

**NO. 4A/4M SWITCHING SYSTEMS  
NETWORK CONTROL CONSOLE**

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**1. GENERAL**

**1.01** The network control console gives the No. 4A/4M network manager the ability to alter routing data in the stored program control (SPC). This is done by various controls activated from the console. The console provides both manual and preprogrammed controls to help alleviate network congestion. This section describes each feature on the console and presents related information so that the network manager can select, assign, and implement appropriate controls.

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### 2. DESCRIPTION

**2.01** The network control console (Fig. 1) can be desk or console mounted. The size of the console will depend on how it is mounted. It must be located in the network management area near the channel 2 teletypewriter. The control panel consists of a key-operated master switch, various selector switches, illuminated pushbutton keys, and some indicating lamps. Each feature is described in the following paragraphs. Table A contains a glossary of the console abbreviations (keys, switches, and lamps).

**2.02 *Master Switch:*** The master switch is located on the top right-hand side of the console. The master switch is key-operated and is designated *MS*. In order to activate the console, the MS key must be turned on, and the red MS lamp lights to indicate that the power is on and the console is ready for use. When the MS key is turned off, no controls can be activated or restored from the console except for remote-controlled, preprogrammed (PP) controls 95 through 99.

**Note:** A spare key should be kept in a secure place to avoid delays if the regular key is misplaced.

**2.03 *Digit Selector Switches:*** Each switch has ten positions designated 0 through 9.

- (a) The A through C switches are used for 3-digit code blocks.
- (b) The A through D switches are used for trunk group index (TGI) numbers for cancel and skip controls and manual trunk overload reroute control (TORC).
- (c) The A through F switches are used for 6-digit code blocks.

**2.04 *DOMAIN Switch (DM):*** There are five settings on the DOMAIN switch: NAC, AC, TAS1, TAS2, and TAS3. This switch is used only for code block controls.

- (a) The NAC and AC domains indicate codes terminating in North America. The NAC is for codes terminating within the home numbering plan area, and AC is for codes completing to other numbering plan areas. TAS1 is for overseas codes selected by calls originating in North

America. TAS2 is for overseas codes selected by calls that originate and terminate outside North America, and TAS3 is for TAS2-type calls that require operator assistance.

**Note:** If there are any questions concerning what domain to select, refer to Form Codes 02 and 03.

**2.05 *PERCENT Switch:*** There are four positions on this switch: 25, 50, 75, and 100. The setting determines the percentage of traffic to be affected on the control being activated.

**2.06 *PP (Preprogrammed TENS and UNITS) Switches:*** These switches have ten positions each (0 through 9) which are used to select a particular preprogrammed number (00 through 99).

- (a) PP controls 00 through 89 are used for single-command controls, and PP controls 90 through 99 are multiple-command controls with each one capable of up to ten individual commands. PP controls 95 through 99 are generally reserved for remote-control activation from a higher ranking office. Any PP controls that are not being used for remote-control operation may be used for local control purposes.

**2.07 *FUNCTION Switch:*** There are 12 assigned positions on this switch. The FUNCTION switch is used to indicate the type of action to be taken by the SPC upon request from the console. The designations and uses are as follows:

- (a) ***CLR (Clear)***—Restores all controls that are on active status.
- (b) ***CANT (Cancel To)***—Cancels traffic offered to a particular trunk group.
- (c) ***CANF (Cancel From)***—Cancels traffic overflowing from a particular trunk group.
- (d) ***SKP (Skip)***—Bypasses a particular trunk group in an established routing pattern and offers the traffic to the next in-chain alternate route.
- (e) ***CB3 (Code Block)***—Blocks traffic to a particular 3-digit code.
- (f) ***CB6 (Code Block)***—Blocks traffic to a particular 6-digit NPA and NNX or NNX

and XXX (first three digits of the line number). A recent change message is required to block a 6-digit code in the NAC domain. The recent change message must be input on the maintenance teletypewriter (TTY) to establish the NAC code in the area code treatment/not area code (ACT/NAC) table. See IM-68000.

- (g) **PP (Preprogrammed)**—Activates preprogrammed controls, PP 00 through 99.
- (h) **MT (Manual TORC)**—Switches traffic overflowing a final route to any other regional center. This control is used only in a regional center.
- (i) **PCS (Print Cancels and Skips)**—Provides a TTY printout of all active manual cancel and skip controls.
- (j) **PCB (Print Code Block)**—Provides a TTY printout of all active code block controls.
- (k) **PRPP (Print Preprogrammed)**—Provides a TTY printout of all active, manual preprogrammed controls.
- (l) **PMT (Print Manual TORC)**—Provides a TTY printout of all active, manual TORC controls. (This feature is only provided in regional center offices.)

**2.08 RC (Regional Center) Switch:** This switch is only provided in regional center offices. It has 12 designated positions (0 through 11). For network purposes, each regional center has been assigned a specific number. The standard designations are as follows:

| Switch Selection | Regional Center |
|------------------|-----------------|
| 0                | Sacramento      |
| 1                | San Bernardino  |
| 2                | Denver          |
| 3                | Dallas          |
| 4                | St. Louis       |
| 5                | Norway          |
| 6                | Rockdale        |

|    |              |
|----|--------------|
| 7  | Pittsburgh   |
| 8  | Wayne        |
| 9  | White Plains |
| 10 | Not assigned |
| 11 | Not assigned |

**Note:** Since a regional center cannot use its own regional center designation number, that number may be assigned to the Regina or Montreal region.

**2.09 Keys (Pushbutton Type):** There are seven keys: AR, DAR, EA1, EA2, ST, EXEC, and RS. These are key lamps, and the top of the key lights when the key is operated. The designations and uses are as follows:

- (a) The AR and DAR keys specify the type of traffic to be affected when activating any control except for code blocks. The AR key when operated will affect only alternate-routed traffic on the particular trunk group selected. The DAR key when operated will affect both alternate- and direct-routed traffic on the particular trunk group selected. If neither key is operated, the AR function is selected automatically by the SPC.
- (b) The EA1 and EA2 keys are used to direct the controlled traffic to two different emergency announcement groups. Only one selection can be specified on any particular control request. When EA1 or EA2 is not specified, the trunk group overflows will be automatically routed to NCA by the SPC.
- (c) The ST key is used in conjunction with the EXEC key. Before any controls can be implemented, the ST (status) key must be operated. An output message will be printed indicating the status of the request. If everything is in order, then the EXEC (execute) key is operated to execute the command. A message will be printed to verify that the control has been activated. If the execute function does not take (e.g., wrong instructions, too many controls, etc.), the EXEC key will not light.
- (d) The RS (restore) key is used to deactivate a particular control. If an error is made in

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selecting the control to be removed (wrong TGI for CANT/CANF or wrong AC/NAC for code blocks), the channel 2 teletypewriter will print out an error message.

**2.10** Indicating lamps inform the network manager that one or more controls of a particular type are *manually* active in the machine. The lamps are located at the top of the console to the right. There are three lamps (CSK, CB, and PP), and regional offices also have an MT lamp. Their designations are as follows:

- (a) The CSK lamp indicates that one or more CANT, CANF, or SKP manual controls have been implemented.
- (b) The CB lamp indicates that one or more 3- or 6-digit code block controls have been implemented.
- (c) The PP lamp indicates that one or more manual preprogrammed controls have been implemented.
- (d) The MT lamp indicates that one or more manual TORC controls have been implemented.

**Note:** When a higher ranking office sends a signal to implement a remote preprogrammed control (95 through 99), an RTC (0 through 4) lamp lights; and when the control is activated, a DRTC (0 through 4) lamp lights. The lamps are located at the top of the console to the left.

### 3. OPERATION OF THE NETWORK CONTROL CONSOLE

**3.01** In order to implement a control from the console, the switches must be set and the necessary keys operated. Table B lists the available controls and proper key and switch settings.

**3.02** There are two types of controls, manual and dynamic. The network control console enables the network manager to activate manual controls as required or on a preprogrammed basis. Dynamic controls go in automatically when dynamic overload control (DOC) equipment in a higher ranking office recognizes a predetermined level of congestion.

**Note:** Whenever a control has been activated or removed, the stored program control (SPC) will cause an *NCTTY* (network control

teletypewriter) lamp to flash 120 IPM in the maintenance center of the switchroom. This will notify the maintenance center that a control change has occurred. A teletypewriter printout of the action taken may then be requested.

### 4. MANUAL CONTROLS

**4.01** Manual controls include code blocking, cancels, skips, restores, clear, control printouts, and TORC (at the regional center). The method to activate each control is described in the following paragraphs.

**4.02 Code Blocking:** The console provides means for blocking 25, 50, 75, or 100 percent of all traffic to any 3- or 6-digit codes. Manual implementation of the code block (CB) can be placed on any 3- or 6-digit code. The code block will cancel the designated traffic routed to the trunk groups and will route it to an announcement. (Refer to Tables C and D.)

**4.03 Cancel To or Cancel From:** The console provides the ability to cancel 25, 50, 75, or 100 percent of all alternate-routed *or* direct- and alternate-routed traffic advancing to (CANT) or from (CANF) a particular trunk group.

(a) These two controls are frequently misunderstood. Most of the confusion is due to the fact that they are frequently compared to "R" and "S" cancellation keys: Although similar in purpose, they are more complex and versatile. The key items to remember about these controls are as follows:

- (1) CANT and CANF controls can be applied in percentages of 25, 50, 75, and 100.
- (2) CANT and CANF controls can be applied to block alternate-routed traffic only *or* alternate- and direct-routed traffic.
- (3) In an office without a peripheral bus computer (PBC), when these controls are being applied to a multipart trunk group (more than one GB relay/suffix), CANT should be applied to the first part; and CANF should be applied to the last part. Multipart trunk groups in a PBC office can be grouped on the 04B form to act as one group for network controls.

(b) Manual CANF is used to cancel traffic overflowing a high usage trunk group and prevents it from advancing to its next alternate route. This, in effect, finalizes the trunk group. Canceled traffic is routed to an announcement. (Refer to Table E.)

(c) Manual CANT is used to cancel traffic being offered to a trunk group. The canceled traffic is then routed to an announcement. (Refer to Table F.)

**4.04 Skip Routing:** Skip routing causes 25, 50, 75, or 100 percent of the overflow traffic from a particular high usage trunk group to bypass its normal alternate route and advance to its next in-chain-group alternate route (Table G). When a skip route is being applied to a multipart trunk group (more than one GB relay), the control should be applied to the first subgroup.

**4.05 Restore:** The RS key provides the ability to deactivate a particular control from active status (Table H).

**4.06 Clear:** To remove all manual controls at one time, operate the CLR key (Table I).

**4.07 Traffic Overload Reroute Control (TORC):** This reroutes 25, 50, 75, or 100 percent of all overflow traffic from one regional center final trunk group via another regional center trunk group where high usage and final trunk groups are utilized to complete the traffic (Table J).

**4.08 Active Control Printout:** This is used to obtain a printout of a particular active control (Table K).

**5. PREPROGRAMMED CONTROLS**

**5.01** Preprogrammed controls are made available in the stored program control (SPC) via a recent change message. The types of controls include code blocking, skip, CANT, CANF, and reroutes. All controls have been discussed previously except reroutes. Some preprogrammed controls may be operated manually, while others will respond to a remote signal. Preprogrammed controls are a "shorthand" method for activating preplanned controls. The reroute feature allows certain direct- or alternate-routed traffic to flow to other trunk groups outside the normal routing pattern to utilize idle capacity. Refer to Dial Facilities Management

Practices, Division H, Section 13c(3), for the proper procedure to initiate a reroute.

**5.02** When the decision is made on the type of preprogrammed control to be implemented in the machine, an ETS 8075 Form Code must be filled out. Form Codes 12 through 17 are used for network management preprogrammed controls. For a list of available preprogrammed controls, see Table B.

**5.03** PP keys 00 through 89 can only activate a single control, whereas PP keys 90 through 99 can activate multiple controls with up to ten functions each. PP keys 95 through 99 are generally reserved for remote control activation from a higher ranking office. If these controls are not required for remote activation, they may be assigned for local use.

**5.04** In order to implement a preprogrammed control, set the FUNCTION switch to PP. Select the proper TENS and UNITS number on the PP switches, and execute the command. Table L shows the procedure for implementing preprogrammed controls.

**6. DYNAMIC CONTROL REMOTE INPUTS**

**6.01** The preprogrammed controls 95 through 99 can be activated by a signal via a signal from a higher ranking office. In periods of heavy traffic, these controls can be switched on and off rather frequently. To prevent the channel 2 teletypewriter from being tied up during these intervals, a verification message is not printed whenever a control is activated. To request a printout, set the PP TENS and UNITS switches to the number of the control in question; set the FUNCTION switch to PRPP, and then operate the ST key. This will provide a printout on the channel 2 teletypewriter.

**7. CONTROL LIMITATIONS**

**7.01** A maximum of 178 controls can be activated simultaneously. This total includes 38 manual controls and 140 preprogrammed controls. There cannot be any redundancy between manual or preprogrammed controls; otherwise, an alarm 1 message will print out indicating an attempt to

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install two conflicting controls over the same route. Limitations on active controls are as follows:

- (a) Cannot exceed 18 code blocks between manual and preprogrammed controls
- (b) Cannot exceed any combination of 20 CANF, CANT, and SKP on manual controls
- (c) Cannot exceed 20 reroutes on preprogrammed controls
- (d) Cannot exceed 50 controls on a remote preprogrammed basis.

**Note:** An alarm message will print on the channel 2 teletypewriter if any of these limitations are exceeded.

### 8. NETWORK MANAGEMENT FORM CODES

**8.01** For a description of and the proper procedure for filling out the network management Form Codes 12 through 17, refer to Dial Facilities Management Practices, Division H, Section 13c(2), 4.13 through 4.19, for non-PBC offices and Section 13c(3), 4.13 through 4.19, for PBC offices.

### 9. ALARM PRINTOUTS

**9.01** To implement a manual or a preprogrammed control, two stages are required. The first stage is to request a verification of the control requested. This is done by operating the ST (status) key. At that time, a "ready" or "alarm" status verification message will be printed on the channel 2 teletypewriter. The ready status allows the second stage, which is execute, to be implemented. This is done by operating the EXEC key. If there is an alarm status, it represents an input error, which will prevent the implementation of the control requested. The EXEC key will not light if the control request fails to light.

**9.02** The network manager must be familiar with the alarm printouts. If there is a major failure in the network and an improper command is given to the electronic translator system (ETS), it could cause a major delay in implementing the proper control. For a list of the alarm messages, see Table M. Most offices find that experimenting with improper commands helps them become familiar

with the alarm messages. These experiments are not service affecting unless they are executed.

### 10. TELETYPEWRITER ACCESS TO THE ETS

**10.01** Whenever controls cannot be activated from the console (console malfunction or misplaced key), they can be implemented by using one of the three teletypewriters, channel 0, 2, or 10, to access the ETS. Channels 0 and 2 are maintenance TTYs; channel 10 is the network management TTY.

**Note:** If there is a problem in understanding input and output messages, refer to the Input and Output Manuals. The network manager will require ready access to both of these manuals. It is very important to input the message correctly. If it is not correct, the teletypewriter will respond with an *NG* message which prevents the implementation of the required controls. If it *is* correct, the teletypewriter will respond with an *OK* message.

**10.02** *Input Messages:* Table N lists the input messages required to implement a control.

**10.03** *Output Messages:* As soon as the input message has been received by the ETS, an output message will be printed. All network control output messages will be printed on the channel 2 teletypewriter. Table O describes the output messages.

### 11. CONTROL RECORD

**11.01** A record should be maintained showing each request to implement or remove a control. There is no standard outage log or network control ticket. Each office should design its own to meet its requirements. The information needed on the log and ticket depends on the class of office, e.g., regional, sectional, primary, etc., and organizations to whom control activity must be reported. The requirements of the regional center and the network control center should be considered when making up the outage log and control ticket.

**12. CONSOLE MALFUNCTION**

**12.01** If the ETS console malfunctions, it should be reported to the maintenance center. Maintenance has a group of trouble test routines

that can be performed to help locate the trouble. These routines are not done on a scheduled basis but are done only to locate a specific type of trouble. For reference information, see Bell System Practices, Section 212-409-501.

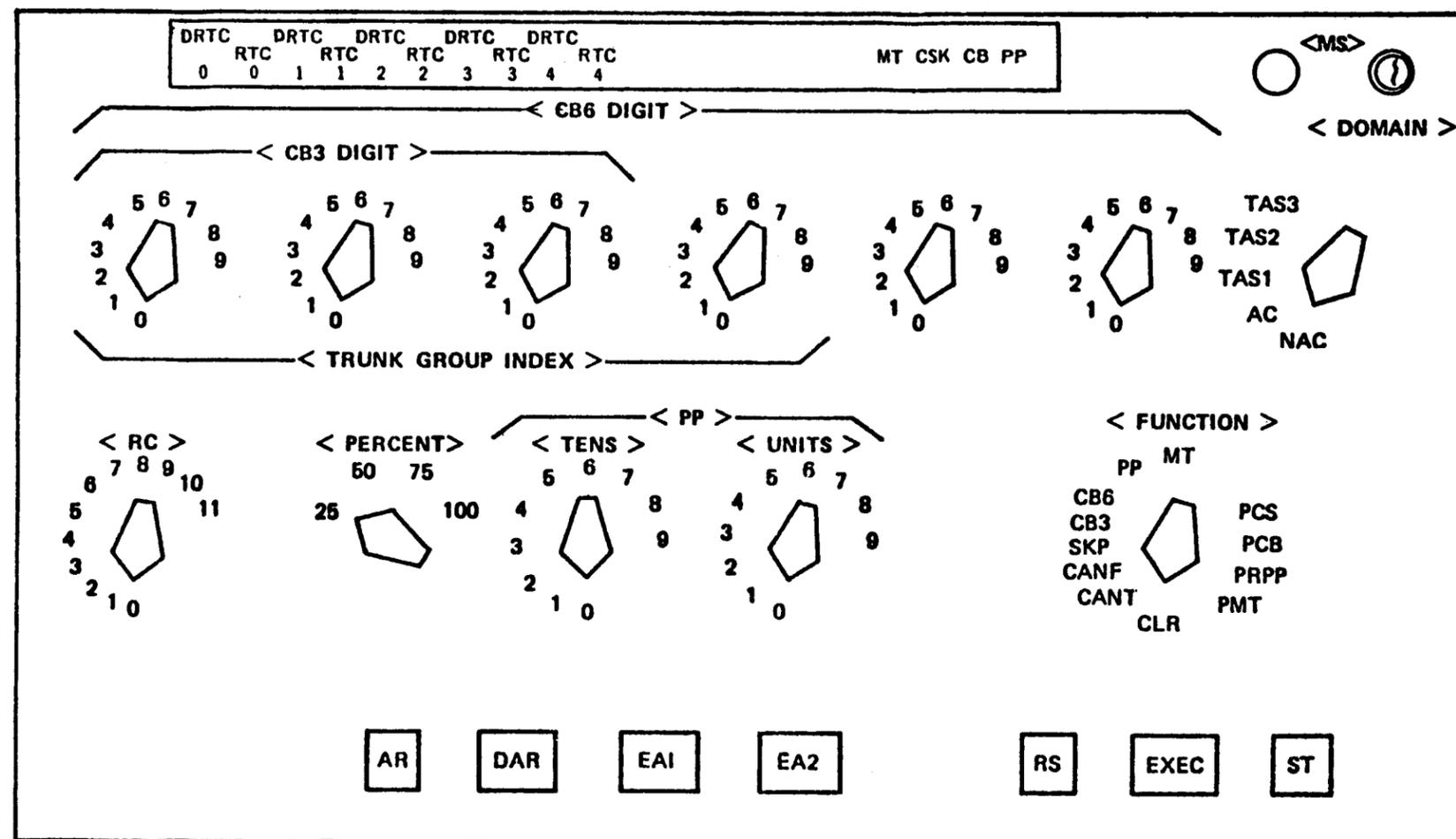


Fig. 1—Network Control Console

**TABLE A**  
**ETS**  
**NETWORK CONTROL CONSOLE**  
**GLOSSARY**

| <b>FUNCTION SWITCH</b>                 |  |
|--|--|
| PCS                                    | Prints all manual cancel and skip controls activated           |
| PCB                                    | Prints all active manual code blocks                           |
| PRPP                                   | Prints all active manual preprogrammed controls                |
| PMT                                    | Prints all active manual TORC controls (regional centers only) |
| CLR                                    | Clears all manually input controls                             |
| CANF                                   | Cancels traffic overflowing from a trunk group                 |
| CANT                                   | Cancels traffic offered to a trunk group                       |
| SKP                                    | Skips a trunk group  |
| CB3                                    | Blocks a 3-digit code  |
| CB6                                    | Blocks a 6-digit code  |
| PP                                     | Preprogrammed control  |
| MT                                     | Manual TORC (regional centers only)                            |
| <b>DOMAIN SWITCH</b>                   |  |
| NAC                                    | Non-area-code domain (home NPA)                                |
| AC                                     | Area code domain   |
| TAS1                                   | Overseas routes for gateway offices                            |
| TAS2                                   | Overseas routes for gateway offices                            |
| TAS3                                   | Overseas routes for gateway offices                            |
| <b>A – F SWITCHES (DIGIT SWITCHES)</b> |  |
| ABC                                    | 3-digit code   |
| ABCDEF                                 | 6-digit code   |
| ABCD                                   | Trunk group index  |
| <b>PP SWITCHES</b>                     |  |
| TENS                                   | Associate with assigned number of preprogrammed control        |
| UNITS                                  | Associate with assigned number of preprogrammed control        |

TABLE A (Cont)

**ETS  
NETWORK CONTROL CONSOLE  
GLOSSARY**

| <b>PERCENT SWITCH</b> |   |
|-----------------------|---|
| 25                    | Determines the degree (percentage) of the control activity                                    |
| 50                    | Determines the degree (percentage) of the control activity                                    |
| 75                    | Determines the degree (percentage) of the control activity                                    |
| 100                   | Determines the degree (percentage) of the control activity                                    |
| <b>KEYS</b>           |   |
| MS                    | Master switch off — on  |
| AR                    | Alternate route traffic   |
| DAR                   | Direct and alternate route traffic  |
| EA1                   | Emergency announcement No. 1  |
| EA2                   | Emergency announcement No. 2  |
| RS                    | Restore control key   |
| EXEC                  | Execute control key   |
| ST                    | Status control key  |
| <b>LAMPS</b>          |   |
| RTC (0 through 4)     | Remote traffic control requested; associated with remote preprogrammed controls 95 through 99 |
| DRTC (0 through 4)    | Remote traffic control activated; associated with remote preprogrammed controls 95 through 99 |
| MS                    | Master switch on  |
| CSK                   | One or more manual cancels or skips activated   |
| CB                    | One or more manual code blocks activated  |
| PP                    | One or more manual preprogrammed controls activated   |
| MT                    | One or more manual TORC controls activated (regional offices only)                            |

TABLE B  
NETWORK CONSOLE CONTROLS KEY AND SWITCH SETTINGS

| FUNCTION SWITCH POS. NO. | TYPE OF CONTROL   | FUNCTION SWITCH SETTING | A, B, C, D, E, F SWITCH SETTINGS                              | PERCENT SWITCH SETTING                  | DOMAIN SWITCH SETTING                                     | RC SWITCH SETTING   | PP SWITCH SETTINGS                                      |       | KEYS            |                             |     |
|--------------------------|---|-------------------------|---|---|---|---|---|-------|-----------------|-----------------------------|-----|
|                          |   |                         |   |   |   |   | TENS  | UNITS | TYPE OF TRAFFIC | SPECIAL ANNOUNCEMENT TRUNKS |     |
|                          |   |                         |   |   |   |   |   |       |                 | EA1                         | EA2 |
| 1                        | TO RESTORE ALL ACTIVE CONTROLS TO THE INACTIVE STATUS   | CLR                     |   |   |   |   |   |       |                 |                             |     |
| 2                        | TO PREVENT TRAFFIC FROM BEING OFFERED TO A PARTICULAR GROUP OF TRUNKS   | CANT                    | SET UP INDEX OF AFFECTED TRUNK GROUP ON A, B, C, & D SWITCHES | 25<br>OR<br>50<br>OR<br>75<br>OR<br>100 |   |   |   |       | AR/DAR          | EA1 / EA2 OR NONE           |     |
| 3                        | TO PREVENT TRAFFIC OVERFLOWING A PARTICULAR TRUNK GROUP FROM ADVANCING TO ITS NEXT IN-CHAIN ALTERNATE ROUTE   | CANF                    |   |   |   |   |   |       |                 |                             |     |
| 4                        | TO SKIP TRAFFIC OFFERED TO A PARTICULAR TRUNK GROUP TO ITS NEXT IN-CHAIN ALTERNATE ROUTE  | SKP                     |   |   |   |   |   |       |                 |                             |     |
| 5                        | TO BLOCK TRAFFIC TO A PARTICULAR 3-DIGIT CODE   | CB3                     | SET UP CODE TO BE BLOCKED ON A, B, & C SWITCHES               |   | NAC<br>OR<br>AC<br>OR<br>TAS1<br>OR<br>TAS2<br>OR<br>TAS3 |   |   |       |                 | EA1 / EA2 OR NONE           |     |
| 6                        | TO BLOCK TRAFFIC TO A PARTICULAR 6-DIGIT CODE   | CB6                     | SET UP CODE TO BE BLOCKED ON A, B, C, D, E, & F SWITCHES      |   |   |   |   |       |                 |                             |     |
| 7                        | TO ACTIVATE A MANUAL PREPROGRAMMED CONTROL  | PP                      |   |   |   |   | SET UP NUMBER OF SELECTED PREPROGRAMMED CONTROL (00-99) |       |                 |                             |     |
| 8                        | TO SWITCH TRAFFIC OVERFLOWING ONE REGIONAL ROUTE TO ANOTHER REGIONAL CENTER. (THIS FEATURE IS ONLY PROVIDED IN REGIONAL CENTER OFFICES) (MANUAL TORC) | MT                      | SET UP INDEX OF TRUNK GROUP THAT TRAFFIC IS TO BE SWITCHED TO | 25<br>OR<br>50<br>OR<br>75<br>OR<br>100 |   | SET TO NUMBER OF REGIONAL CENTER OFFICE THAT TRAFFIC IS TO BE SWITCHED FROM |   |       | AR/DAR          |                             |     |
| 14                       | TO PROVIDE A TELETYPEWRITER PRINTOUT OF ALL ACTIVE CANCEL AND SKIP CONTROLS   | PCS                     |   |   |   |   |   |       |                 |                             |     |
| 15                       | TO PROVIDE A TELETYPEWRITER PRINTOUT OF ALL ACTIVE CODE BLOCK CONTROLS  | PCB                     |   |   |   |   |   |       |                 |                             |     |
| 16                       | TO PROVIDE A TELETYPEWRITER PRINTOUT OF ALL ACTIVE PREPROGRAMMED CONTROLS (PP00-94)   | PRPP                    |   |   |   |   |   |       |                 |                             |     |
| 17                       | TO PROVIDE A TELETYPEWRITER PRINTOUT OF ALL ACTIVE MANUAL TORC CONTROLS. (THIS FEATURE IS ONLY PROVIDED IN REGIONAL CENTER OFFICES)                   | PMT                     |   |   |   |   |   |       |                 |                             |     |

AVAILABLE CONTROLS

| MANUAL | LOCAL PREPROGRAMMED | REMOTE PREPROGRAMMED |
|--------|---------------------|----------------------|
| CB     | CB                  | CB                   |
| CANT   | CANT                | CANT                 |
| CANF   | CANF                | CANF                 |
| SKP    | SKP                 | SKP                  |
| TORC   | RR                  | RR                   |

MAXIMUM NUMBER OF CONTROLS (ACTIVATED SIMULTANEOUSLY)

| TYPE | MANUAL | LOCAL PREPROGRAMMED | REMOTE PREPROGRAMMED |
|------|--------|---------------------|----------------------|
| CB   | 18*    | 140                 | CB2†                 |
| CANT | 20     |                     |                      |
| CANF | 20     |                     |                      |
| SKP  | 20     |                     |                      |
| PR   | 0      |                     |                      |
|      |        |                     | 50                   |

\* Included in 140

† Included in 50 (no more than 2 CBs can be activated on a preprogrammed basis)

TABLE C  
MANUAL CB3

| ETS CONSOLE OPERATION |   |
|-----------------------|---|
| 1.                    | Turn on MS (master switch) key.   |
| 2.                    | Red lamp to the left of MS key lights.  |
| 3.                    | Set DOMAIN switch to desired position (AC or NAC).  |
| 4.                    | Set FUNCTION switch to CB3.   |
| 5.                    | Set PERCENT switch to the desired percent of traffic to be blocked.   |
| 6.                    | Set the CB3 switches to the code to be blocked.   |
| 7.                    | Select appropriate announcement (EA1 or EA2). If EA1 or EA2 is not selected, the NCA announcement is given automatically. |
| 8.                    | Push ST (status) key.   |
| 9.                    | Verify the output message to assure the proper control.   |
| 10.                   | Push EXEC (execute) key. CB lamp lights, indicating control is in the machine.  |
| 11.                   | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.                    |

TABLE D

MANUAL CB6

ETS CONSOLE OPERATION

1. Turn on MS (master switch) key.
2. Red lamp to left of MS key lights.
3. Set DOMAIN switch to NAC or AC.
4. Set FUNCTION switch to CB6.
5. Set PERCENT switch to desired percent of traffic to be blocked.
6. Set the CB6 switches to area code and NNX or NNX and line number to be blocked.
7. Select appropriate announcement (EA1 or EA2). If EA1 or EA2 is not selected, the NCA announcement is given automatically.
8. Push ST (status) key.
9. Verify the output message to assure the proper control.
10. Push EXEC (execute) key. CB lamp lights, indicating control is in the machine.
11. Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.

TABLE E

MANUAL CANF

| ETS CONSOLE OPERATION |   |
|-----------------------|---|
| 1.                    | Turn MS (master switch) key.  |
| 2.                    | Red lamp to left of MS key lights.  |
| 3.                    | Set FUNCTION switch to CANF.  |
| 4.                    | Select appropriate announcement (EA1 or EA2). If EA1 or EA2 is not selected, the NCA announcement is given automatically. |
| 5.                    | Set PERCENT switch to desired percent of traffic to be canceled.  |
| 6.                    | Select type of routing to be affected (DAR or AR).  |
| 7.                    | Set the TRUNK GROUP INDEX switches to the associated TGI number for the trunk group.                                      |
| 8.                    | Push ST (status) key.   |
| 9.                    | Verify the output message to assure the proper control.   |
| 10.                   | Push EXEC (execute) key. CSK lamp lights, indicating there is now a control in the machine.                               |
| 11.                   | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.                    |

TABLE F  
MANUAL CANT

| ETS CONSOLE OPERATION |   |
|-----------------------|---|
| 1.                    | Turn on MS (master switch) key.   |
| 2.                    | Red lamp to the left of MS key lights.  |
| 3.                    | Set FUNCTION switch to CANT.  |
| 4.                    | Select appropriate announcement (EA1 or EA2). If EA1 or EA2 is not selected, the NCA announcement is given automatically. |
| 5.                    | Select type of routing to be affected (DAR or AR).  |
| 6.                    | Set PERCENT switch to desired percent of traffic to be canceled.  |
| 7.                    | Set the four TRUNK GROUP INDEX switches to the TGI number associated with the trunk group.                                |
| 8.                    | Push ST (status) key.   |
| 9.                    | Verify the output message to assure the proper control.   |
| 10.                   | Push EXEC (execute) key. CSK lamp lights, indicating a control is in the machine.   |
| 11.                   | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.                    |

## TABLE G

## MANUAL SKIP

## ETS CONSOLE OPERATION

1. Turn on MS (master switch) key.
2. Red lamp to left of MS key lights.
3. Set FUNCTION switch to SKP (skip).
4. Set PERCENT switch to the percent of traffic to be offered to the next alternate route.
5. Set the four TRUNK GROUP INDEX switches to the associated TGI for the trunk group that is being skipped.
6. Select type of routing to be affected (AR or DAR).
7. Push ST (status) key.
8. Verify the output message to assure the proper control.
9. Push EXEC (execute) key. CSK lamp lights, indicating there is now a control in the machine.
10. Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.

TABLE H  
MANUAL RESTORE

ETS CONSOLE OPERATION

TO RESTORE A CODE BLOCK

1. Set the FUNCTION switch to CB.
2. Set the DOMAIN switch to AC or NAC.
3. Set the switches for codes being blocked.
4. The ST and EXEC keys must be released before the RS key is pushed.
5. Push RS (restore) key.
6. Release the RS key.
7. The indicating lamp is extinguished.

TO RESTORE A SKIP, CANCEL TO, OR CANCEL FROM

1. Set the FUNCTION switch to SKP, CANT, or CANF.
2. Set the switches to TGI number.
3. The ST and EXEC keys must be released before the RS key is pushed.
4. Push RS (restore) key.
5. Release the RS key.
6. The indicating lamp is extinguished.

TO RESTORE A MANUAL TORC

1. Set the FUNCTION switch to MT.
2. Set the RC key.
3. The ST and EXEC keys must be released before the RS key is pushed.
4. Push RS key.
5. Release the RS key.
6. The indicating lamp is extinguished.

TO RESTORE A PREPROGRAM

1. Set the FUNCTION switch to PP.
2. Set the PP keys.
3. The ST and EXEC keys must be released before the RS key is pushed.
4. Push RS key.
5. Release the RS key.
6. The indicating lamp is extinguished.

TABLE I  
MANUAL CLEAR

| EST CONSOLE OPERATION |  |
|-----------------------|--|
| 1.                    | Turn on MS (master switch) key.  |
| 2.                    | Red lamp to the left of MS key lights.   |
| 3.                    | Set FUNCTION switch to CLR (clear).  |
| 4.                    | Push ST (status) key.  |
| 5.                    | Push EXEC (execute) key.   |
| 6.                    | Indicating lamp is extinguished, indicating that all controls have been removed from the machine.      |
| 7.                    | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish. |

**TABLE J**  
**MANUAL TORC**

| <b>ETS CONSOLE OPERATION</b> |   |
|------------------------------|---|
| 1.                           | Turn on MS (master switch) key.   |
| 2.                           | Red lamp to left of MS key lights.  |
| 3.                           | Set FUNCTION switch to MT.  |
| 4.                           | Set RC (regional center) switch number to group to be TORCed.   |
| 5.                           | Set PERCENT switch to desired percent.  |
| 6.                           | Push DAR key.   |
| 7.                           | Set the four TRUNK GROUP INDEX switches to the associated TGI for the VIA trunk group (must be regional center 2W group). |
| 8.                           | Push ST (status) key.   |
| 9.                           | Verify the output message to assure the proper control.   |
| 10.                          | Push EXEC (execute) key. MT lamp lights, indicating that control is in the machine.                                       |
| 11.                          | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.                    |

TABLE K

ACTIVE CONTROL PRINTOUT

| ETS CONSOLE OPERATION |  |
|-----------------------|--|
| 1.                    | Turn on MS (master switch) key.  |
| 2.                    | Red lamp to left of MS key lights.   |
| 3.                    | Set FUNCTION switch to:    PCB        (Print code block <i>or</i><br>PCS        Print cancel or skip <i>or</i><br>PRPP      Print preprogrammed <i>or</i><br>PMT      Print Manual TORC) |
| 4.                    | Push ST (status) key.  |
| 5.                    | TTY prints a list of controls in effect.   |
| 6.                    | Release ST (status) key. ST lamp is extinguished; and in a few seconds, the EXEC lamp will extinguish.   |

TABLE L  
PREPROGRAMS

| ETS CONSOLE OPERATION |  |
|-----------------------|--|
| 1.                    | Turn on MS (master switch) key.  |
| 2.                    | Red lamp to left of MS key lights.   |
| 3.                    | Set FUNCTION switch to PP.   |
| 4.                    | Set PP switches of TENS and UNITS to the associated PP number.   |
| 5.                    | Push ST (status) key.  |
| 6.                    | Teletypewriter prints PP number, date, time, and control to be activated.                              |
| 7.                    | Push EXEC (execute) key. PP lamp lights, indicating there is now a control in the machine.             |
| 8.                    | Release ST (status) key. ST lamp is extinguished, and in a few seconds, the EXEC lamp will extinguish. |

TABLE M

ALARMS

| ALARMS                               | LISTED  |
|--------------------------------------|---|
| 1                                    | Indicates an attempt to install two conflicting controls over the same route.     |
| 2                                    | Indicates an attempt to implement more than 20 controls (cancel or skip).         |
| 4                                    | Indicates an improper TGI number.   |
| 5                                    | Indicates an improper TRI Number.   |
| 6                                    | Indicates an attempt to release a manual skip that is not active.                 |
| 7                                    | Indicates office not arranged for the domain called for.                          |
| 8                                    | Indicates office not arranged for blocking the called-for 6-digit code.           |
| 9                                    | Indicates an attempt to code block a code that is already blocked.                |
| 10                                   | Indicates an attempt has been made to implement more than 18 code block controls. |
| 11                                   | Indicates an attempt to release a manual code block that is not active.           |
| 13                                   | Indicates an attempt to implement more than 20 preprogrammed nonremote reroutes.  |
| <b>APPLY TO REGIONAL OFFICE ONLY</b> |   |
| 14                                   | Indicates an incorrect regional center number.                                    |
| 15                                   | Indicates an incorrect TGI number for manual TORC.                                |
| 18                                   | Indicates an attempt to release manual TORC that is not active.                   |
| <b>NOT LISTED</b>                    |   |
| 3                                    | ETS Machine only — Channel 10.  |
| 12                                   | Not being used at this time.  |
| 16                                   | Not being used at this time.  |
| 17                                   | Not being used at this time.  |

TABLE N

NETWORK CONTROL TTY INPUT MESSAGES (CHANNEL 2)

| CONTROLS                                | INPUT MESSAGE  |  |   |   |  |  |
|---|--|--|---|---|--|--|
| CANT<br>CANF<br>SKP                     | NET - 01 - SR:a  | MCS:bbb  | PCT:cc  | AD:d  | ANN:ee   | TGI:ffff   |
|   | RS KEY OPR-0<br>ST KEY OPR-1   | FUNCTION SWITCH<br>SETTING<br>CANT - 101<br>CANF - 100<br>SKP - 001    | PERCENT SWITCH<br>SETTING<br>25 - 00<br>50 - 01<br>75 - 10<br>100 - 11          | AR KEY OPR - 0<br>DAR KEY OPR - 1                     | EA1 KEY OPR - 01<br>EA2 KEY OPR - 10<br>EA1 AND EA2 - 00<br>KEYS BOTH NORMAL | A,B,C,D SWITCH<br>SETTINGS<br>(0000-8191)                                      |
| CB3<br>CB6                              | NET - 02-SR:a - CB 3/6 D   | PCT:bb   | ANN:cc  | DOM:d   | CDE:eee  | //fff  |
|   | RS KEY OPR - 0<br>ST KEY OPR - 1   | PERCENT SWITCH<br>SETTING<br>25 - 00<br>50 - 01<br>75 - 10<br>100 - 11 | EA1 KEY OPR - 01<br>EA2 KEY OPR - 10<br>EA1 AND EA2 - 00<br>KEYS BOTH<br>NORMAL | TAS3 - 0<br>TAS2 - 2<br>TAS1 - 3<br>NAC - 4<br>AC - 5 | A, B, C<br>SWITCH<br>SETTINGS<br>(000-999)                                   | D, E, F<br>SWITCH<br>SETTINGS<br>(000-999)<br>SET TO 000<br>FOR CB3<br>CONTROL |
| PP                                      | NET - 03 - SR: a   | PP: bb   |   |   |  |  |
|   | RS KEY OPR - 0<br>ST KEY OPR - 1   | PP TENS AND<br>UNITS SWITCH<br>SETTINGS (00-99)                        |   |   |  |  |
| MT                                      | NET - 05 - SR:   | RC: bb   | PCT: cc   | AD: d   | TGI: eeee  |  |
|   | RS KEY OPR - 0<br>ST KEY OPR - 1   | RC SWITCH<br>SETTING (0-11)  | PERCENT SWITCH<br>SETTING<br>25 - 00<br>50 - 01<br>75 - 10<br>100 - 11          | AR KEY OPR - 0<br>DAR KEY OPR - 1                     | A, B, C, D<br>SWITCH<br>SETTINGS<br>(0000-8191)                              |  |
| PCS<br>PCB<br>PRPP<br>PRMT<br>CLR       | NET - 04 - FTN: aa<br>FUNCTION SWITCH SETTING<br>PCS - 09 PRPP - 08 CLR - 00<br>PCB - 10 PRMT - 11 |  |   |   |  |  |
| TO<br>SIMULATE<br>EXEC KEY<br>OPERATION | NET - 00 EXEC.   |  |   |   |  |  |

TABLE O  
NETWORK CONTROL TTY OUTPUT MESSAGES (CHANNEL 2)

| TYPE OF CONTROL                                     |              | OUTPUT MESSAGE  |
|---|--------------|---|
| CLR   | ST KEY OPR   | NET05 CLR RDY MO-DAY HR:MIN   |
|   | EXEC KEY OPR | NET05 CLR EXC MO-DAY HR:MIN   |
| CANT<br>CANF  | ST KEY OPR   | NET01 CANT/CANF TGI (0000-8191) TRI (0000-0999) AR/DAR 25/50/75/100% EA1/EA2/NCA RDY:0  |
|   | EXEC KEY OPR | NET06 CANT/CANF TGI (0000-8191) EXC MO-DAY HR:MIN   |
|   | RS KEY OPR   | NET06 CANT/CANF TGI (0000-8191) RES MO-DAY HR:MIN   |
| SKP   | ST KEY OPR   | NET01 SKP TGI (0000-8191) TRI (0000-0999) AR/DAR 25/50/75 100% RDY:0  |
|   | EXEC KEY OPR | NET06 SKP TGI (0000-8191) EXC MO-DAY HR:MIN   |
|   | RS KEY OPR   | NET06 SKP TGI (0000-8191) RES MO-DAY HR:MIN   |
| CB3<br>CB6  | ST KEY OPR   | NET02 CB30/CB60 NAC/AC/TAS1/TAS2/TAS3 (000-999) (000-999) 25/50/75/100% EA1/EA2/NAC RDY:0   |
|   | EXEC KEY OPR | NET07 CB NAC/AC/TAS1/TAS2/TAS3 (000-999) (000-999) EXC MO-DAY HR:MIN  |
|   | RS KEY OPR   | NET07 CB NAC/AC/TAS1/TAS2/TAS3 (000-999) (000-999) RES MO-DAY HR:MIN  |
| PP  | ST KEY OPR   | NET08 PP: (00-99) VFY MO-DAY HR:MIN   |
|   |              | (TYPE OF CONTROL & ASSOC INFOR.) — SINGLE CONTROL FOR PP (00-89). A MAX OF 10 CONTROLS EACH PP (90-99) — IF NO CONT. ASSIGNED LINE IS DELETED |
|   |              | NET04 EOC   |
|   | EXEC KEY OPR | NET08 PP: (00-99) EXC MO-DAY HR:MIN   |
|   | RS KEY OPR   | NET08 PP: (00-99) RES MO-DAY HR:MIN   |
| MT  | ST KEY OPR   | NET10 RC: (0-11) TGI:(0000-8191) AR/DAR 25/50/75/100% VIA TGI: (0000-8191) RPI (0000-0999) RDY:0  |
|   | EXEC KEY OPR | NET11 RC: (0-11) VIA TGI: (0000-8191) EXC MO-DAY HR:MIN   |
|   | RS KEY OPR   | NET11 RC: (0-11) VIA TGI: (0000-8191) RES MO-DAY HR:MIN   |
| PCS<br>PCB<br>PRPP<br>PMT                           | ST KEY OPR   | NET09 ACT NETC PO   |
|   |              | (ALL ACTIVE CANCEL AND SKIP CONTROL FOR PCS) CODE BLOCKS FOR PCB, ETC - IF NO CONTROLS OF PARTICULAR TYPE ACTIVE, LINE IS DELETED             |
|   |              | END PO  |
|   |              | MO-DAY HR MIN-SEC   |
|   |              | OUTPUT MESSAGE ON CHANNEL 10 TELETYPEWRITER   |
| NCTTY KEY OPR<br>AT MISC. CKT TOL<br>RECORDER FRAME |              | NET09 ACT NETC PO   |
|   |              | [ALL ACTIVE CONTROLS EXCEPT REMOTE CONTROL PREPROGRAMMED CONTROLS PP (95-99)]   |
|   |              | END PO  |
|   |              | MO-DAY HR. MIN-SEC  |

Note 1: IF RDY:0 IS REPLACED BY ALM(1-18), SEE OUTPUT MESSAGE MANUAL, OM-68000-01.

Note 2: IF RES IS REPLACED BY ERR, CONTROL CANNOT BE RELEASED FOR SOME REASON.