and rushed the book to press. His controversial views were hot, particularly overseas. By early December 2001, they had sold the foreign rights in nineteen different languages. The book made the bestseller list in the United States, Canada, Germany, India, Italy, Japan, and New Zealand. It is safe to assume that he netted hundreds of thousands of dollars from this book alone.

Over the years, Chomsky has been particularly critical of private property rights, which he considers simply a tool of the rich, of no benefit to ordinary people. "When property rights are granted to power and privilege, it can be expected to be harmful to most," Chomsky wrote on a discussion board for the Washington Post. Intellectual property rights are equally despicable. According to Chomsky, for example, drug companies who have spent hundreds of millions of dollars developing drugs shouldn't have ownership rights to patents. Intellectual property rights, he argues, "have to do with protectionism."

Protectionism is a bad thing — especially when it relates to other people. But when it comes to Chomsky's own published work, this advocate of open intellectual property suddenly becomes very selfish. It would not be advisable to download the audio from one of his speeches without paying the fee, warns his record company, Alternative Tentacles. (Did Andrei Sakharov have a licensing agreement with a record company?) And when it comes to his articles, you'd better keep your hands off. Go to the official Noam Chomsky website and the warning is clear: "Material on this site is copyrighted by Noam Chomsky and/or Noam Chomsky and his collaborators. No material on this site may be reprinted or posted on other web sites without writte permission." However, the website does give you the opportunity to "sublicense" the material if you are interested.

Radicals used to think of their ideas as weapons; Chomsky sees them as a licensing opportunity.

Chomsky has even gone the extra mile to protect the copyright to some of his material by transferring ownership to his children. Profits from those works will thus be taxed at his children's lower rate. He also extends the length of time that the family is able to hold onto the copyright and protect his intellectual assets.

In October 2002, radicals gathered in Philadelphia for a benefit entitled "Noam Chomsky: Media and

Democracy." Sponsored by the Greater Philadelphia Democratic Left, for a fee of \$15 you could attend the speech and hear the great man ruminate on the evils of capitalism. For another \$35, you could attend a post–talk reception and he would speak directly with you.

During the speech, Chomsky told the assembled crowd, "A democracy requires a free, independent, and inquiring media." After the speech, Deborah Bolling, a writer for the lefty Philadelphia City Paper, tried to get an interview with Chomsky. She was turned away. To talk to Chomsky, she was told, this "free, independent, and inquiring" reporter needed to pay \$35 to get into the private reception.

Corporate America is one of Chomsky's demons. It's hard to find anything positive he might say about American business. He paints an ominous vision of America suffering under the "unaccountable and deadly rule of corporations." He has called corporations "private tyrannies" and declared that they are "just as totalitarian as Bolshevism and fascism." Capitalism, in his words, is a "grotesque catastrophe."

But a funny thing happened on the way to the retirement portfolio.

Chomsky, for all of his moral dudgeon against American corporations, finds that they make a pretty good investment. When he made investment decisions for his retirement plan at MIT, he chose not to go with a money market fund, or even a government bond fund. Instead, he threw the money into blue chips and invested in the TIAA-CREF stock fund. A look at the stock fund portfolio quickly reveals that it invests in all sorts of businesses that Chomsky says he finds abhorrent: oil companies, military contractors, pharmaceuticals, you name it.

When I asked Chomsky about his investment portfolio he reverted to a "what else can I do" defense: "Should I live in a cabin in Montana?" he asked. It was a clever rhetorical dodge. Chomsky was declaring that there is simply no way to avoid getting involved in the stock market short of complete withdrawal from the capitalist system. He certainly knows better. There are many alternative funds these days that allow you to invest your money in "green" or "socially responsible" enterprises. They just don't yield the maximum available return.

This can't be good.

Iran: 5000 Fanatic Muslim Clerics To US Mosques

November 24, 2005 – From: postchronicle.com

By J. Grant Swank, Jr.

Mosques in America need more clerics. The solution? Send hard–line, fanatic clerics to the United States. Fill in the blanks: the US sleeper cells are getting more murder–hungry clerics by which to instruct neighborhood Muslims in how to rise up and take over America.

They are already taking over the Netherlands by threatening that country with murder in the streets. Therefore, according to recent press reports, the citizens won't speak anything negative about Islam for fear of being murdered. It's called "self-censorship" there. With that the Muslims can overtake a society.

In Pakistan Muslim males are kidnapping Hindu women from their houses. They force the Hindu

females to "convert" to Islam. If others in the family report these crimes, they are in danger of being killed. Therefore, there are some families escaping wholesale to Canada, India and elsewhere. In other words, Muslims can overtake a society by kidnapping young Hindu girls for Islam.

Fill in the blanks regarding this request from American mosques for Iranian cleric increase: It is the Iranian leadership that has declared that "execution of suicide and missile attacks (must be) aimed at 29 sensitive sites." Further: It is the goal of Islamic international killers to "wipe Israel off the world map."

How better to serve the Koran's Allah than to plant subversives throughout this republic by which to do in America while elsewhere other Muslim murderers global are doing in Israel and so forth, the latter being "29 sensitive sites?"

According to BBC Persian and Persian service of IRNA, these disciples of Allah are in league with "hard-line ayatollah Mesbah Yazdi who has let it be known that 'the Iranians living in the US need 5000 Islamic clerics for their religious services."

This particular spokesman for Allah has requested the Iranian authorities to finance the clerics' training. Training in what? In fulfilling the killing passage of the Koran, of course.

"This hard-line ayatollah is known as the founder of the Shiite version of Taliban in Iran."

Do the American political liberals thereby understand that they are in support of such sleeper cell instructors when they call for US troops to leave New Iraq immediately? Do they not realize that US troops returning to American shores would keep on their uniforms to fight cleric-trained Muslim killers in our own cities and villages?

Do not the entrenched Democrats, particularly those who hate US President George W. Bush, understand that by bucking Mr. Bush at every freedom spread they are cooperating with the Iranian hard–line trained mosque leadership in the United States?

Do not the Cindy Sheehan disciples know that by their wailing on behalf of anti–New Iraq, these same American citizens are undercutting their futures as American citizens. There will no American citizens but Muslim American citizens once the Islamics have establish Iran world rule, killing off all infidels (non–Muslims).

While Muslim murderers global send their sleeper cell slayers to America under the guise of International students, why not then add to these "pupils" the mosque clerics who swell the numbers?

Is it not the aim of every zealot Muslim to destroy western civilization by eliminating it from the planet? Then how better to see the start of the program through than via the religious clerics in mosque pulpits?

What a bunch of assholes. Never trust a Eurosavage to do a man's work.

### Afghan Posting "Too Dangerous" for Dutch Army

November 20, 2005 – From: timesonline.co.uk

By Michael Smith

BRITAIN could be forced to increase the number of troops it sends to Afghanistan next spring because Dutch MPs think it is "too dangerous" to deploy their own soldiers there.

The Netherlands, which already has about 625 troops in Afghanistan, was due to provide a further force of 1,000 to be based in Uruzgan province, which stretches from the centre towards the south of the country.

But a report by the Dutch military intelligence and security service has warned of the extreme danger of operating in the area, which sources close to the country's cabinet said "can't be ignored".

A Dutch withdrawal would place more of the burden on the British, who are taking over command of Nato operations next May.

British forces were originally due to provide the vast bulk of the new force in southern Afghanistan. That fell apart when plans for an early withdrawal from Iraq were shelved, forcing the British to co-opt Australian and Canadian forces as well as the Dutch.

Afghan security officials have confirmed eyewitness accounts of Arab and Chechen terrorists linked to Al–Qaeda offering money to Afghans in the south to kill or kidnap the officials or foreigners.

There have also been reports that Taliban and Al-Qaeda terrorists are being trained by "Arab jihadis" in techniques developed against US and British troops in Iraq.

The American force currently operating in southern Afghanistan has sought to combine nation—building — focused on two provincial reconstruction teams based in Kandahar and at Lashkar Gah, in Helmand province — with highly aggressive counter—terrorist operations.

Concern that these operations were too hostile, negating the positive effects of the reconstruction teams, has been expressed by Afghanistan's president Hamid Karzai. There have been demands within Nato, in particular from France and Germany, for the force to concentrate on nation—building.

The Dutch intelligence report highlights the serious contradiction inherent in concentrating on nation—building in an area where Taliban and Al–Qaeda forces remain active.

The British-led operation in the south, spearheaded by 3 Battalion, the Parachute Regiment, will be part of an expansion of the International Security Assistance Force (ISAF) to cover the whole of Afghanistan.

It coincides with Britain's assumption of command of ISAF when the Allied Rapid Reaction Corps, led by Major–General David Richards, moves into Kabul. Normally based at Rheindahlen in Germany, the multinational force is 1,300 strong, including approximately 300 British troops.

About 90 American troops have been killed in southern Afghanistan in the past year amid a sharp increase in violence.

Sources at 16 Air Assault Brigade, which will provide a command element for the British paratroopers, said they are prepared for "robust and aggressive" operations against terrorists and will be backed up by 10 Apache attack helicopters and six RAF Harrier ground attack aircraft.

British defence sources admitted that while the Nato troops might not necessarily go hunting down Al-Qaeda or Taliban forces, a role American forces will retain, they will have to be "extremely robust", particularly if they intend to destroy the poppy crop. Afghanistan grows more than 90% of

the world's production.

General Sir Mike Walker, chief of defence staff, said in a recent interview with The Sunday Times that eradicating the narcotics industry was by far the biggest problem the coalition faced.

"The truth of the matter is that until alternative livelihoods are available . . . you're not going to make a great deal of progress," Walker said.

Police seized two tons of opium loaded into five Toyota Land Cruisers after a gun battle with drug traffickers in southern Afghanistan that killed one policeman and wounded two others, officials said yesterday. A Portuguese peacekeeper was killed and three others wounded when their vehicle hit a landmine on a road near Kabul.





privates Nathan Mitchell (left) and George Terzian and Sergeant Raymond Rhode (right) from the 45th Infantry Division prepare to deliver a Christmas greeting to the Führer in December 1944, during the initial fight for the village. After the 12th SS Mountain Division was transferred south from Finland, it was able to push the Americans out of Wingen.