Critical Release Notice

Publication number: 297-2291-300
Publication release: Standard 07.04

The content of this customer NTP supports the SN06 (DMS) and ISN06 (TDM) software releases.

Bookmarks used in this NTP highlight the changes between the baseline NTP and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the baseline NTP remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to new or modified content for the baseline NTP that is valid through the current release.

Red: Applies to new or modified content for NA017/ISN04 (TDM) that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS)/ISN05 (TDM) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS)/ISN06 (TDM) that is valid through the current release.

Attention!
Adobe® Acrobat® Reader™ 5.0 is required to view bookmarks in color.

Publication History

March 2004

Standard release 07.04 for software release SN06 (DMS) and ISN06 (TDM).

Change of phone number from 1-800-684-2273 to 1-877-662-5669, Option 4 + 1.

297-2291-300

DMS-100 Family

TOPS MPX

Operator Guide

IBMA001 and up Standard 07.03 June 1995

DMS-100 Family

TOPS MPX

Operator Guide

Publication number: 297-2291-300
Product release: IBMA001 and up
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Publication history

June 1995

IBMA001 Standard 07.03 release adds screen messages related to processing sent-paid hotel DA calls through an external real-time rating system

January 1995

IBMA001 Standard 07.02 release

November 1994

IBMA001 Preliminary 07.01 release for VO adds information to reflect DMSE software changes.

November 1993

BCS35 Standard 06.02

- added information on Automated Directory Assistance Service (ADAS)
- added note on logging on to a position served by QMS which has a call on permanent hold

March 1993

BCS35 Standard 06.01

- added override room number checks information
- added note on override room number checks feature for TOPS MPX/AOSS

July 1992

BCS34 Standard 05.01

- added Queue Management System (QMS) information
- added information on directory assistance automatic position release parameter
- added information on new function of Ca Call key
- added note on making DA forward number calling function an option

October 1991

BCS33 Standard 04.01

- added information about the OPP base TOPS changes feature.

- added information about calling number displays, Split/Join key functionality, and Requested Number keying sequences.

March 1991

BCS32 Standard 03.01 updated the guide to add BCS32 features

BCS31 Standard 02.02 reissue of BCS31 guide to add PARS feature

September 1990

BCS31 Standard 02.01 initial release of BCS31 guide

Contents

About this document

When to use this document

This guide provides an overview of the TOPS MPX. It includes descriptions of product hardware, software functionality, and the enhancements and applications using the TOPS MPX system.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the *next* software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the *same* software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

This document is written for all DMS-100 Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document and how documentation for your product is organized, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

References in this document

The following documents are referred to in this document:

- *IBM Programmable Operator Subsystem User Guide,* SC28-8168
- *IBM DAS TOPS MPX User Guide, Program Supplement,* SC23-4014
- *DMS-100 Family Guide to Northern Telecom Publications,* 297-1001-001
- *TOPS MPX Force Management Guide,* 297-2291-310

What precautionary messages mean

The types of precautionary messages used in NT documents include danger, warning, and caution messages. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

DANGER Possibility of personal injury

DANGER
Risk of electrocution
Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING Possibility of equipment damage

WARNING
Damage to the backplane connector pins
Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION Possibility of service interruption or degradation

CAUTION
Possible loss of service
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 3 Busy CTRL 0: Command request has been submitted.
FP 3 Busy CTRL 0: Command passed.
```

The following excerpt from a procedure shows the command syntax used in this document:

1 Manually busy the CTRL on the inactive plane by typing

>BSY CTRL ctrl_no
and pressing the Enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response:

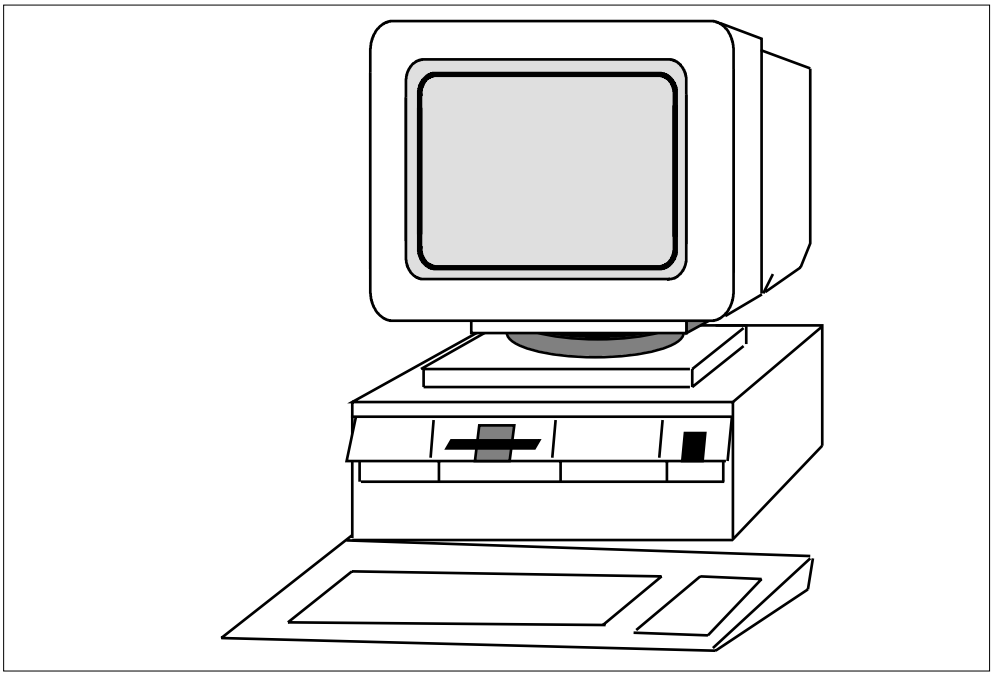
```
FP 3 Busy CTRL 0: Command request has been submitted.
FP 3 Busy CTRL 0: Command passed.
```

The TOPS MPX position description

The TOPS MPX position

The TOPS MPX position is a custom IBM Personal System/2 based operator service workstation (figure 1-1). It combines existing IBM hardware and software products along with custom hardware and software jointly developed by IBM and NT.

Figure 1-1
The TOPS MPX position



The TOPS MPX operator position screen

The TOPS MPX operator position screen is made up of 25 horizontal lines, and each line contains 80 characters. The screen is divided into 12 major areas for call handling. Table 1-1 identifies the names of each of these 12 areas, their position on the screen, and their size in characters. Refer to figure 1-2 for an illustration of the layout of the TOPS MPX screen.

Note: The positions of the fields on the TOPS MPX operator position screen shown in this document reflect the default positions. The operating company can customize the screen layout to suit their needs. To change the position of a field on the screen, refer to the *IBM Programmable Operator Subsystem User Guide.*

Table 1-1xxx
The twelve fields of the TOPS MPX screen

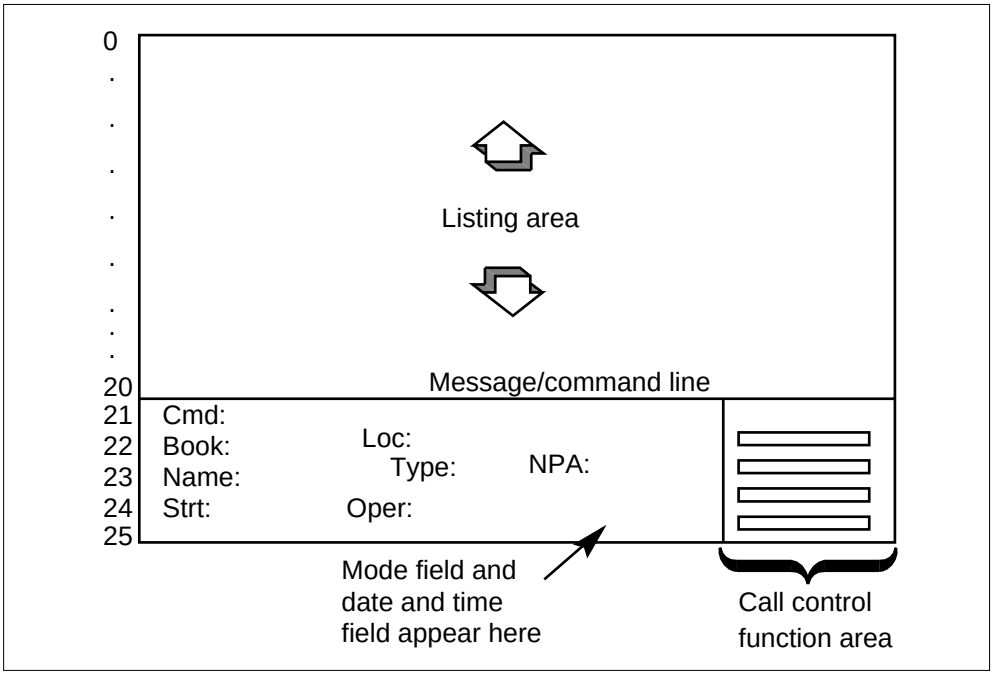
Field name	Field size in characters	Field description
Listing area	1680	displays the DA and intercept database search results
Message/command line	75	displays messages from the database and allows entry of commands when the **Cmd** key is pressed (for example, command to enter the training mode)
Book field	19	displays the name of the current database book in use (think of it as a telephone directory)
Loc field (locality)	27	displays the name of the locality that is currently being searched
Strt field (street)	15	allows the operator to enter a street name to target the database search
Name field	29	displays the name of the person, department, business, or other title for which the customer requests information. The operator must enter something in this field to initiate a database search (the only exception is on emergency number searches).

-continued-

Table 1-1xxx
The twelve fields of the TOPS MPX screen (continued)

Field name	Field size in characters	Field description
Type field	3	displays information about the type of search currently in effect. The types of searches include the following: BUS for business searches GOV for government searches EMR for emergency searches NT for intercept searches CNA for customer name and address AUX for search of a special file
NPA field (numbering plan area)	6	displays the current NPA for the book being searched or for the default book
Oper field (operator name)	16	displays the name of the operator currently logged on.
Mode field (mode)	16	usually blank except in cases where the operator is in training mode. Then, a message indicating that the operator is in training mode appears. Unlike the Name, Loc, Type, NPA, Oper, and Strt fields, a field label mode does not appear on the screen.
Date and time field	12	displays the date.
Call control function area	64	divided into four groups, this area displays the call processing information. This document discusses all the messages that appear in these groups. The groups are referred to as group 1 through group 4.
-end-		

Figure 1-2xxx
Illustration of areas of TOPS MPX screen



The TOPS MPX operator position keyboard

The TOPS MPX operator position keyboard is divided into five areas. These five areas are as follows:

- standard keyboard (QWERTY) keys
- common finding name and numbering plan area (CFN/NPA) keys
- frequently referenced locality (FRL) keys
- database search keys
- call processing keys

Figures 1-3 and 1-4 provide illustrations of the TOPS MPX operator position keyboard.

Figure 1-3xxx
TOPS MPX operator position keyboard

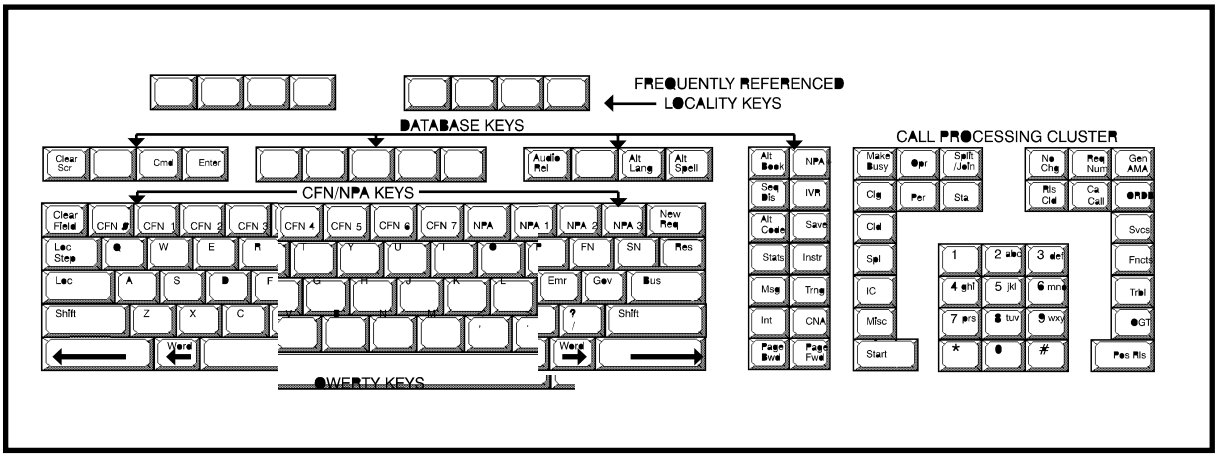


Figure 1-4xxx
The QWERTY and CFN/NPA keys

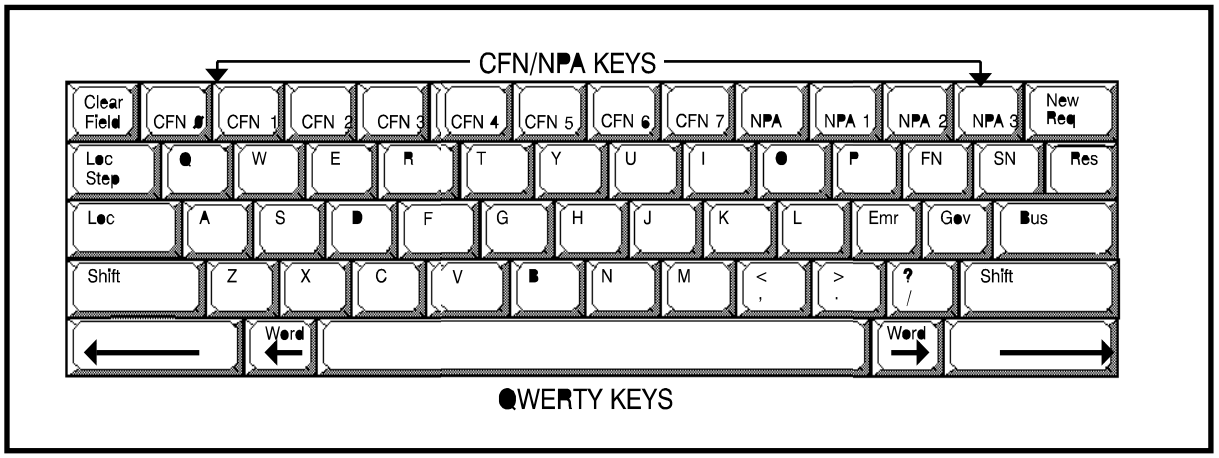


Table 1-2 lists and describes the functions of the QWERTY and CFN/NPA keys.

Table 1-2xxx
Description of QWERTY and CFN/NPA keys

Key	Description
Clear Field	clears the field in which the cursor is currently displayed
New Req	used when processing multiple requests within a single call. When pressed, it clears the listing area, NAME, STRT, and TYPE fields.

-continued-

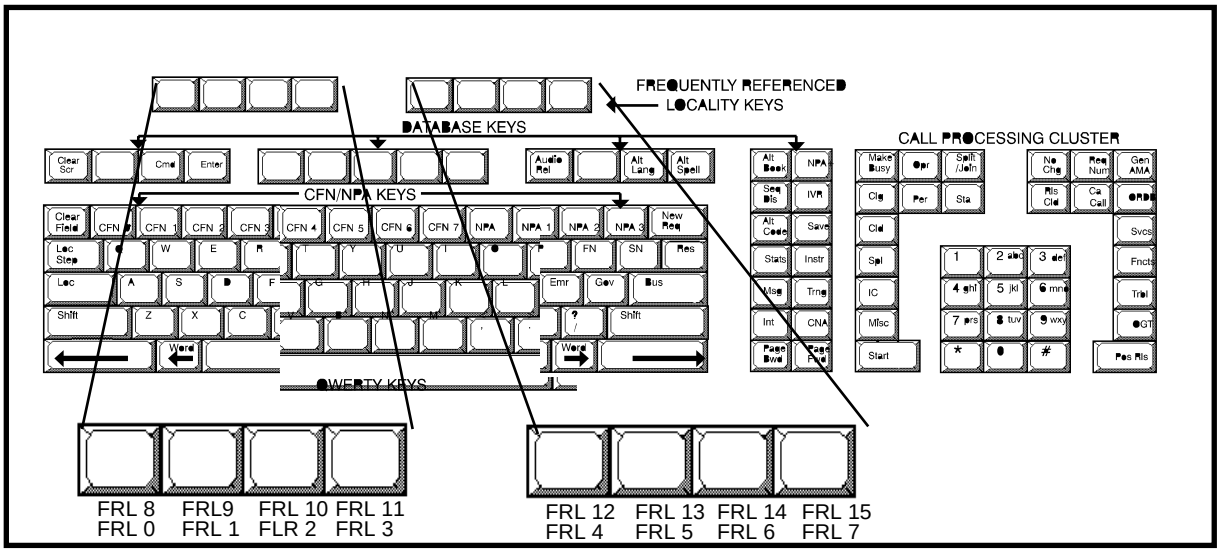
Table 1-2xxx
Description of QWERTY and CFN/NPA keys (continued)

Key	Description
Loc Step	used when the default locality is not the requested locality and the FRL keys do not match the requested locality. This key allows the operator to page through the localities until the correct one displays on the screen.
FN	positions cursor in the NAME field. On call arrival, cursor is already be positioned in the NAME field.
SN	positions the cursor in the STRT field. If the item being searched for is very common, identifying a street targets the search.
Res	instructs the database to conduct a residential search. When this key is pressed, RES appears in the TYPE field.
Loc	clears the LOC field and places the cursor in the first position of the LOC field. This key works in conjunction with the **Loc Step** key. After pressing the **Loc** key to position cursor in LOC field, the operator enters the locality information search criteria and presses the **Loc Step** key to find the required locality.
A through Z	standard alphabetical letters used to enter search information
Emr	pressed to conduct an emergency search. When this key is pressed, EMR appears in the TYPE field.
Gov	pressed to conduct government searches. When this key is pressed, GOV appears in the TYPE field.
Bus	pressed to conduct business searches. When this key is pressed, BUS appears in the TYPE field.
Shift	pressed to access the top row of the FRL keys
<--------	moves the cursor one character to the left
Word <--	moves the cursor one word to the right
-------->	moves the cursor one character to the right
Word -->	moves the cursor one word to the right
Space bar	enters a space or erases input in a field
-end-	

The frequently referenced locality keys

This section describes the frequently referenced locality (FRL) keys on the TOPS MPX operator position keyboard (see figure 1-5).

Figure 1-5
Frequently referenced locality (FRL) keys



The frequently referenced locality (FRL) keys are the eight large unlabeled keys at the top left side of the keyboard. Using these keys the operator can change the locality to be searched by pressing one key rather than typing in the entire locality name. Sixteen locations can be chosen as frequently referenced localities. FRL 0 through FRL 7 are called the primary localities and can be accessed by pressing the appropriate FRL key. This action chooses the locality that corresponds to the appropriate FRL key pressed. FRL 8 through FRL 15 are the shifted localities. Press one of these keys while pressing the **Shift** key to change the default locality to the shifted locality.

The database keys

Following is an illustration (figure 1-6) of the database keys with an explanation of each key function:

Figure 1-6
Database keys

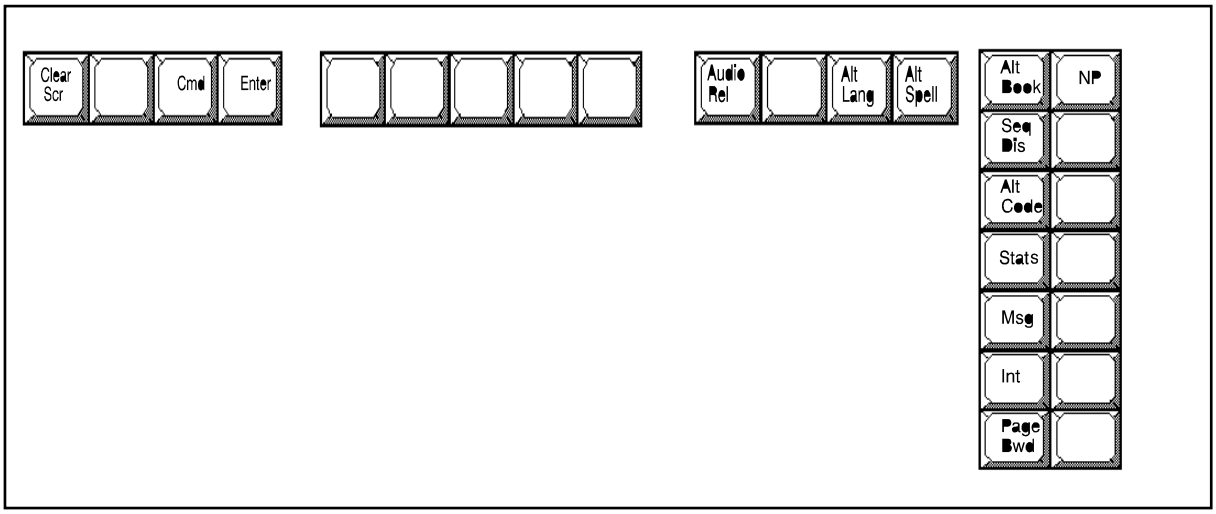


Table 1-3xxx
Description of the database keys

Key	Description
Clear Scr	clears the NAME and STRT fields, and the listing area
Cmd	positions the cursor at the beginning of the message/command line and allows entry of commands. These commands are defined by IBM and have access privileges associated with them. For complete details on these commands, refer to the appropriate IBM documentation.
Enter	pressed to end the entry of a message on the message/command line
Audio Rel	pressed to send the call to recorded announcement for the requested number. Pressing this key causes the call to be released from the position thereby allowing new calls to be attached to the position.
Alt Lang	pressed to select an alternate language for the audio announcement. Also, this key must be pressed prior to **Audio Rel.**
Alt Spell	returns a list of alternate spellings for the last name in the NAME field
Alt Book	changes the book in which searches are done

-continued-

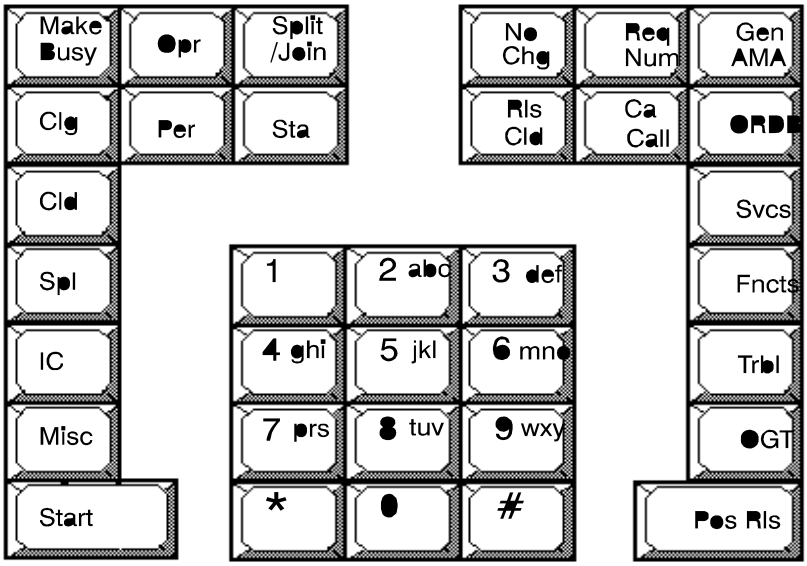
Table 1-3xxx
Description of the database keys (continued)

Key	Description
NPA+	allows the operator to position the cursor in the NPA field to enter an NPA that is not defined on one of the twelve CFN/NPA keys
Seq Dis	overrides the default values in cases of emergency or file verification
IVR	allows the operator to recite an intercept number rather than sending the call to an audio announcement
Alt Code	pressing this key and any other key redefines the function of the key pressed
Save	allows the current screen display to be saved in a file
Stats	displays information about the operator work statistics
Instr	displays help information created by the supervisor
Msg	displays information from the supervisor
Trng	allows the operator to access a training database to learn search skills
Int	initiates an intercept database search and releases the call to an audio announcement automatically
CNA	initiates a search on a given telephone number to locate name and address information
Page Fwd	allows the operator to page forward in a screen of listings returned by the database as a result of a search
Page Bwd	allows the operator to page backwards in a screen of listings returned by the database as a result of a search
End	

The call processing keys

The call processing keys are used to enter numbers, report trouble, connect a subscriber to the service assistant (SA), or process calls. Not all of the call processing keys are functional with the initial release of TOPS MPX.

Figure 1-7xxx
Call processing keys



The shaded keys indicate functions that are not operational in the initial release of TOPS MPX.

Table 1-4xxx
Description of the call processing keys

Key	Description
Make Busy	makes the position unavailable to accept calls. Toggle action makes the position available to accept calls
Opr	pressed with the number keys and the **Start** key to sign on, request assistance, and transfer a call to another operator in the office
Split/Join	enables the operator to cutoff and restore the subscriber voice connection so that the operator can speak with the service assistant/forward party without the subscriber overhearing the conversation. It is not necessary to have a forward party connected to operate the **Split/Join** key.
No Chg	marks a call as being free of charge
Req Num	pressed with the number keys and the **Start** key to enter the requested number for billing. This key can also be used to enter a Zenith number as the requested number
Gen AMA	pressed to generate an AMA billing record

-continued-

Table 1-4xxx
Description of the call processing keys (continued)

Key	Description
Clg	pressed with the number keys and the **Start** key to enter the calling number for calls that arrive ONI or ANIF
Per	not available with initial release of TOPS MPX
Sta	not available with initial release of TOPS MPX
Rls Cld	pressed to release the called or forward party
Ca Call	pressed in conjunction with the **Pos Rls** key to release a call when the calling party has not hung up. A second operation of this key resets the call to AMA unspecified, the status associated with a new call.
ORDB	not available with initial release of TOPS MPX
Cld	pressed in conjunction with the number keys and the **Start** key to enter a called number and connect to that forward party
Svcs	not available with initial release of TOPS MPX
Spl	not available with initial release of TOPS MPX
0 - 9	pressed for digit entry
Fncts	not available with initial release of TOPS MPX
IC	not available with initial release of TOPS MPX
Trbl	pressed in conjunction with the number keys and the **Start** key to enter trouble codes
Misc	not available with initial release of TOPS MPX
OGT	pressed in conjunction with one- or two-digit codes and the **Start** key to connect to a forward party
Start	pressed with other keys to terminate the entry of information
* and #	not available with initial release of TOPS MPX
Pos Rls	pressed to release a call from the position
End	

Open position protocol

Open position protocol (OPP) is used to communicate between the DMS and an operator position. This protocol is a flexible means of transferring information.

Position sanity timer

With OPP in BCS33, a position sanity timer is added to take down calls attached to an unoccupied position.

During operator call processing, situations can arise that result in the calling or called parties remaining attached to an unoccupied position. One situation could be if you log out with a call at the position without releasing the call. When this occurs, a display appears on the In-charge position for your team. Without operator involvement, the calling and called parties eventually go on-hook in an attempt to disconnect.

This feature introduces a position sanity timer that is activated when the DMS receives indication that all attached parties are on-hook. If this timer expires, the DMS switch automatically takes the call down.

Note: The duration of the position sanity timer is datafillable in the new TOPS parameter table, TOPSPARM.

Call details

If you notice unusual screen displays or no response to your keying actions, press **Call Details** in an attempt to reestablish the call and refresh the screen. The **Call Details** key updates the screen as new calls come in and as calls are being processed.

Note: Service assistants/In-charge (SA/IC) operators who do not have a **Call Details** key should press **Start**.

Operator action following timer initiation

If all attached parties have gone on-hook, the timer is initiated. Every subsequent operator keystroke clears the timer and then restarts it.

Subscriber behavior following call abandon

If an operator abandons a call with a subscriber attached, the subscriber receives no indication that this procedure has taken place. The subscriber may flash the switchhook to try to recover dial tone. Eventually, the subscriber goes on-hook, starting the timer and taking the call down.

Subscriber off-hook

Once all parties have indicated on-hook to the DMS switch, the position sanity timer is initiated. If an attached party goes off-hook, the timer clears.

Note: No call is taken down if there is an off-hook subscriber attached.

Parties on hold

If the calling and called parties are attached to a loop that you hold, and the attached parties go on-hook, the timer is initiated. You receive an indication when the subscriber held on a loop goes on-hook. If you do not reaccess the held call before the timer expires, the call is taken down.

Call take down

When the timer expires, the timeout is handled as follows. The call is taken down as if cancelled by the operator. If the operator is still logged in to the position, the position is made busy. If the operator has initiated logout, logout is completed. If the operator has more than one call attached, these transitions are not performed until the final call is taken down.

TOPS MPX screen messages and descriptions

This chapter describes the messages that appear on the TOPS MPX operator position screen. The messages have been broken down into two main categories:

- those displayed by the directory assistance system (DAS)
- those displayed by the digital multiplex system (DMS).

This document deals mainly with the messages displayed by the DMS. For complete details on the messages displayed by the DAS, refer to the IBM document, *IBM Programmable Operator Subsystem User Guide.*

The DMS switch displays information in the four groups in the call control function area. See figure 2-1 for the position of the call control function area on the TOPS MPX operator position screen.

Messages displayed in the message/command line

The messages displayed in the message/command line of the TOPS MPX operator screen are controlled by the DAS. Table 2-1 lists some of the most common messages displayed. For complete details on the messages that could appear in the message/command line, *IBM Programmable Operator Subsystem User Guide.*

> ***Note:*** The messages that appear on the operator screen can be defined by the operating company if they choose not to use the defaults provided. Refer to the *IBM Programmable Operator Subsystem User Guide,* and the *IBM DAS TOPS MPX User Guide, Program Supplement,* for details on changing the screen messages.

Table 2-1xxx
Common messages appearing in the message/command line

Message	Explanation
WORKING	A database search is in progress.
ADDITIONAL SURNAME DETAIL REQUIRED	On residential searches, the surname entered is very common. Therefore, additional information, such as initial of first name, is required to target the database search.
AUDIO NOT AVAILABLE	The operator attempts to release the call to audio announcement and the audio announcement is not available.
EXPAND OR DELETE: aaa	On a business search, the search criteria is too general. The characters aaa represent the word in question.
AWAITING AUDIO	Displayed after the operator has entered a listing selector and pressed **Audio Rel**.
LINE a SELECTED	Displayed on a recall indicating the line selector chosen for the initial call.
NO LISTINGS FOUND	Indicates that no listings matching the search criteria were found.
NO MATCH ON GIVEN/ STREET NAME	Displayed on a residential search when the database cannot find a match for the given name or street within that locality.
PLEASE REQUEST ADDITIONAL INFORMATION	Indicates that the search criteria is too general. Operator needs to enter more information to target the search.
POSITION READY FOR SIGN ON	Displayed when the position is not in use by an operator (that is, no operator logged on).
RECONNECT, LINE a SELECTED	Displayed when a call is reconnected to the operator for additional servicing. Calls are connected to an operator when the call is released to audio and the subscriber does not hang up after the audio announcement is played. “a” indicates the listing selector that was chosen for the call on initial release from the operator position. Please note that the call does not necessarily reconnect to the same operator that handled it initially.

-continued-

Table 2-1xxx
Common messages appearing in the message/command line (continued)

Message	Explanation
SIGN ON COMPLETE	Displayed after an operator successfully logs on to a position.
TOO MANY LISTINGS	Indicates that too many listings are found matching the search criteria. It is impossible to display them all. This situation results when the search criteria entered is too general. The operator must enter more specific information to target the search.
-end-	

Calling number display

An optional feature to display the calling number at call arrival has been added in BCS33. Operating companies have the option of displaying the calling number of a trunk to TOPS call, for specified TOPS-supported trunk groups, at the operator position upon call arrival.

Note: This feature only applies to calls coming in on the corresponding trunk groups in table TOPSTOPT.

If a call arrives to TOPS over a trunk that is datafilled in table TOPSTOPT, and the calling number has been received, it is displayed at the operator position upon call arrival.

Note 1: This feature does not apply to line to TOPS calls, or to intercept calls.

Note 2: This feature only adds the option of having the calling number displayed; it does not prevent the calling number from being displayed if it is turned off (field DISPCLG set to N).

Messages displayed in the call control function area

The call control function area is divided into four groups. Each group is 16 characters long, and call control information is displayed in these groups (see figure 2-1). The following sections provide illustrations of what appears in each group followed by a brief explanation. Any displays enclosed in <> indicate that the display appears in flashing mode. In addition, lowercase letters are used as place holders for numbers that are actually displayed. Certain displays overwrite one another. In these cases, only one display is shown in the illustration; however, the explanation lists all displays and specify their relative position in the group.

Figure 2-1
Illustration of groups in call control function area

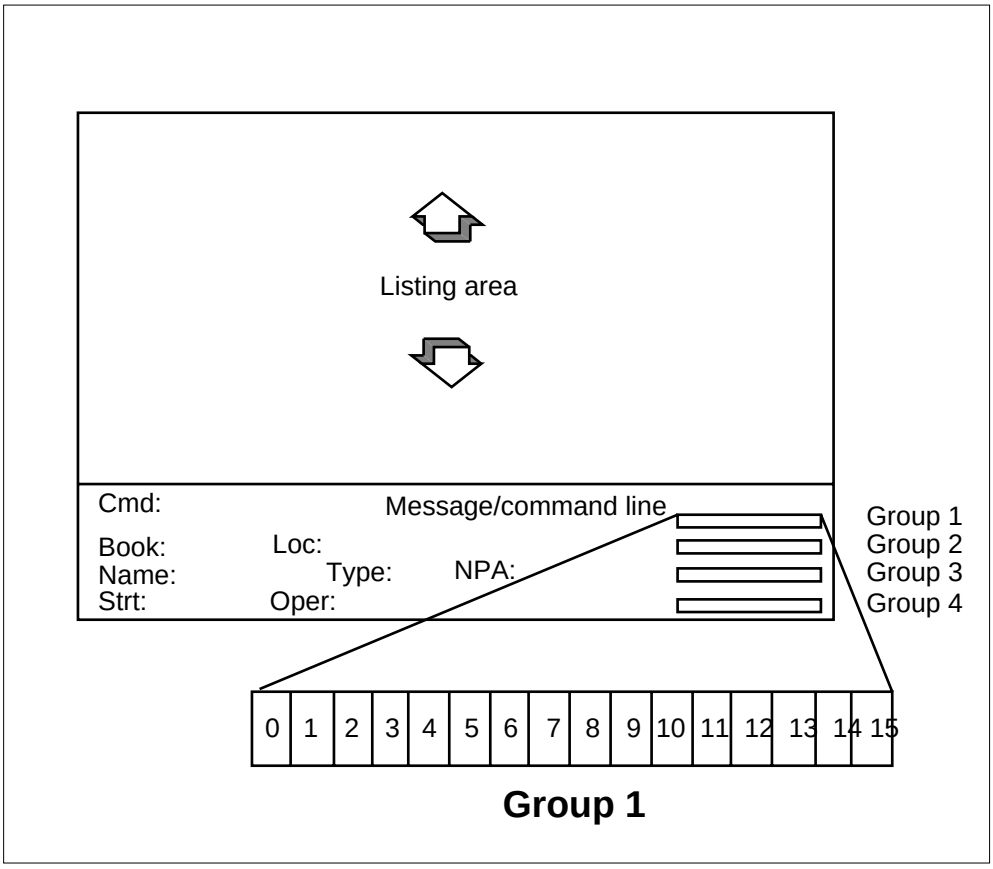


Figure 2-2
Call control messages displayed in group 1

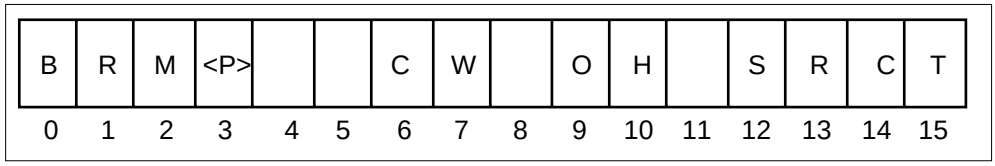


Table 2-2xxx
Explanations of call control messages displayed in group 1

Heading	Heading	Heading
B	0	Position is not available to accept incoming calls. The display is produced after the operator presses the **Make Busy** key.
R	1	The position is waiting for the external real-time rating system to complete a rating query related to a sent-paid hotel DA call. When the query is successful, the R is erased.
<R>	1	A rating query to the external real-time rating system has failed.
M	2	Position is being monitored by a service assistant or in-charge operator. The character M is displayed during monitoring only if the TOPS_DISPLAY_MON parameter is enabled.
<P>	3	The operator is being paged by the service assistant or in-charge operator. The operator goes into the make busy mode by pressing the **Make Busy** key to prevent another call from accessing the position. When the current call is complete, the number of the service assistant or in-charge position that paged the operator is displayed in group 2.
	4	For QMS positions, the calling language confirmation.
	5	For QMS positions, the calling language confirmation.
CW	6-7	Calls are waiting in the calls waiting queue. Calls are placed in the calls waiting queue when there are no operators currently available to handle a new call.

-continued-

Table 2-2xxx
Explanations of call control messages displayed in group 1 (continued)

Heading	Heading	Heading
OH	9-10	The data link between the DMS and the DAS is not available and the call must be handled manually by the operator (that is, the operator must enter any billing information, if necessary, and verbally quote the requested number).
VQ	9-10	There are no automatic recording units (ARU) available and the operator must verbally quote the requested number to the calling party.
CT	14-15	The force manager has placed the operator in a controlled traffic situation. In controlled traffic, only the designated call types are brought to that position.
SR	12-13	The force manager has included the operator in the study register system. Refer to the *TOPS MPX Force Management Guide,* 297-2291-310 for details on the study register system.
		-end-

Figure 2-3xxx
Call control messages displayed in group 2

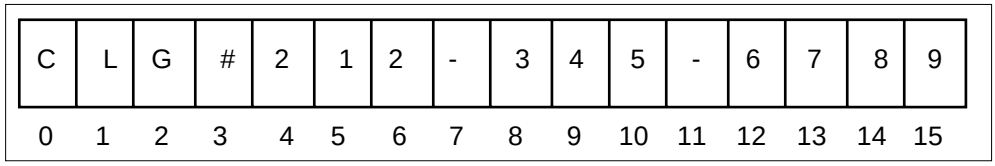


Table 2-3xxx
Explanations of call control messages displayed in group 2

Display	Column number	Explanation
OPR#xxxx	0-7	A valid operator number, xxxx, was keyed in at login and displays the number entered.
OPR#<xxxx>	0-7	An invalid operator number was keyed in at login and displays the number entered in the flashing mode.
OPR#xxxxx	0-8	The first digit shows that a valid operator function was keyed. The last four digits show the operator number and are optional depending on the function keyed.
OPR#<x>	0-4	An invalid operator function was keyed.
POS#xxxx	0-7	The position number of the service assistant or in-charge operator that paged the operator.
G	11	The operator logged on is a general operator and receives calls from the general queue.
X123	12-15	The operator at login learns the queues from which calls are brought to the position. The display X123 means that the operator services all four queues (the general queue from above is included). If the display is X23, the operator services the general queue and queues 2 and 3.
CLG#	0-3	The call is ONI and the operator must enter the calling number.

-continued-

Table 2-3xxx
Explanations of call control messages displayed in group 2 (continued)

Display	Column number	Explanation
<CLG#>	0-3	The call is ANIF and the operator must enter the calling number **Clg** + digits + **Start**.
CLG#xxx-xxx-xxxx	0-15	A valid calling number was entered.
CLG#<xxxxxxxxxxxx>	0-15	An invalid calling number was entered. A number could be invalid because of too many or too few digits entered or because it failed a validity check.
REQ#	0-3	The operator has keyed **Req Num**+ **Start**. and the requested number has not been entered.
<REQ#>	0-3	The requested number has not been entered on a call for which the requested number is required.
REQ#xxx-xxx-xxxx	0-15	A valid requested number has been entered. The number can be seven or ten digits.
REQ#<xxxxxxxxxxxx>	0-15	An invalid requested number has been entered.
CLD#xxx-xxx-xxxx	0-15	A valid forward number has been entered. If the operator keyed **OGT** + digits + **Start**. and the outgoing trunk number corresponds to a billable directory number datafilled in table OGTMPKEY, this billable number is displayed on the operator screen.
CLD#<xxxxxxxxxxxx>	0-15	An invalid forward number was entered. The invalid number is displayed.
CLD#xx	0-9, 0-5	A two-digit OGT code was entered. This code corresponds to a nonbillable number in table OGTMPKEY. The OGT code is displayed on the operator screen, centered within the called number field.
CLD#<xx>	0-9, 0-5	An invalid two-digit OGT code was entered for the called number.
		-end-

Figure 2-4xxx
Call control messages displayed in group 3

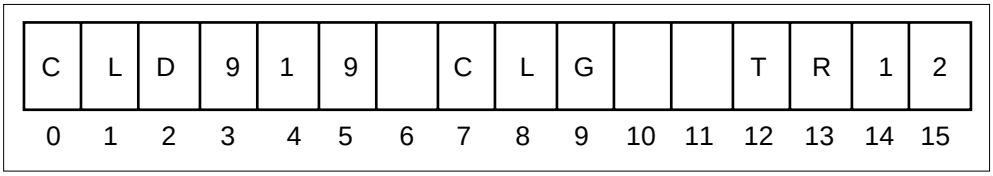


Table 2-4xxx
Explanations of call control messages displayed in group 3

Display	Column number	Explanation
CLG#xxx-xxx-xxxx	0-15	A valid calling number was entered.
RCL	0-2	The call is a recall and has previously been to the operator for service.
CUT	0-2	The call is an intercept cut-through.
SPL	0-2	The call is an intercept special call. Examples of intercept special calls include split referrals and intercept calls that arrive due to ARU failure.
CLD	0-2	A forward connection has been established and the forward party is on-hook. CLD is displayed in the steady mode while the line is ringing. When the called party answers, the CLD display disappears. If the party goes back on-hook, CLD reappears.
xxx	3-5	The serving NPA (SNPA) displays so that the operator can specify the SNPA if required by the directory assistance system (DAS). The SNPA is displayed on calls when the NPA from the incoming number differs from the NPA in table OPRTRANS. If the original number is not present (ONI), the DAS uses the NPA of the incoming trunk.
CLG	7-9	The calling party is on-hook or is disconnected. If the subscriber voice connection is still up, a trouble report should be generated. Otherwise, the operator presses **Pos Rls**.

-continued-

Table 2-4xxx
Explanations of call control messages displayed in group 3 (continued)

Display	Column number	Explanation
<CLG>	7-9	The subscriber is on hold (the operator has pressed the **Split/Join** key). The operator must press **Split/Join** to reestablish the subscriber voice connection.
X	11	For QMS positions, indicates the call is set for call transfer.
	12	For QMS positions, indicates a call type for queuing (CT4Q) change confirmation.
TRxx	12-15	A trouble report was keyed into the system. The two-digit trouble code is displayed.
TR<xx>	12-15	A trouble report failed the system validity check. The two-digit trouble code is displayed flashing.
End		

Figure 2-5xxx
Call control messages displayed in group 4

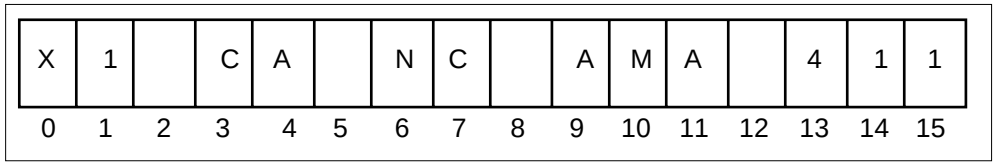


Table 2-5xxx
Explanations of call control messages displayed in group 4

Display	Column number	Explanation
X1	0-1	The operator is receiving calls from the transfer 1 queue.
x2	0-1	The operator is receiving calls from the transfer 2 queue.
x3	0-1	The operator is receiving calls from the transfer 3 queue.
	0-1	For QMS positions, the first two characters of the OPRDISP field in table CT4QNAMS is used for the call type for queuing (CT4Q) display.
CA	3-4	The **Ca Call** key was pressed.
NC	6-7	The subscriber is not be charged for the requested number. This display appears when the **No Chg** key is pressed and on call arrival of nonchargeable calls.
AMA	9-11	Billing information has been forwarded to the automatic message accounting (AMA) tape, displayed approximately two seconds after the operator presses the **Gen AMA** key when handling multiple requests.
<AMA>	9-11	Billing is invalid or billing information is missing. The call cannot be released from the position until all billing information has been entered.

-continued-

Table 2-5xxx
Explanations of call control messages displayed in group 4 (continued)

Display	Column number	Explanation
<ACS>	13-15	A forward connection is being established without a customer call at the position. To establish the forward connection, the operator keys **Opr** + 0 + digits + **Start**. This connection applies for calls to the service assistant only. Forward calls without a calling party attached are blocked.
HOM	13-15	A call from within the home NPA is attached to the position. The call would have been dialed 1+555+1212 or 1+NPA+1212. This display is flashing if the call arrives at the position with severe ANI failure.
FOR	13-15	A call from outside the NPA is attached to the position. The call would have been dialed 1+NPA+555+1212. This display is flashing if the call arrives with severe ANI failure.
555	13-15	On arrival of a 555 call not defined as HOM or FOR, this display is flashing if the call arrives at the position with severe ANI failure.
131	13-15	On arrival of an inward directory assistance (DA) call (a call from another operator located at another TOPS MPX office).
141	13-15	On arrival of an inward 141 directory assistance (DA) call.
411	13-15	On arrival of a local DA call. This display is flashing if the call arrives at the position with severe ANI failure.
INT	13-15	The arrival of an intercept call. This display is flashing if the call arrives at the position with severe ANI failure.
		-end-

Logging on and logging off the position

How to log on to a TOPS MPX operator position

To log on to the TOPS MPX position, complete the steps in the following procedure.

Logging on an MPX operator position

At the position:

1. Seat your headset.
2. Press the **Opr** key.
3. Enter your one- to four-digit operator ID using the number keypad in the call processing cluster.
4. Press the **Start** key.
5. Press the **Make Busy** key (ensures that calls can be received at your position).

After the above steps are completed successfully, the `Sign on Complete` message appears in the message/command line, your name appears in the OPER field, and your operator ID appears in group two of the call control function area. Now you are ready to begin answering calls.

If the Queue Management System (QMS) serves a position that is vacated by an operator while a call is on permanent hold, the next operator's profile may not match the call on hold. In this event, the next operator is unable to log on to the position until the call on hold is completed. Follow local instructions when this condition is encountered.

How to log off of a TOPS MPX operator position

To log off of a TOPS MPX position, complete the steps in the following procedure.

Logging off an MPX operator position

At the position:

1. Press the **Make Busy** key.

2 Complete the current search.

3 Unseat the headset.

Initiating database searches

There are seven types of searches that the operator performs at the TOPS MPX operator position. These types are as follows:

- business
- government
- emergency number
- residential
- intercept
- subscriber name and address
- auxiliary searches.

This chapter provides general information on how to enter search criteria for the above search types and how to conduct the search. For specific details on entering search criteria in the fields of the TOPS MPX operator screen, refer to the IBM document called *IBM Programmable Operator Subsystems User Guide*.

Entering search criteria

- To enter search criteria, the operator must first position the cursor in the appropriate field. Search criteria is entered in one or more of the following fields:
- Loc (locality)
- Name
- Strt (street)

The minimum information required to initiate a database search is the locality and the name. All calls have a default locality, NPA, and book defined. (Book name is a partition of the database. Think of the database as a phone book; as you would have a number of different books for different cities, the database is similarly partitioned for management purposes). However, there are situations when the operator has to change the defaults or provide more information to target the database search.

The following pages describe how to enter or change information in the Loc, Name, and Strt fields.

Entering information in the Loc field

- There are three ways to enter information in the LOC field:
- accepting the default
- using the **FRL** keys
- using the **Loc** and **Loc Step** keys

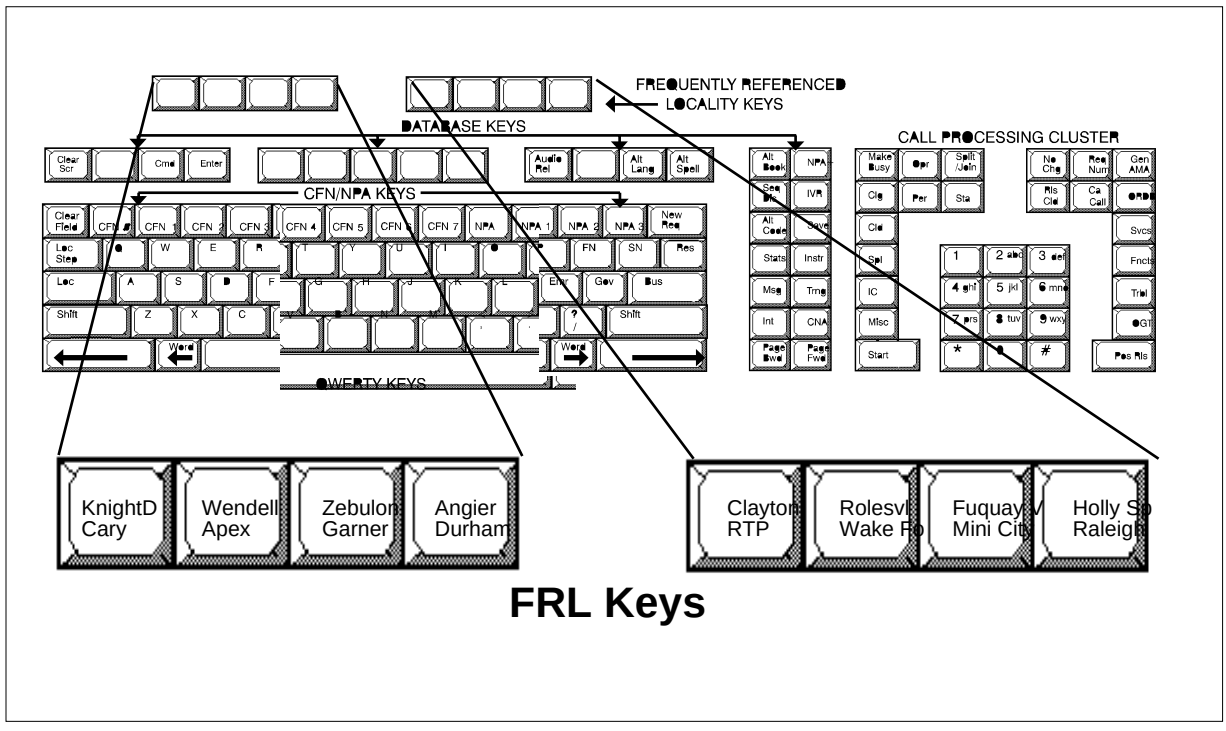
Accepting the default Loc information

A locality is already identified on call arrival. The cursor is positioned in the NAME field. The operator can proceed with entering the name search criteria.

Using the FRL keys to enter the Loc information

A call arrives at the position; a default locality is already identified; however, the locality the subscriber requests differs from the default locality, and the locality the subscriber asks for matches one of the localities defined on the **FRL** keys (see figure 4-1).

Figure 4-1xxx
Illustration of FRL keys



To replace the default locality with the required locality, use the following procedure.

Replacing the default locality with the required locality

At the position:

1 Press the appropriate **FRLL** key if the locality corresponds to one on the bottom row (for example, Cary). The default locality is replaced with the locality corresponding to the **FRL** key pressed.

2 Press **Shift** + appropriate **FRL** key if the required locality is on the top row (for example, Clayton). The default locality is replaced with the locality corresponding to the **FRL** key pressed.

Using the Loc and Loc Step keys to enter Loc information

A call arrives at the position; a default locality is identified; however, the locality the subscriber asks for differs from the default locality and it does not match any of the localities assigned to the **FRL** keys.

To enter the required locality, use the following procedure.

Using the Loc and Loc Step keys to enter Loc information

At the position:

1 Press the **Loc** key to position cursor in Loc field

Note: On call arrival, the cursor defaults to the Name field.

2 Enter the search argument, for example, ZEB for Zebulon. If locality is two words, for example, Holly Springs, enter the initial letter of each word separated by a space, for example, H S.

Note: The method for entering locality information is locally defined by the operating company. Please consult your local practices.

3 Press **Loc Step** key. The database displays the first locality that matches the search criteria.

4 Continue pressing the **Loc Step** key until the required locality is displayed if the first locality displayed is not the required one.

Note: The cursor returns to the Name field on each press of the **Loc Step** key.

Entering information in the Name field

Entering information in the Name field can be a little more difficult than entering information in the Loc field, especially when trying to perform business searches. Therefore, it is necessary for the operator to make the name information as unique as possible. To conduct a business search, a recommended strategy for entering name information is to enter the first three characters of one distinct part of the business name followed by a

period and another three distinct characters followed by a second period. For example, Southeastern Wholesale would be entered as SOU.WHO., Carroll's Florist would be entered as CAR.FLO., and The China Garden would be entered as CHI.GAR.

To conduct a residential search, the recommended strategy is to enter the first four letters of the last name followed by a period and the first letter of the first name. For example, a subscriber asks for the number for Robert Breck; the operator enters BREC.R. as the name search criteria.

Note: Each operating company defines their own method for what to enter to conduct searches. Consult your local practices; the above are merely recommendations.

- On call arrival, the cursor defaults to the Name field. If the cursor is not in the Name field, perform the following steps to reposition the cursor in the Name field:
- Press **FN** key.
- Enter the name as discussed in the previous paragraph.

Entering information in the Strt field

Street information is usually not required to perform database searches. However, there are situations when street information needs to be entered to target a search. An example of a situation such as this is when a business has several locations and a subscriber requests the number for one specific location.

To enter the street name, use the following procedure.

Entering information in the Strt field

At the position:

1 Press the **SN** key to position cursor in the Strt field.

2 Enter the first letter of the street name (or the digit if the street is a number). The system automatically follows your entry with a period.

Note: The method for entering street information is locally defined by the operating company. Please consult your local practices.

Entering telephone number for customer name and address search

Most operating companies do not provide this service. For more information on conducting name and address searches, refer to *IBM Programmable Operator Subsystems User Guide.*

Initiating the database search

Once the search criteria is entered, the next step is to send that information to the database by pressing one of the following keys:

- **Bus**
- **Res**
- **Emr**
- **Gov**
- **Int (IVR)**
- **CNA**

  Note: The auxiliary searches are locally defined. Many operating companies use auxiliary searches in place of emergency searches. This document discusses emergency searches only. Consult with your local practices for information on auxiliary searches.

Pressing one of the above keys not only sends the search criteria to the database and initiates the search, but it also classifies your search as one of six types: business, residential, emergency, government, intercept, or customer name and address. Each type of search is discussed in the following pages.

Performing a business search

After entering the appropriate search criteria, press the **Bus** key.

The message ***WORKING*** appears in the message/command line indicating that a database search is in progress.

Once the database search is complete, the results are displayed in the listing field of the screen, the Type field identifies the type of search that just took place (for example, Type: BUS), and the cursor defaults to the Name field.

The operator knows how many listings that matched the search criteria were found by the message that is displayed at the bottom of the listing area, that state exactly how many listings were found; for example, `0046 listings`. This information is indicated only if there are more listings than can be displayed at one time on the operator screen. In such cases, the operator has to use the **Page Fwd** and **Page Bwd** keys to view all of the listings.

To determine what to do with the information displayed in the listing area of the screen, refer to “Releasing a call to audio announcement”.

What if the requested number is not displayed in initial database response

If the requested number is not found on the initial search of the database, the operator may have to give a not found report to the customer or expand the search.

> ***Note:*** Methods for expanding the database search are locally defined by each operating company. Consult local practices for further details.

Performing a government search

After entering the appropriate search criteria, press the **Gov** key to initiate a government search.

The message `***WORKING***` appears in the message/command line indicating that a database search is in progress.

Once the database search is complete, the results are displayed in the listing area of the screen, the Type field identifies the type of search that just took place (for example, Type: GOV) , and the cursor defaults to the Name field.

The operator knows how many listings that matched the search criteria were found by the message that is displayed at the bottom of the listing area. The message states exactly how many listings were found, for example, `0046 listings`. This information is indicated only if there are more listings than can be displayed at one time on the operator screen. In such cases, the operator has to use the **Page Fwd** and **Page Bwd** keys to view all of the listings.

To determine what to do with the information displayed in the listing area of the screen, refer to “Releasing a call to audio announcement”.

What if the requested number is not displayed in initial database response

If the requested number is not found on the initial search of the database, the operator may have to give a “not found” report to the customer or expand the search.

> ***Note:*** Methods for expanding the database search are locally defined by each operating company. Consult with local practices for further details.

Performing an emergency number search

Unlike the other search types, the name information required on an emergency search is slightly different.

The name information on an emergency search is as follows:

- F for fire

- P for police
- A for ambulance
- R for rescue.

After entering the correct locality (if other than the default), determining the type of emergency service required, and entering the corresponding letter (F, P, A, or R) in the NAME field, press the **Emr** key to initiate the database search.

The message `***WORKING***` appears in the message/command line indicating that a database search is in progress.

Once the search is complete, the results are displayed in the listing area of the screen, the Type field identifies the type of search that just took place (for example, Type: EMR) , and the cursor defaults to the Name field.

On emergency searches, no listing selectors are associated with the listings returned by the database. Because of the nature of the call, emergency calls cannot be released to audio. The operator has to either verbally quote the emergency number to the subscriber or connect the subscriber to the emergency number. "Call handling procedures" provides more details on how to complete an emergency call.

On emergency searches, if the operator does not enter any information in the Name field and presses the **Emr** key, the database returns all emergency number listings for the given locality.

Performing a residential search

After entering the appropriate search criteria, press the **Res** key to initiate a residential search.

The message ***WORKING*** appears in the message/command line indicating that a database search is in progress.

Once the search is complete, the results are displayed in the listing area of the screen, the Type field identifies the type of search that just took place (for example, Type: RES), and the cursor defaults to the Name field.

The operator knows how many listings that matched the search criteria were found by the message that is displayed at the bottom of the listing area. The message states exactly how many listings were found, for example, `0046 listings`. This information is indicated only if there are more listings than can be displayed at one time on the operators screen. In such cases, the operator has to use the **Page Fwd** and **Page Bwd** keys to view all of the listings.

If the name the operator is searching for is a common name, entering a street name targets the search and cut back on the number of listings returned by the database. Refer to "Entering information in the Strt field" for details on entering street information.

To determine what to do with the information displayed in the listing area of the screen, refer to "Releasing a call to audio announcement".

When the requested number is not displayed in initial database response

If the requested number is not found on the initial search of the database, the operator may have to give a "not found" report to the customer or expand the search.

> ***Note:*** Methods for expanding the database search are locally defined by each operating company. Consult local practices for further details.

Performing an intercept search

Unlike directory assistance (government, business, emergency, and residential searches) where the database returns listings for operator selection, the intercept search is requested and the call is automatically released to audio announcement, if possible.

The operator can perform an intercept search while servicing a DA or intercept call by entering the called number in the Name field (see "Processing mixed DA/intercept requests within a single call".

The operator can override the automatic release to audio announcement. Overriding the automatic release to audio indicates to the database that the operator wishes the results of the search to be displayed at the position for verbal quotation of the number.

Press the **IVR** key to override the automatic release to audio on an intercept search.

The listings are returned to the TOPS MPX operator screen and the operator can verbally quote the number to the subscriber by pressing the **IVR** key.

Performing a subscriber name and address search

By using the telephone number, the operator can find the name and address of the subscriber. These calls are billed as regular DA calls. The billing record contains nothing to indicate that it was a CNA call.

To perform a customer name and address search, use the following procedure after entering the telephone number on which name and address are requested.

Consult the *IBM Programmable Operator Subsystem User Guide,* for further details.

Performing a subscriber name and address search

At the position:

1 Press the **CNA** key.

2 Verbally quote the information returned by the database to the subscriber.

Initiating an administrative database search

An administrative search is a search that is performed without a call attached.

To conduct an administrative search, use the following procedure.

Initiating an administrative database search

At the position:

1 Press the **SN** key to position cursor in the Strt field.

2 Press the appropriate search key (for example,**Bus**,,**Res**,**Gov**).

Call handling procdures

What call types can arrive at the position

DA call types

Seven DA call types can arrive at the operator position. They are as follows:

- 411 calls are local DA requests.
- 555-HOM calls are from within the home or serving NPA.
- 555-FOR calls are from outside the serving NPA.
- 555 calls are undifferentiated.
- 131 calls are from other DA operators from another office.
- 141 calls are from other DA operators from another office.
- *** calls are an unidentified DA call type.
- DA-Rcl calls are recalls that result from situations such as when a subscriber is released to audio and remains off-hook after the announcement has been played and responds to a prompt that returns the call to an operator position. On recalls, the search criteria and the selected listing are displayed to the operator when the DA recall is brought to the position.

Intercept call types

Most intercept calls are handled automatically without operator intervention. The end office identifies the called number and delivers the call to the TOPS MPX position. The new number is retrieved from the database and quoted by an automatic announcement system. Intercept calls are routed to an operator only if the above process fails or if the called number is not suitable for automatic quoting.

There are five intercept call types. They are as follows:

- Intercept operator numbers (Int-ONI)
  Intercept ONI calls occur when the end office is not equipped to automatically identify the called number. The operator must determine and enter the called number and then initiate an intercept database search.

- Intercept automatic number identification failure (Int-ANIF)
  Intercept ANIF calls occur when the end office is equipped to automatically identify the called number but fails to do so. The operator must determine and enter the called number and then initiate an intercept database search.
- Intercept cut (Int-cut)
  If on a normal auto-intercept call, the subscriber stays off-hook beyond the specified post announcement time-out, the system routes the call to an operator. The operator determines what additional information the caller requires, retrieves the information from the database if necessary, and verbally quotes the information to the subscriber.
- Intercept recall (Int-rcl)
  These calls are similar to Int-cut calls except that the subscriber has been previously connected to an operator. Int-rcl calls are handled the same way as Int-cut calls.
- Intercept special (Int-spl)
  These calls occur when the results of the database search are not suitable for automatic quoting. For example, when a disconnected telephone has more than one new listing. On call presentation, the operator is presented with the multiple listing and the operator must ask the subscriber which number is desired and quote it verbally.

Processing multiple requests within a single call

If the subscriber requests quotation of several numbers during one DA call, the operator can generate an AMA record for each request processed.

When all billing information is complete for the first number requested, the DA service screen is cleared allowing the operator to proceed with the next number requested. If the required billing information is not completed, the request for DA service is denied. The database again displays the listing data and the operator input in the DA service screen. This process allows the operator to enter the missing billing information.

During multiple DA requests in a single call, the last request can be released to audio announcement. All previous requests must be verbally quoted.

If multiple requests are sent to the database by the operator before a response to the first request is received, the database may update the position with the last query and filter out all other previous requests.

Processing mixed DA/intercept requests within a single call

Calls are presented to the operator as either DA or intercept calls. A DA database or an intercept database session is therefore established on a call-by-call basis between the DMS, the position, and the database. If an intercept search is requested during a DA call or a DA call is requested

during an intercept search, the database honors the search request if possible. However, this type of mixed search is not recommended because of the way billing and statistics are handled on DA searches versus intercept searches. Since operating companies do not currently bill intercept searches on a call-by-call basis, a billable DA request within an intercept call would not be billed (however, note that an AMA record is generated).

IBM statistics for the DA request would not have been reflected in the DA work time, but would be reflected in the intercept work time. The DA request must be verbally quoted since no line selection characters would be displayed. An intercept search within a billable DA call session would be billed as if the search were for a DA call.

Announcing the requested number

Audio announcements quote the requested number. For offices supporting more than one language, an asterisk (*) is placed in the OPER field by the database to indicate that the secondary language is chosen for the audio announcement. The operator can select an alternate language before the request is released to audio announcement. Pressing the **Alt Lang** key causes the use of the alternate language function to be in effect only during the current call. If all billing requirements for the call are satisfied, the call is released from the position; otherwise, the release to audio is denied and the operator must enter the missing information.

Releasing a call to audio announcement

Release to audio is automatically done after the operator enters the search criteria and presses the **Int** key for intercept calls.

On DA calls that require the operator to manually release the call to audio, once the listing selector is found, the operator enters the listing selector associated with the requested number and presses the **audio Rel** key to release the call to audio announcement. No listing selectors are shown for intercept calls.

Optional automatic position release parameter

If your office has the automatic position release parameter set to yes (Y), then a DA call at the TOPS position releases from that position when the calling party goes on-hook, subject to the same conditions that apply to the **Pos Rls** keying action. The call may not automatically release if required billing information is not present, and the same indications are sent to the position as when the **Pos Rls** key is pressed when required information is not present. Examples of missing required information on DA calls are the requested number and the calling number.

Note: If the subscriber goes on-hook, no DA listing has been provided, and the operator is unable to press cancel call plus position release (**CA CALL** + **Pos Rls**) before the call releases, the subscriber may be billed for the call in error depending on operating company DA billing arrangements and operating instructions.

Verbal quote of requested number

The operator must verbally quote the number to the subscriber if the audio announcement system is unavailable or if the operator is handling a multiple request call. In cases where the audio announcement system is not available, the operator chooses the listing selector (except for intercept), quotes the requested number, and presses **Pos Rls** to release the call from the position.

Note: If the requested number is required by the system, the operator must enter it before **Pos Rls.**

Connecting a forward party

Completing the call in the context of directory assistance means connecting the calling party to the requested number. Directory assistance call completion requires toll and assist capabilities that are not supported in the initial release of the TOPS MPX, but numbers can be outpulsed during a DA session.

However, operators can float a call from DA in the case of an emergency, for example. To float a call, the operator presses **CLD** + number + **Start** . Once a forward party is attached, the operator cannot enter the requested number for billing purposes. The keying sequence **Req Num** + digits + **Start** is not accepted by the DMS if a forward party is attached to the operator position. Also, hook status changes are not displayed while a Requested Number appears in the Cld number field.

Operator practice should discourage outpulsing calls from DA unless it is an emergency.

The requested number function also can be used to enter Zenith numbers as the requested number. The operator keys in the requested Zenith number as 800XXXXX, where the X's represent the Zenith number.

Note: A parameter change is enabled to block DA forward number calling (DA_BLOCK_FWD_NUMBER in Table VROPT) and makes the capability to connect to a forward party optional.

Automated intercept call completion

Ordinarily, when a caller dials an intercepted number, he or she gets a recording that announces the new number. The caller then has to hang up and redial the new number. However, with a new optional feature called

automated intercept call completion (AINTCC), calls to intercepted numbers are automatically connected to the new number. If desired, the new number can also be announced to the caller before the connection is made.

The following types of intercept calls can be automatically completed with the presence of the optional AINTCC feature:

- Automatic intercept calls
  - The called number is transmitted to the DMS where the call is automatically processed and completed without the assistance of an operator.
  - Intercept ONI and ANIF calls
  - For intercept calls, the called number is transmitted from the end office (EO) in the automatic number identification (ANI) spill. Therefore, for operator number identification (ONI) or automatic number identification failure (ANIF), the called number is not provided. The call is connected to an operator and the called number is obtained from the subscriber. The operator enters the called number and releases the call to the DAS. The DMS and the DAS exchange messages and complete the call.
  - Intercept special
  - When an intercept special call arrives at a position, it may contain multiple listings. For these calls, the operator would select the appropriate listing and, if possible, release the call to the DAS.

AINTCC impact on billing

Three automatic message accounting (AMA) records are generated when an intercept call is automatically connected to the referral number. Only two of the three are billable. The AMA records are generated as follows.

- An AMA record billable to the calling subscriber is generated in the originating end office (EO) when the call is successfully completed and one of the two parties goes on-hook.
- Two AMA records are generated in the TOPS MP office. The office must record AMA using Expanded Bellcore AMA Format (EBAF), Phase 2.

Automatic DA call completion

This capability is not supported in the initial release of TOPS MPX.

Accessing a second loop while servicing a DA call

An operator cannot access the second loop with initial release of TOPS MPX.

Billing types allowed

The following types of calls are handled by TOPS MPX: station paid and no charge calls. Under station paid, only station class and restricted calls are allowed (no coin calls). Billing is automated where possible. The DMS makes the distinction as to whether a call is billable or not. On calls eligible for billing, the requested number is sent from the database to the DMS for billing purposes. This process allows for billing for most DA calls to be transparent to the operator.

Call handling procedures

- Most DA calls are handled in a similar manner and most intercept calls are handled in a similar manner. The considerations that cause the handling to differ from call to call are as follows:
- Was a listing found for the requested number?
- Can the call be released to audio or must it be verbally quoted?
- Is the call an emergency call?
- Does the call require a trouble report?
- Does the call require connection to the SA?
- Does the call require billing (DMS to DAS connection unavailable)?

The following pages present call scenarios that provide examples of the above situations.

Note 1: Call arrival screens differ slightly depending on what the subscriber dialed to reach the operator; however, this distinction does not make much difference as to what the operator must do to process that call other than possibly changing the locality from the default locality.

Note 2: Call type displays are customer definable in table TOPS. The call type displays shown in this document reflect default settings.

Listing found/release to audio call scenario (typical call)

Calling party (919-859-8400) dials 411 and asks for the number for John Long in Raleigh. Use the following procedure.

Listing found/release to audio call scenario (typical call)

At the position:

1 Call arrives at position, calling number appears in group 2 and Xx (the transfer group) and 411 appear in group 4 (see figure 5-1, part A). The default locality and book are Raleigh; the NPA is 919.

Answer call using locally defined answer phrase.

2 Subscriber requests residential listing for John Long in Raleigh.

Enter Long.J.

3 Press **RES** key to initiate residential search.

4 Database search results are displayed in the listing area of the screen.

Enter listing selector B in Name field.

5 Press **Audio Rel** key.

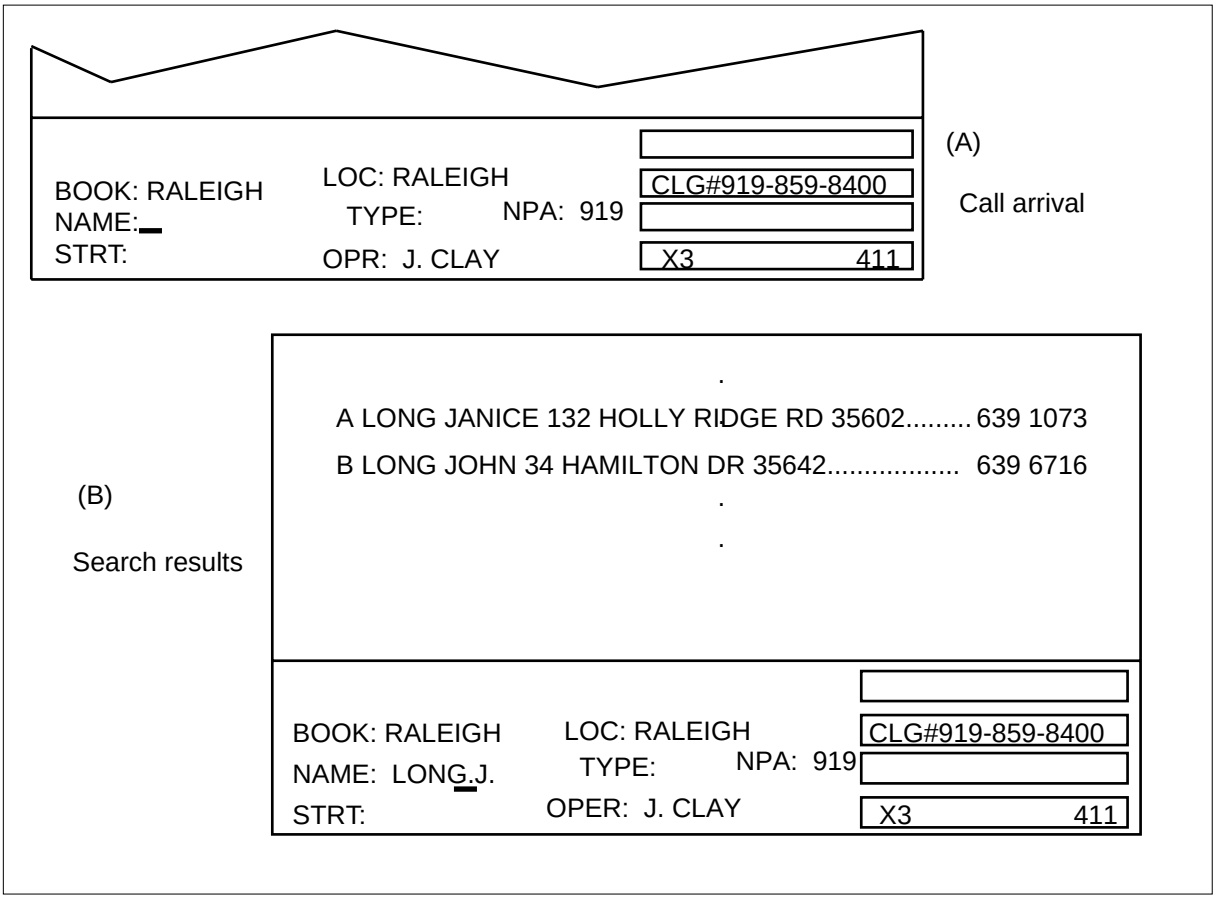
6 Message Awaiting Audio displays in the the message/command line.

7 Call is released to audio announcement and the screen clears.

Note 1: The calling number is displayed only if Calling_Number_Required parameter is set to Y (yes). If this parameter is enabled, the calling number is displayed on billable calls only. If the parameter is enabled and the call is not a billable call, the calling number is not displayed.

Note 2: If the parameter DA_BP_HOTEL_ROOM_REQUIRED is set to Y (yes), then billable DA hotel calls received on TOPS MPX/AOSS positions can not be released to an ARU because a room number is necessary to satisfy AMA requirements. The operator must quote the number to the hotel subscriber. If the parameter DA_BP_HOTEL_ROOM_REQUIRED is set to N (no), then billable DA hotel calls received on TOPS MPX/AOSS positions can be released to an ARU without entering a room number.

Figure 5-1xxx
Illustration of 411 call arrival and residential search screen results



Listing found/verbal quote call scenario

Calling party (919-859-8400) dials 1+ 555 + 1212 and asks for the number for Terry's Tire Center in Cary. Use the following procedure.

Listing found/verbal quote call scenario

At the position:

1 Call arrives at position, calling number appears in group 2, and X3 and HOM appears in group 4 (see figure 5-2, part A). The default locality and book are Raleigh; the NPA is 919.

Answer call using locally defined answer phrase.

2 Subscriber requests business listing for Terry's Tire Center in Cary.

Press appropriate **FRL** key to replace the Raleigh locality with the Cary locality.

3 Enter Ter.Tir.

4 Press **Bus** key to initiate business search.

5 Database results are displayed in the listing area of the screen and the cursor defaults to Name field.

Enter the listing selector A for Terry's Tire Center in Name field.

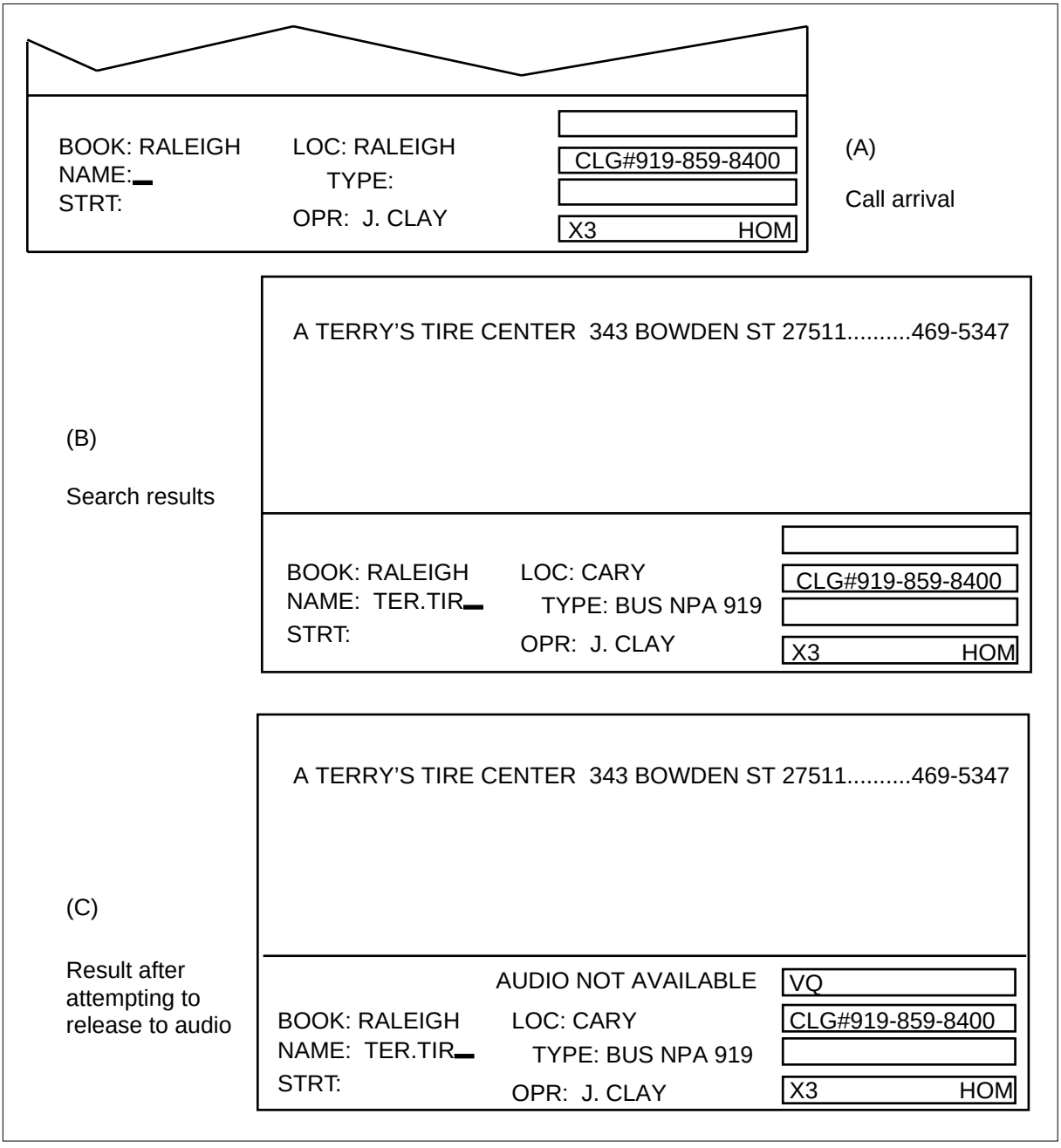
6 Press **Audio Rel** key.

7 Message Audio Not Available appears in message/command line and VQ appears in group 1.

Verbally relay the requested number to the subscriber.

8 Press **Pos Rls** to release the call.

Figure 5-2xxx
Illustration of 555-HOM call requiring verbal quote



Release to audio/555-FOR call arrival with ANI failure scenario

Calling party (619-322-1324) dials 1 + 919 + 555 + 1212 and asks for the number for Mary Smith in Raleigh. Use the following procedure.

Release to audio/555-FOR call arrival with ANI failure scenario

At the position:

1 Call arrives at position, <CLG#> appears in flashing mode in group 2, and X3 and FOR appear in group 4 (see figure 5-3, part A). This indicates that for some reason the system was not able to obtain the calling number. The BOOK and LOC fields indicate default locality as Raleigh. The NPA is 919.

Note: The FOR display appears in flashing mode only if the ANI spill is unrecognizable. If the ANI digit 2 (used to indicate ANI failure) is received, then the FOR display appears in a solid state.

Answer call using locally defined answer phrase and obtaining calling number.

2 Enter Clg + 6193221324 + **Start.**

3 Subscriber requests residential listing for Mary Smith.

Enter Smit.M.

4 Press **Res** key to initiate residential search.

5 Database search results are displayed in the listing area of the screen and cursor defaults to NAME field.

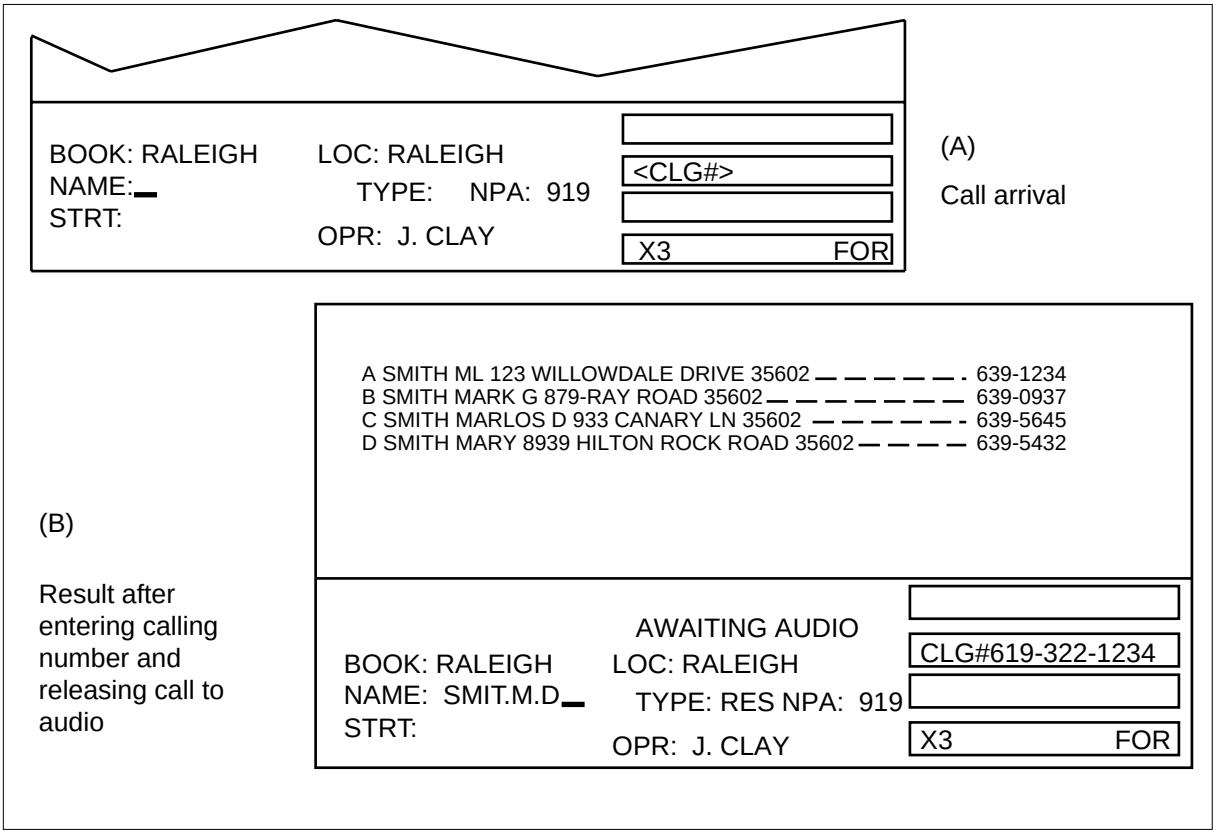
6 Enter listing selector D for Mary Smith in Name field.

7 Press **Audio Rel** key.

8 Message Awaiting Audio is displayed in the message/command line.

Call is released to audio announcement and the screen clears.

Figure 5-3xxx
Illustration of 555-FOR call arrival with ANI failure and search screen results



Emergency 411 call scenario

Calling party is a residence line (919-859-9980) dials 411 and tells operator that there is a fire on 609 Copper Lane in Raleigh. Use the following procedure.

Emergency 411 call scenario

At the position:

1 Call arrives at position, calling number appears in group 2, X3 and 411 appears in group 4 (see figure 5-4, part A).. BOOK and LOC are identified as Raleigh; the NPA is 919.

Answer call using locally defined answer phrase.

2 Subscriber requests fire department.

3 Default locality is correct and cursor is at default position in Name field.

Note: The auxiliary searches are locally defined. Many operating companies use auxiliary searches in place of emergency searches. This document discusses emergency searches only. Consult with your local practices for information on auxiliary searches.

Enter F.

4 Press **Emr** key.

5 Database results are displayed in listing area. Subscriber requests that you connect him to fire department.

Enter **Cld** + number of fire department + **Start** + **No Chg** to connect to fire department.

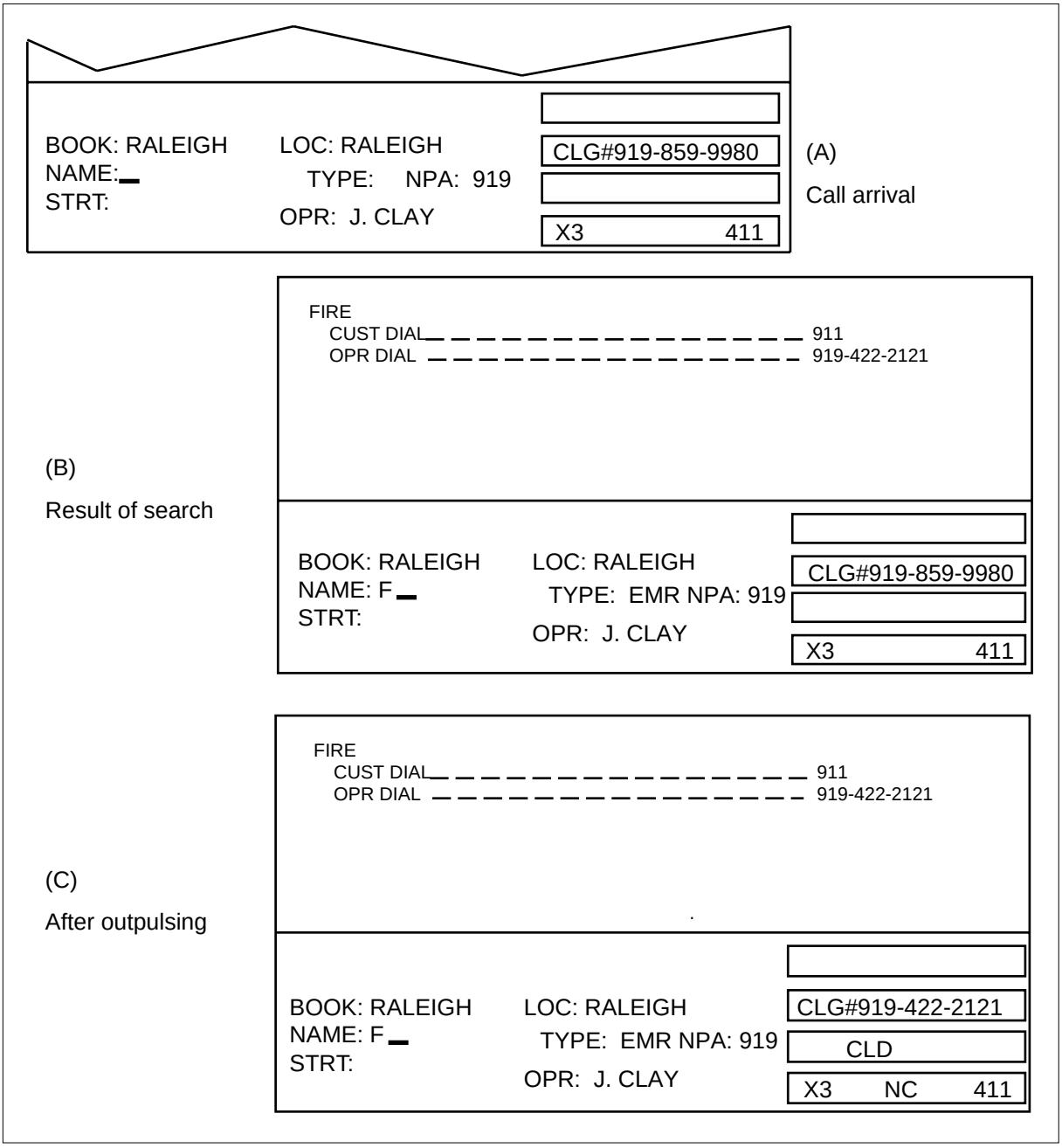
Note: In this call scenario, the **No Chg** key is required as part of the keying sequence only when billing information is presented to the operator position. If the call is from a no charge line, for example, an emergency call from a coin telephone, enter only **Cld** + number of fire department + **Start**.

6 The number of fire department appears in group 2, CLD appears in group 3 indicating that call is outpulsing, and NC appears in group 4 indicating there is no charge for the call.

7 After the customer has reported the emergency to the fire department and conversation has ended, press **Pos Rls** to release the call.

Note: After the customer has reported the emergency to the fire department and conversation has ended, press **Pos Rls** to release the call.

Figure 5-4xxx
Illustration of emergency call screens



Multiple request 555-FOR/generate AMA call scenario

Calling party (802-442-1234) dials 1 + 919 + 555 + 1212 and requests numbers for Jennifer Long and Harold Baker in Sanford. Use the following procedure.

Multiple request 555-FOR/generate AMA call scenario

At the position:

1 Call arrives at position; calling number appears in group 2; X3 and FOR appear in group 4. BOOK and LOC are identified as Raleigh; the NPA is 919 (see figure 5-5, part A).

Answer call using locally defined answer phrase.

2 Subscriber requests numbers for Jennifer Long and Harold Baker, both in Sanford.

Default locality must be changed and since Sanford is not one of our **FRL** keys, use the **Loc** and **Loc Step** keys to obtain required locality.

3 Press **Loc** key.

Note: If first locality displayed is not the required one, continue pressing the **Loc Step** key until the required locality is displayed.

4 SANFORD is displayed in LOC and BOOK fields.

Enter Long.J.

5 Press **Res** key to initiate residential database search.

6 Database results are displayed in the listing area of screen, Type field indicates the type of search that took place (TYPE: RES), and cursor defaults to Name field (see figure 5-5, part B).

Verbally quote the number of Jennifer Long to the subscriber.

Note: The operator cannot release the call to audio on multiple requests unless it is the last number that the subscriber requested. Also, the operator must manually key in the requested number if datafill requires the requested number.

7 Press the **Gen AMA** key to generate a billing record for the first request.

8 Press **New Request** key to clear the listing area, Name, Strt, and Type fields. The cursor is repositioned in the Name field.

9 Enter Baker.H.

10 Press **Res** to initiate the residential database search.

11 Database results are displayed in the listing area of screen, Type field indicates that type of search that took place (TYPE: RES), and cursor defaults to Name field.

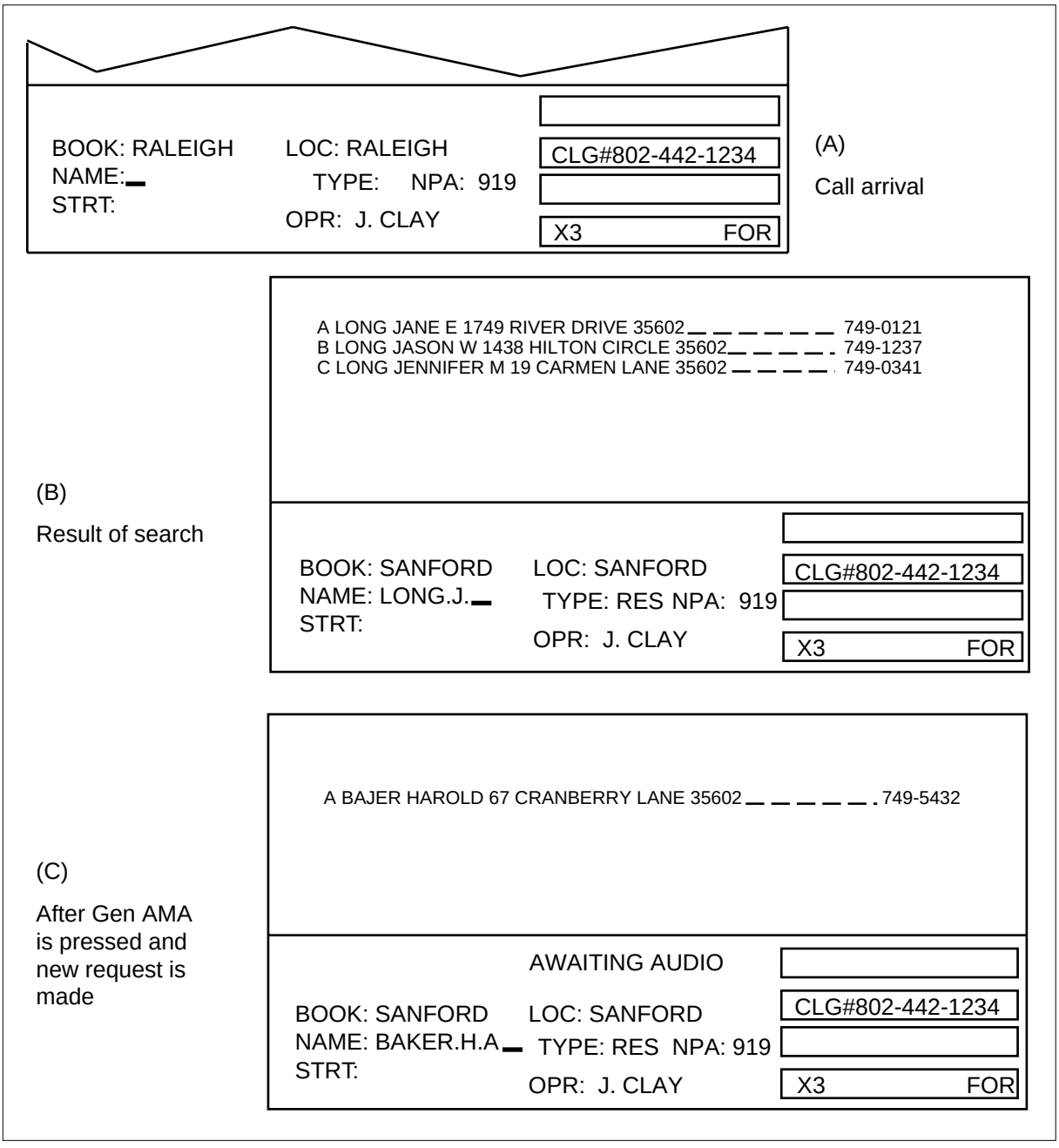
Enter appropriate listing selector for Harold Baker.

12 Press **Audio Rls** key.

13 Message Awaiting Audio is displayed in message/command line (see figure 5-5, part C).

Call is released to audio announcement and the screen clears.

Figure 5-5xxx
Illustration of screens on multiple request call scenario



DA recall call scenario

On recalls, when the call is reconnected to the operator position, the following information is displayed:

- The page of listings that was displayed on the initial call.
- The name search criteria that was entered.
- The locality.
- The NPA.
- The first character of the street name.
- The type of search.

In addition, the following message appears in the message/command line: `Reconnect, Line X Selected (`where X represents the listing selector).

In the following call scenario, (see following procedure) the subscriber (919-859-8400) dialed 411 and requested the number for Greg Miller. The subscriber was released to audio; however, the subscriber did not hang up after the audio announcement quoted the requested number. After a predefined period of time, the subscriber was reconnected to the operator.

Recalls are handled just as any other directory assistance call, except that they cannot be released to audio. By default setting, recalls are verbally quoted; Table DEFOPT can be set to have audio release capability. If so, the line selectors would be displayed.

DA recall call scenario

At the position:

1 Call arrives at position; information as described in previous paragraph appears on screen (See figure 5-6, part A).

2 Answer call using locally defined answer phrase.

3 Subscriber says that noise on the line was so bad that he could not hear the audio announcement very well.

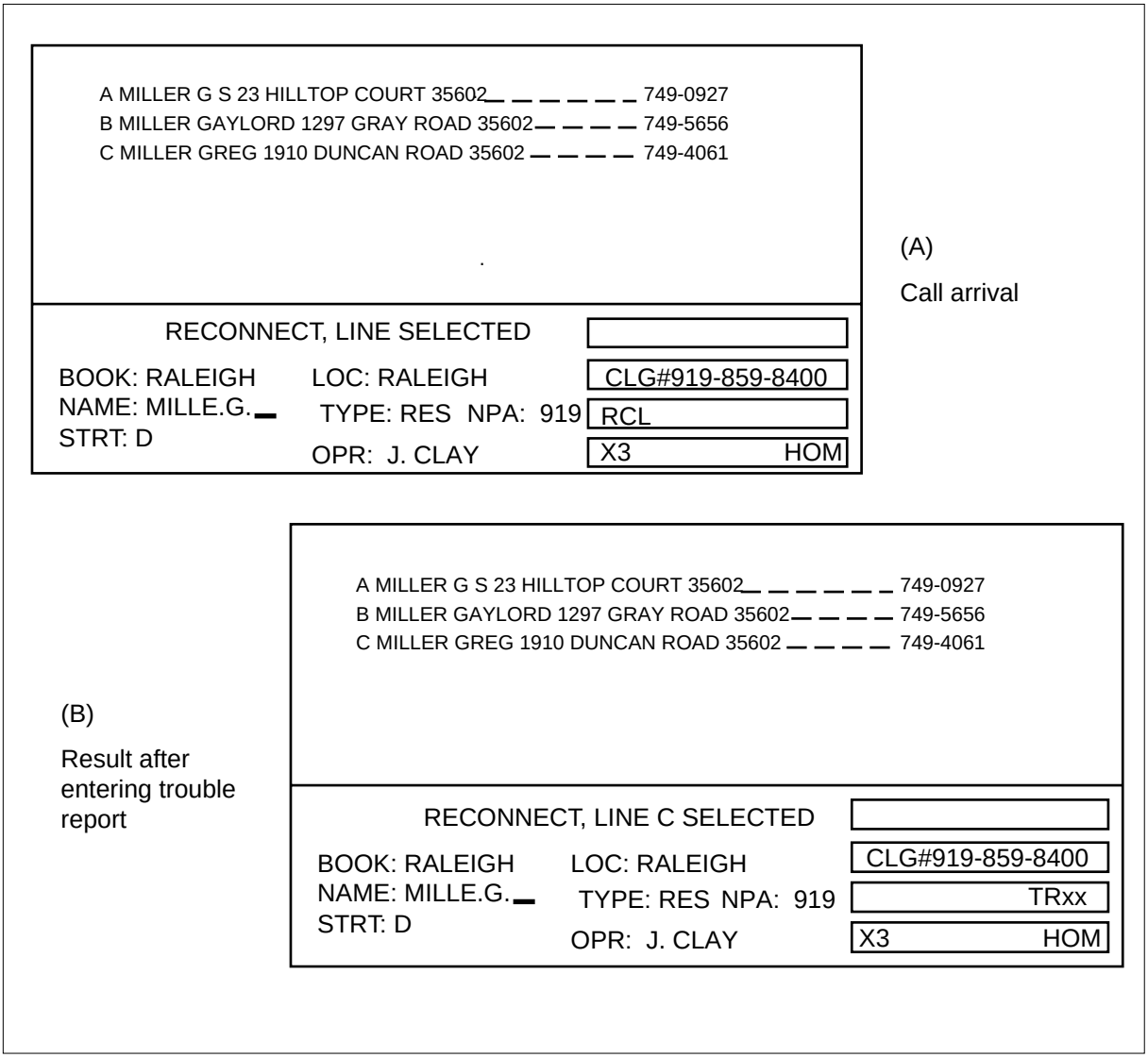
Press **Trbl** + digit code for noise on line + **Start**.

4 TRxx appears in group 3, where xx represents the digit code for noise on line (see figure 5-6, part B).

5 Verbally quote the requested number to the subscriber.

Press **Pos Rls** to release call.

Figure 5-6xxx
Illustration of screens on DA recall



Intercept ANI failure call scenario

In this intercept ANI failure scenario (see following procedure), the calling party (919-859-8400) dials 859-9811.

Intercept ANI failure call scenario

At the position:

1 Call arrives at position, Intercept Call appears in the message/command line, and SPL appears in group 3; X3, NC and INT appear in group 4, and the default NPA of 919 appears in both the NPA and NAME fields (see figure 5-7, part A).

Press dialed number (intercept number) 859-9811 + **Start**.

2 Press the **Int** key.

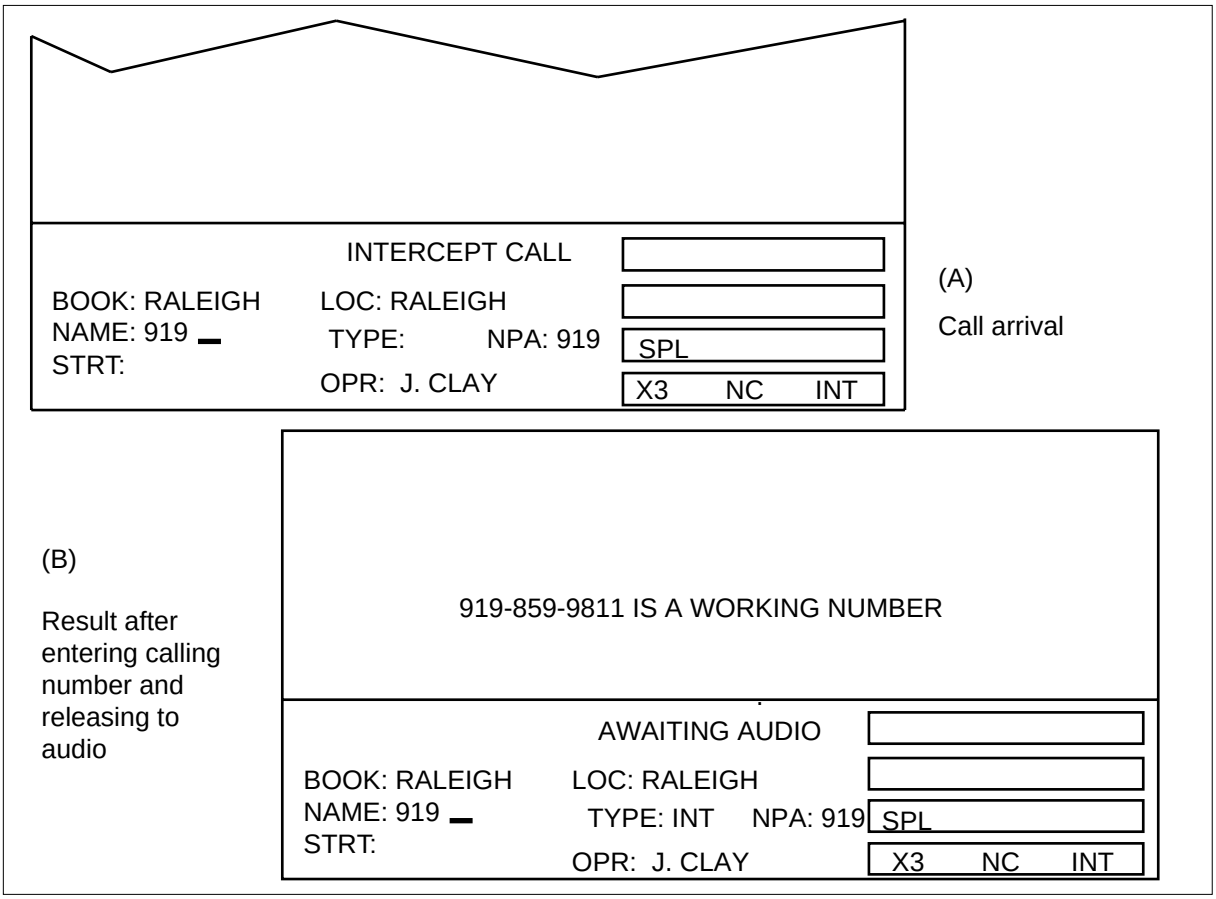
Call is released from the position and the screen clears.

Note 1: The dialed number (intercept number) is entered in the NAME field. On call arrival, the NAME field displays the NPA and the cursor defaults to the Name field.

Note 2: The calling number does not display on intercept calls because the Calling Required field in Table DABILL is always set to N (No).

Note 3: There are no listing selectors associated with intercept calls.

Figure 5-7xxx
Call screens on an intercept ANI failure call



Intercept cut-through call scenario

Intercept cut-through calls result when the subscriber has received audio announcement and stays off-hook beyond a post announcement time-out.

In this scenario (see following procedure), the calling party (919-859-8400) dialed 859-9811, received audio announcement, and did not hang up.

Intercept cut-through call scenario

At the position:

1 Calling party (919-859-8400) dialed 859-9811, received audio announcement, and did not hang up.

Call arrives, CUT appears in group 3; X3, NC, and INT appear in group 4 (see figure 5-8, part A). The NPA and NAME fields show 919 and Intercept Call displays in the message/command line.

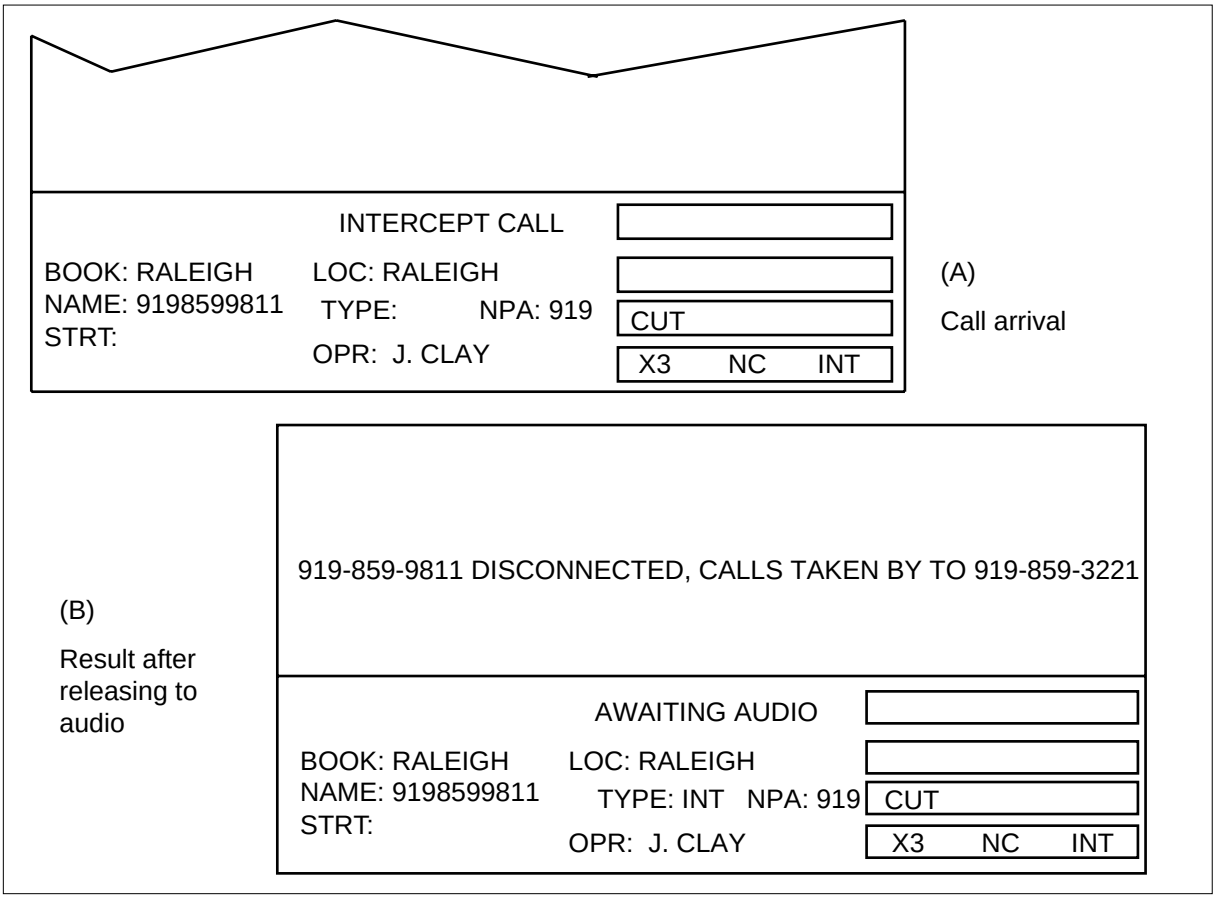
Ask subscriber for more information.

2 Enter additional information which the subscriber provides.

3 Press the **Int** key; the intercept database search is initiated, and call is released to audio.

Screen clears.

Figure 5-8xxx
Call screens on an intercept cut-through call



Intercept recall/verbal quote call scenario

An intercept recall occurs when a subscriber has been previously connected to an audio announcement by an operator (for example, on an ONI call).

In this scenario (see following procedure), the calling party (919-859-8400) dialed 859-9811, was connected to audio announcement by an operator, and did not hang up.

Intercept recall/verbal quote call scenario

At the position:

1 Call arrives at position, RCL appears in group 3; X3, NC, and INT appear in group 4 (see figure 5-9, part A). The NPA and Name fields show 919, Intercept Recall appears in the message/command line.

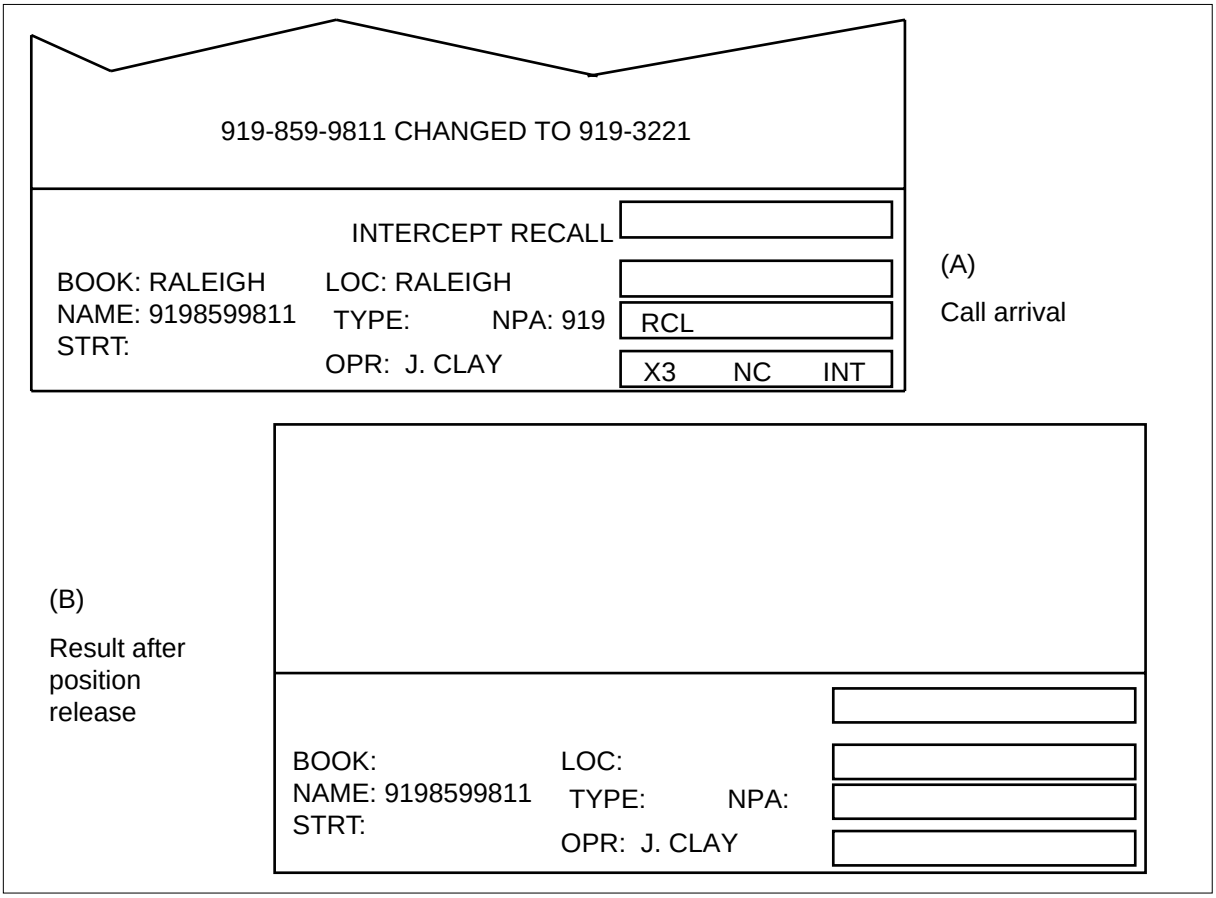
Answer using locally defined phrase.

2 Subscriber says he did not hear the audio announcement.

Verbally quote the number from the listing area to the subscriber.

3 Press **Pos Rls** to release call from position; screen clears.

Figure 5-9xxx
Call screens on an intercept recall call



Administrative procedures

General operators may need assistance with call handling. The service assistant (SA) and in-charge (IC) operator assists the general operator with calls when requested. Enhanced SA/IC queueing allows more than one operator per team to be queued at a time.

Types of assistance requests

There are two types of assistance requests that general operators make:

- general requests-no particular SA/IC requested
- directed requests-a particular SA/IC requested.

General requests for assistance

When a general operator makes a request for assistance, the DMS attempts to connect to the SA that has been available the longest. If no SA is available, the DMS searches for an available IC. In order to respond to an assistance request, the assistant must share service types with the requesting operator.

In-charge positions

- The in-charge can be in one of three modes:
- accepting no assistance requests
- accepting directed assistance requests only
- accepting general and directed assistance requests.

If there is no available SA/IC, the general assistance is queued. There is only one queue per operator team; however, up to 16 operators can be queued at one time. The requesting operator has an on-hook forward supervision display on their screen indicating that the SA/IC is on-hook. If the operator presses **Pos Rls** while in queue, the subscriber is released to the queue.

Table SAQSIZE

The queue has the capability to queue up to 16 requests. Operating companies can datafill how large the queue can be (up to 16). Table SAQSIZE provides this capability for each team. The table also allows the

operating company to determine when the Sonalert is activated. When the number of SA requests exceeds the value, the Sonalert is activated. When the queue falls under that value, the Sonalert is deactivated.

In-charge screen displays

When assistance requests are in queue in a team, the in-charge screen for that team is updated. A display shows when an SA/IC is in queue, and the IC can become available to assist with the requests. When the SA/IC queue is full for a team, the display indicates that the SA/IC queue is full and further requests are connected to a busy tone.

An SA/IC becomes available either by releasing the current request or entering keystrokes to accept general requests. When an SA/IC becomes available, the DMS switch looks for an assistance request for the SA/IC to handle. If a queued general request is in the SA/IC team, the request is connected to the SA/IC.

Cross team routing

Typically, operators do not receive assistance from the SA/IC in another operator team. Table OFCENG has an office parameter--TOPS_CROSS_TEAM_ROUTING that applies to both general and directed requests. If the parameter is set to Y (yes) and an operator places a request with no SA/IC available in the team, the DMS searches for an available SA/IC in other teams. The available SA/IC is connected to the queued operator. If the parameter is set to N (no), the DMS switch does not search other teams for an available SA/IC.

Note 1: Cross team routing only applies to general operators. SA/IC operators can place directed requests regardless of the value of the parameter.

Note 2: When a general operator is queued, a display appears on the IC position in the general operators team only.

Directed requests for assistance

Directed requests are not queued because each SA/IC would require request queues. When an operator places a directed request and the desired SA/IC is unavailable, the operator gets a busy tone. When an operator gets a busy tone, the operator should release the call and try again.

SA/IC operators can request assistance. SA/IC positions can only place directed requests so that general operators have exclusive access to the queues for their requests.

In-charge screen displays

Since directed requests are not queued, no additional screen displays appear at the IC position.

Releasing calls to queue

When the operator requests assistance and is queued, there is not an immediate answer by an SA/IC. If the general operator is no longer needed, the operator can hit **Pos Rls** to release the call to queue. Before releasing, the operator should inform the calling party that the subscriber is in queue for assistance by saying, for example, "Please hold for assistance." The general operator is available for the next call.

The subscriber hears ringing as when in queue for a general operator. From the queue, the SA/IC can assist with the call and hit **Pos Rls** to end the call. The SA/IC does not have the capability to float a call because he or she have no way to collect charges or classify the call.

SA/IC queueing enhancements

SA/IC queueing enhancements allow the operating company to choose to have SA/IC requests serviced on the basis of the age of the request. Any SA/IC can receive general SA/IC requests from operators in any team (provided cross team routing is in effect). To prevent subscribers from waiting an excessive amount of time for an SA/IC to respond, operating companies can use a parameter to select queueing by request age.

When an SA/IC becomes available, the DMS switch searches the request queue for each team in the switch. The oldest SA/IC request is connected to the newly available SA/IC.

Note: Parameter SA_QUEUEING_BY_REQUEST_AGE in Table TOPSPARM must be set to Y for the queueing by request age to function. The default value is N.

Interaction with cross team routing

Queueing by request age has a noticeable affect only when cross team routing is invoked. If cross team routing is off, then no scanning is done for requests in other teams. The first queued request from the newly available SA/IC's team is connected, and since the queue is first-in, first-out, this request is the oldest request in the SA/IC's team.

Interactions with service type

No requests are attached to SA/IC positions that cannot handle the request. This distinction means that the oldest request in the office may be passed over temporarily if it is of inappropriate service type for the newly available

SA/IC. When the next SA/IC with a compatible service type becomes available, the oldest request is serviced.

Expansion to maximum SA/IC's per team

This enhancement also expands the maximum number of SA/IC's that may be datafilled per team. The former limit was 6 SA/IC's per team, the new limit is 126 SA/IC's per team.

Note: The maximum number of SA/IC's that can be datafilled in Table TOPSPOS remains 126. Therefore, if a team is datafilled with 126 SA/IC's, then no other SA/IC's may be datafilled in any other teams.

Procedures for connecting to a service assistant

- There are two situations when the operator needs to connect to a service assistant (SA):
- in response to a page
- to obtain assistance in call handling.

How to connect to an SA in response to a page

To reach the SA, use the following procedure.

How to connect to an SA in response to a page

At the position:

1 Press **Make Busy** and complete current call.

2 Press the **Opr** key.

3 Enter 0.

4 Enter the number of the SA position to direct the request to the specific SA.

Note: The number of the paging SA/IC displays in the call control function area 2 of the general operator screen.

5 Press **Start** .

How to connect to an SA to obtain assistance in call handling

The steps for reaching the SA to obtain assistance in call handling are the same as for reaching the SA in response to a page; however, there are a couple of additional considerations when attaching to an SA for call handling assistance.

If the operator is going to stay on the line while the subscriber is connected to the SA and the operator wants to pass information to the SA without the customer hearing the exchange, use the following procedure.

How to connect to an SA to obtain assistance in call handling

At the position:

1 Press the **Opr** key.

2 Enter 0.

3 Enter the number of the SA position to direct the request to the specific SA (optional step if you wish to reach a specific SA).

4 Press **Start**.

5 Press **Split/Join** key to put subscriber on temporary hold while you converse with the SA.

6 After passing the necessary information to SA, press **Split/Join** to reconnect if you want all three parties on the line; otherwise, hit **Pos RIs**.

7 If you are no longer needed on the call, press **Pos RIs** to release the call from your position to the service assistant.

Note 1: Billing cannot be done from the an SA position. If billing is required on the call, the SA or the operator must fill out a manual ticket.

Note 2: If no charge applies to a call when only dialing instructions are given, the operator should press **No Chg** key prior to releasing the call from the position.

How to originate a call from the position without having a call connected

To originate a call from the position without having a call connected to the position, use the following procedure.

Originating a call from the position without having a call connected (continued)

At the position:

1 Press **Make Busy** and complete current call.

2 Press the **OGT** key.

3 Enter the two digit code.

Note: Codes range from 00 through 99 and are defined in Table OGTMPKEY.

4 Press **Start**.

Personal audio response system

This chapter describes the personal audio response system (PARS), a feature that plays custom announcements to a subscriber when a call is presented to a TOPS MPX position. The PARS announcement uses the voice of the operator occupying the TOPS MPX position.

PARS announcements

PARS announcements are determined by call attributes sent from TOPS MPX to PARS. These prerecorded announcements give the operator a brief rest between calls, thereby reducing his or her fatigue. The announcements also provide a consistent tone of voice for call presentation.

Each TOPS MPX position headset connects to a PARS "box" that links the position to the DMS switch. Because of this connection, loops should not be changed during a PARS announcement. Changing loops during an announcement may cause the subscriber on one loop to hear all or part of the announcement meant for the other loop.

Note: The time spent playing the PARS announcement is included in the operator actual work time (AWT).

In a typical scenario, PARS might play the announcement "What city, please?" to a subscriber. The DA operator does not have to repeat the phrase for each call, and so gets a brief rest between calls. In addition, the operator gets an indication of the type of call that has arrived before he or she has to respond to the caller.

Call presentation tones

PARS calls do not receive a call presentation tone, so if a PARS announcement fails, the only indication of a call arrival is a screen display. If the operating company requires a call presentation tone, then the tone must be part of the PARS announcement.

Responding to the subscriber

A PARS recorded announcement gives the operator time to determine the type of call before responding to the subscriber. Then the subscriber's request must be acknowledged and the call answered appropriately.

TOPS with QMS

Using the Queue Management System

The Queue Management System (QMS) feature is available to TOPS offices and is referred to as TOPS QMS. The QMS feature is a software package that provides enhanced capabilities for the management of up to 255 call queues (limited to 16 services for BCS34).

Queues can be used to separate types of traffic, for example, 555 directory assistance for the home NPA, 555 directory assistance for a foreign NPA, or 131 and 141 calls from other directory assistance offices. Database searches and call handling procedures remain essentially the same as non-QMS positions.

This feature provides the capability to create a class of senior operators that can assist other operators as well as serve regular operator traffic. With this feature, operators are assigned based on a profile of their abilities, consideration of the traffic load, and other factors. The following is an example of a call queue and operator profile arrangement:

- profile 1 - directory assistance (English)
- profile 2 - directory assistance (Spanish)
- profile 3 - intercept service (English)
- profile 4 - intercept service (Spanish)
- profile 5 - directory assistance and intercept (English)
- profile 6 - directory assistance and intercept (Spanish)

The QMS feature provides for up to 255 individual queues which also may be assigned such as the following:

- call queue 1 - directory assistance (English)
- call queue 2 - directory assistance (Spanish)
- call queue 3 - intercept service (English)
- call queue 4 - intercept service (Spanish)

The QMS feature matches the call queue to the operator's profile. In this example, operators assigned profile 1 are sent calls from call queue 1. Operators assigned profile 2 can receive calls from call queue 2. Operators assigned profile 5 are sent calls from both call queues 1 and 3.

When an operator logs on to a suitably configured operator's position, calls are presented according to the operator's call selection profile. Once a call arrives at a position, the operator may provide any service defined in the operator's QMS service profile.

Logging on to a QMS position

To log on to a TOPS QMS position, perform the following steps. A successful logon screen (which appears before pressing make busy key to accept calls) is shown in figure 8-1. The letter `G` in this example refers to the classification of general operator.

To log on to the TOPS QMS position, follow the procedure below.

Logging on to a QMS position

1 Seat your headset.

2 Press the **Opr** key.

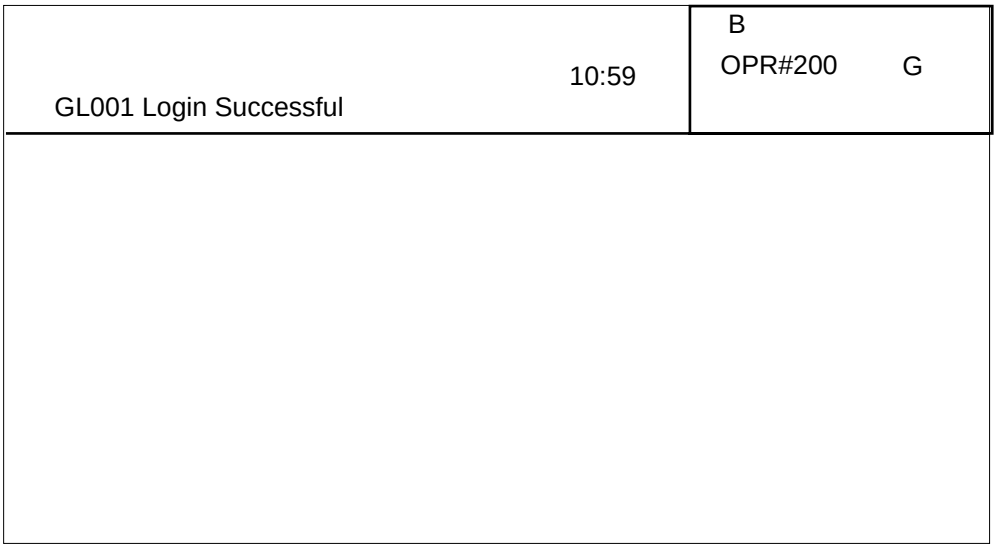
3 Enter your one- to four-digit operator ID using the number keypad in the call processing cluster.

4 Press the **Start** key.

5 Press the **Make Busy** key (ensures that calls can be received at your position).

Note: If the Queue Management System (QMS) serves a position that is vacated by an operator while a call is on permanent hold, the next operator's profile may not match the call on hold. In this event, the next operator is unable to log on to the position until the call on hold is completed. Follow local instructions when this condition is encountered.

Figure 8-1xxx
Example of successful logon to QMS position

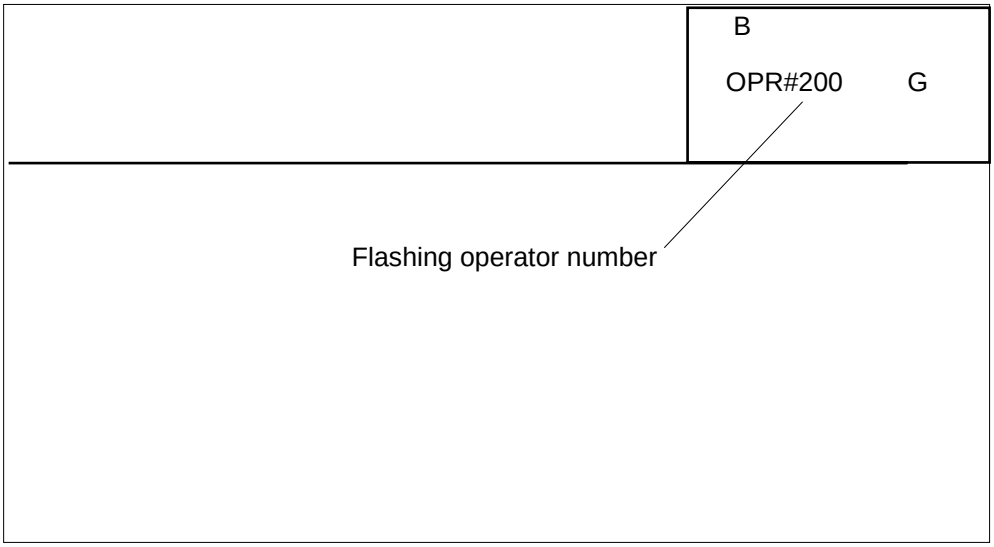


Unsuccessful logon

An unsuccessful logon can occur by entering wrong data or by using a improper keying sequence. Figure 8-2 is an example of the position screen with an unsuccessful logon indication (flashing operator number). A logon may be denied by the DMS switch for such reasons as follows:

- no operator profile datafilled which corresponds to the operator number used to log on
- position service profile and the operator's service profile are inconsistent
- operator's identification number is out of range
- operator's number for logging on is missing
- operator's number used for logging on is already in use

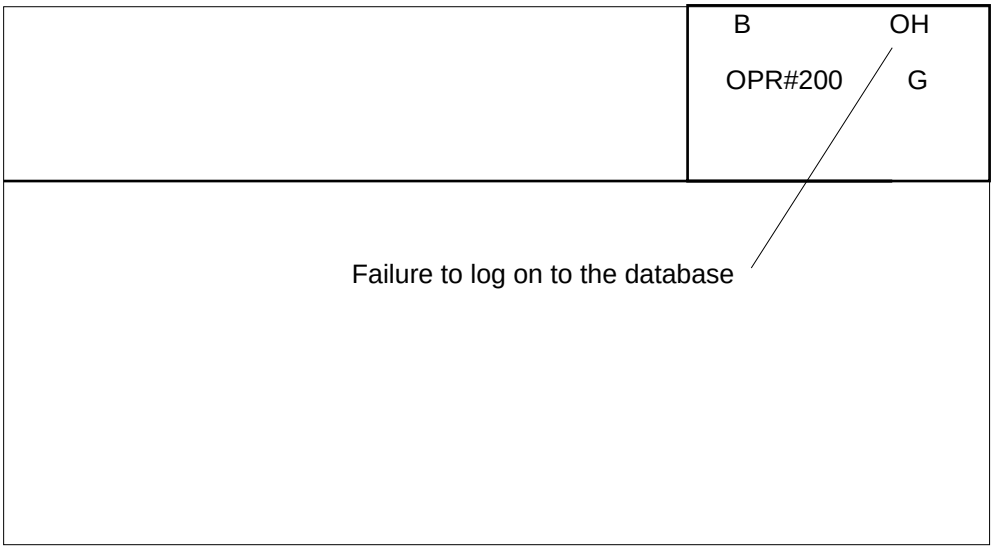
Figure 8-2xxx
Unsuccessful logon attempt



Unsuccessful logon to the database

In the event of a failure to log on to the database (such as directory assistance), the indicator OH (operator handled) is shown on the screen (figure 8-3). The operator still receives calls for that service, but the calls have to be processed manually (as locally directed) or the subscriber instructed to hang up and try the call again.

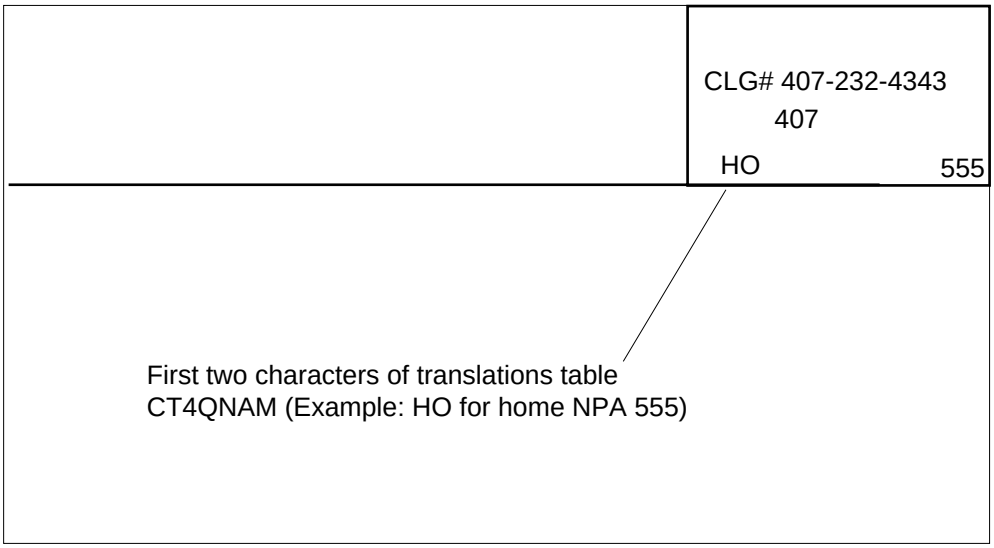
Figure 8-3xxx
Failure to log on to the database



Receiving a call

When a call request is received at the switch, the TOPS call processing program of the DMS switch searches for an idle position with a position profile that matches (a position that can serve this call request) the requirements of the call. When the required position is found, the call is sent to the position. Figure 8-4 shows an example of a call at the operator's position.

Figure 8-4xxx
Screen display of 555 directory assistance call arrival



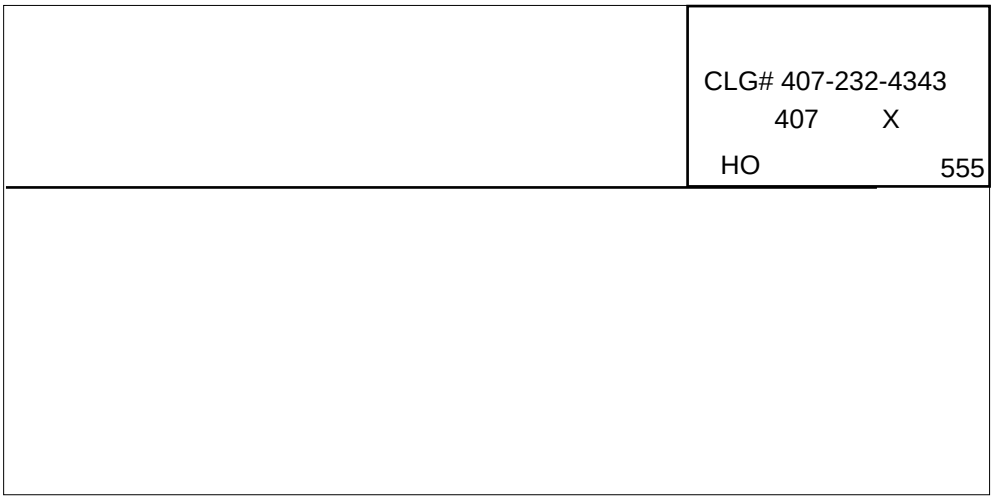
Making changes to a call for recall or transfer

An operator has the capability to change the call type for queuing (CT4Q) or the language mark. These capabilities are available to allow an operator (who cannot complete the call) to transfer the call to another operator who can complete the call (change of CT4Q or language mark), or to mark the call for recall, which, when the call is released form the first position, causes the call to be assigned to another operator who can complete the call.

Transferring a call to another operator

Pressing **Opr** + 1 + **Start** causes a call to be set (toggle) to transfer or recall. An operator can transfer a call to another operator by pressing **Opr** + 1 + **Start** (to set for transfer) and then **OGT** + digits + **Start** followed by **Pos Rls.** The digits are those that are datafilled in translations Table TQOGTKEY, indicating call transfer. Figure 8-5 shows an example of the position screen during the transfer sequence before the position has been released. The X indicates that the call is prepared to be transferred. If the call is marked for recall, the X does not appear, but the CT4Q display changes to the recall indicator.

Figure 8-5xxx
Screen during call transfer sequence before position release



Marking a call for recall

A call can be marked for recall by pressing the **Opr** + 1 + **Start** which causes the call to set (toggle) to recall.

Logging off of a TOPS QMS operator position

To log off of a TOPS QMS position, follow the procedure below.

Logging off of a TOPS QMS operator position

1. Press the **Make Busy** key.
2. Complete the current search.
3. Unseat the headset.

Senior operator position

The senior operator class of operators is available with TOPS QMS in addition to the SA class of operators. Service assistants provide assistance to other operators, but unlike senior operators, cannot serve subscriber initiated traffic or complete calls for operators that are being assisted. Service assistants can page and monitor other operators, but senior operators cannot.

The senior operator capability is available through the use of outgoing trunk keys and loop-around trunks. To request a senior operator, an operator presses an OGT key followed by a two digit code specifying the type of senior operator required. The types of senior operators available can be designated at the discretion of the operating company, for example, senior operators specializing in emergency calls.

Automated directory assistance service

Automated directory assistance service

The Automated Directory Assistance Service (ADAS) feature reduces the average work time (AWT) of DA operators by automating the initial inquiry portion of DA call processing. As a voice processing service, ADAS is built on Northern Telecom's (NT) experience with the Automated Alternate Billing Service (AABS) and fits into a family of similar services, such as voice mail, message delivery, and interactive automatic call distribution (ACD).

ADAS is the first application developed for a software platform used to support enhanced voice and data service applications. The software platform is known as the voice processing platform (VPP) and is integrated with a DMS SuperNode switch.

The ADAS system is used with either a DMS-100/200/TOPS or a DMS-200/TOPS SuperNode switch, whether configured as host, remote, or stand-alone operator centers. ADAS is compatible with S/DMS-100/200 TOPS switches using either TOPS, TOPS Multipurpose (TOPS MP), TOPS MPX, or other open position protocol (OPP) positions. Because the functionality of ADAS is contained in the switch, ADAS can be used with any commercially available DA system.

Link interface shelves

Link interface shelves (LIS) located in the DMS switch contain link interface units, which are the modular, provisionable cards that handle special applications. For ADAS, LIS are equipped with a VPP software platform providing ADAS voice service resources.

A VPP consists of a voice processing unit (VPU) application processor unit (APU), network interface unit (NIU), and Ethernet interface unit (EIU). These modules are described as follows:

- A VPU has specialized hardware that records a caller's voice, detects DTMF tones, and plays back stored audio recordings to an operator.
- An APU contains the application software which controls VPU voice processing.

- An NIU provides voice channel interface between the network and a VPU.
- An EIU provides the interface between a VPP and an ADAS OA&M position through an Ethernet LAN.

ADAS call-processing description

The system performs the following eligibility checks before routing a call to ADAS:

- The call must require DA service.
- The incoming trunk group (datafilled in table TPOSTOPT) must specify ADAS service.
- DA billing checks must be satisfied for the call.

If the eligibility checks are successful, the ADAS application software does the following:

Once the connection is made between the operator and ADAS, ADAS plays back the caller's responses. When the playback completes, the ADAS service is released from the call. The remainder of the process is the same as a traditional DA call.

Usually, the operator does not interact with the caller before releasing the call to the ARU, but some calls require interaction. Operators interact with callers if ADAS is bypassed or fails. Operators also interact with callers if the customer response is incomplete or ambiguous. Or, the operator might need additional information from the caller to identify a common listing name.

List of terms

DA

Directory assistance

directory assistance (DA)

DA is a service that allows a subscriber to ask an operator to look up information from a telephone listing database.

IC

In-charge operator

in charge

The in-charge operator is the person using the TOPS MPX in-charge position to assist other operators and monitor the operating team.

intercept call

An intercept call is a call that comes to an operator position when a subscriber dials an out-of-service number or a number that has recently been changed.

operating company

The owner/operator of a DMS-100 Family switch.

SA

Service assistant

service assistant (SA)

The service assistant (SA) is the person using the TOPS MPX assistance position.

subscriber

The individual user of a telephone station set that is connected to a DMS-100 Family switch.

TOPS MPX

Traffic operator position system MPX

Traffic Operator Position System (TOPS) MPX

A personal computer consisting of a controller, a video display, and keyboard for monitoring call details and entering routing and billing information for directory assistance calls utilizing an IBM DA database.

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