# QUIK CALL 2000 INSTRUCTION MANUAL

Telesaver, Inc.
20 Gwynns Mill Court
Owings Mills, Maryland 21117

(301) 363-2500

Can be used with DTMF equipped:

** Single Line Telephones
** Key Telephone Systems
** Loop Start PABX's


User Features:

** Individually Programmed Memory Storage and Retrieval
** User Selected Speed Numbers
** Both Local and Long Distance Number Storage
** Identical Recall Codes for both Local and Long Distance Numbers
** No Special Dialing Instructions for OCC Calls
** Specific Tone Indicators to Prompt Required Information
** Global Memory for Common Numbers Frequently Accessed
** Memory Access from all Telephones on the System


System Dialing Features:

** Long Distance Calls Can be Automatically Routed through OCC's
   (Telesaver, ITT, Sprint, Western Union, MCI, ...)
** Multiple Carriers Can be Programmed
** Least Cost Routing Can be Obtained by Route Selection Keyed to Area Code
** Each Route is an Ordered List of Available Carriers
** Each Carrier Can have a Different Dialing Pattern
** Flexibility in Programming OCC Dialing Patterns:
   Order of Information, Tone Detection, Pauses, Dialing Speeds,
   Not-on-Network (NON) Signal Detection
** Automatic OCC Lockout for Fixed Time Period on OCC Failures
** Separate Programmable Speeds for Central Office and OCC Dialing


System Functions:

** Single- or Multi-User Modes
** 1, 2, or 3 Digit User Numbers
** Forced Memory Allocation Restrictions
** Programmable Maximum Digit and Total Entry Times
** Self-Test Modes
** Memory and Parameter Free Space Readback
** Speed Number Readback
** Remote Programming Capability

TABLE OF CONTENTS

# 1. INTRODUCTION

The QUIK CALL 2000 is an autodialer which performs each of the following functions: number storage and retrieval (the conventional "memory dialer"); transparent store-and-forward long distance calling through Other Common Carriers (OCC's); and Least Cost Routing (LCR) for toll calls. This state-of-the-art dialer adds new meaning to the word, "dialer", providing a totally new dimension to autodialer features. The unit interfaces to the trunk side of telephone systems and is therefore accessible from any station. One dialer can handle from 1 to 24 individual telephone lines, the maximum practical number being a function of traffic patterns in any given establishment. The combination of the three functions permits older telephone systems to enjoy the advanced features of costly new key equipment with minimal investment, and indeed, to greatly enhance even quite modern systems. The integration of these functions into a single unit results in consistency otherwise difficult to obtain.

As a memory dialer, the device provides individual storage areas which are accessible from all stations; conventional speed number dialing on key systems is tied to the station, precluding use from other than a single instrument. Speed numbers from 0 through 255 can be selected, in any order. In a multi-user environment, each employee is assigned a user number. The speed number is always used in conjunction with the user number to identify the requested memory; in this way, different users can select the same speed number independently. There are available many more speed numbers and user numbers than can all be used; the memory space limitation is independent of specific number selection. The dialer can hold from 215 to 250 numbers, depending upon the mix between local and long distance numbers (long distance numbers require more space than local numbers). If forced memory restriction is desired, the maximum speed number which is usable can be preset.

Long distance toll charges can be substantially reduced if such calls are placed over OCC networks. However, a significant disadvantage of subscribing to such systems is that users can find it difficult to "dial all those numbers" and often fall back on direct dialing. It is commonplace to locate businesses utilizing alternative long distance services which, even so, retain sizable direct dial charges monthly. The employees simply find it more convenient to dial "the regular way". Another disadvantage to the use of OCC's is that the secret authorization code must be divulged to all employees, who may then make personal calls in the evening (from home) with the company code. Both of these important problems can be overcome with the use of an autodialer. The user dials normally, and the dialer handles the rest of the work entailed in call placement. The authorization code is stored in the dialer and need not be publicly known.

A number of OCC autodialers merely dial the local access number and send the authorization code to the OCC, turning the rest of the call over to the user. Such dialers do not store and forward the relevant information. This particularly becomes a problem when billing codes are employed. These accounting codes many times are the single most important OCC feature, offering the business user cost accounting which is not available with either direct dialing or WATS calling. The billing code is usually appended at the conclusion of the other required information, and the non store and forward

dialers cannot send it.

The QUIK CALL 2000 combines speed dialing with OCC dialing, so it is only natural for the dialer to send the telephone number in addition to the authorization code after calling the access number. However, in a multi-user environment, where a user number is utilized to identify the speed dial number, it is also quite natural to send that user number as the billing code automatically. The result is that OCC dialing is made as painless as is possible: all relevant information, and only relevant information, is entered at the outset; it is the dialer's responsibility to complete the call according to its system programming instructions. An important offshoot of this process is that the actual user does not do anything different to place a toll call through an OCC than recalling any speed number, and to call long distance numbers which are not stored as speed numbers requires at most the addition of an employee number. A communications manager can shift from OCC to OCC by changing the system programming. This does not affect the manner in which users place calls.

Least cost routing has generally only been available to owners of advanced PABX's, or to corporations large enough to own specialized, expensive LCR switching equipment. With the proliferation of OCC's and resellers, comparison shopping reveals that individual services are more cost effective than one another when dialing different areas of the country. The QUIK CALL 2000 can be programmed to use different carriers dependent upon the area code of the number requested. For businesses, the relative cost of codes to traffic usage is minimal, and subscribing to several carriers is quite feasible. The greatest impediment to this practice has been the difficulty of training the users when to use each carrier, and how to do so: the dialing patterns can be quite different. With the use of the QUIK CALL 2000, multiple subscription becomes feasible.

Another advantage of multiple carrier usage is that if one network is down, the other probably is not, and it is not necessary to resort to direct dialing. The dialer can be programmed to automatically advance down a list of carriers until an operating vender is located. Failed services can be locked out from usage for say, 15 minutes, and all subsequent calls will proceed directly with the second choice. In every case the user only enters information once; the dialer will retry dialing with that same information.

To activate QUIK CALL 2000, a line is selected to which the dialer is connected, and the receiver is taken off-hook. Within ten seconds of this action, sending the DTMF digit "*" alerts the dialer that service is required. Since a single dialer handles multiple telephone lines, it may be possible that it is not available at that instant. The dialer latches the service request, and will be available to the requesting line as soon as it handles pending calls without hanging up and trying again or resending the "*". The dialer acknowledges readiness with a tone, and the user can proceed with the desired action.

## 2. MODES OF OPERATION

The QUIK CALL 2000, although a single device, may be used in a variety of differing operating modes. The particular mode desired is selected by system programming. As requirements change, the system programming can be modified to reflect new needs.

### Mode 1

The simplest dialer mode is that of a single user without billing codes. This does not mean that only one person can use the unit; however, user numbers are not employed, and therefore the speed dial numbers from 0 to 255 are not keyed to any particular employee, and must be allocated amongst all users. In this situation, where several users make use of the system, each may be assigned a block of speed dial numbers: for instance, one person may be permitted to use speed numbers from 0 to 19; another from 20 to 39; and so on. These restrictions are solely by convention and are used to prevent one person from clearing another's stored number.

The advantage of Mode 1 is that fewer digits need be entered to actually place a telephone call, since the user number does not exist. The user interface with the dialer is the simplest of all modes, and placing calls and storing numbers require the least number of steps. This mode may be desirable for establishments where there are a relatively small number of users.

Since this mode does not utilize user numbers, it is impossible to force individual billing codes for long distance calls through OCC's. Additionally, the user cannot force a billing code to be used if desired. It is still possible for the dialer to send a billing code to an OCC for long distance calls; but this code is invariant and will always be used. This situation may be desired, for instance, for a branch office of a large corporation where the corporation itself has a single authorization code, the branch itself is assigned a particular billing code, and there is no requirement to provide individual codes for each employee. In this fashion, each branch office uses a different billing code, and the corporate headquarters receives cost accounting by branch office instead of individual employee. This saves the cost of additional authorization codes for each branch office, were individual billing codes to be used. When this situation occurs, it is impossible for an employee to alter the billing code from that assigned to the branch office.

### Mode 2

The Single User with Billing Codes mode is identical to mode 1, except that the user has the option of overriding the default billing code. In the case of the branch office, the billing code assigned to that branch is used as a default value, and all long distance calls through an OCC will use this code. However, the user may force a different billing code to be used. In the case of the branch office, if an employee assigned to branch #1 is temporarily working out of branch #2, when he uses the autodialer installed at branch #2, the branch #2 billing code can be overridden so that his calls use the billing code assigned to branch #1.

This mode can also be used when the billing code is to be attached to a job number instead of an employee number. An example of this would be a lawyer's office: when placing a call for a particular client, that client number can be forced as the billing code for a toll call; whereas if no particular case is being worked on, the default value for the entire office will be used for the billing code. This is necessary since for most OCC's, if a billing code is to be used occasionally that account must always require the use of a billing code -- otherwise the call will not be completed.

Mode 2 can also be used in place of mode 4 (Multi-User with Billing Codes) when it is not desired for individuals to store their own personalized speed numbers. The default billing code should then be set to 0 (which OCC's generally do not accept). To place long distance calls, the user must enter a billing code (with the * NEW BC * option) or the OCC will not complete the call. The use of speed numbers is as simple as possible: the user enters his billing code and the speed number desired. The advantage over mode 4 is that fewer digits are required; the disadvantage is that either blocks of speed numbers must be assigned to users or only company stored speed numbers can be used, and that specific prompting for the billing code is not made.

Telephone numbers stored under modes 1 and 2, the single user modes, are actually stored internally under user number 0. If the dialer is subsequently reprogrammed into mode 3 or 4, all of the previously stored numbers will be available under user number 0, unless specifically deleted.

Mode 3

The Multi-User without Billing Code mode is used when speed dial memories are to be keyed to individual user numbers, but either long distance calling through OCC's does not utilize billing codes, or are dialed direct (in which case billing codes are not available). Mode 3 is identical to mode 1, except that when speed dial numbers are used, a user number must also be entered to further identify the stored telephone number. This gives each user the flexibility of choosing his own speed numbers (from 0 to 255) without regard for what numbers anyone else selects.

Mode 4

This mode, Multi-User with Billing Codes, provides the greatest flexibility in dialing options. Its disadvantage is that it may be perceived as too complicated to be easily understood. In fact, it is not very difficult to use, as the distinctive tone beeps prompt whatever information is required at the appropriate time, in addition to being syntactically uniform.

Operation is identical to mode 3 for speed dial usage. However, for toll calls, the user number is sent to the OCC as a billing code automatically. For long distance calls which are not recalled from memory, the user is also required to enter his user number (it is needed for forwarding to the OCC). Since billing codes are used in this mode, it is also possible to override the user number with a different billing code when desired. When this option is used in conjunction with dialing a number not retrieved from memory, the user number is not requested; it is not needed to index a speed number, and is not needed for transmission to the OCC, since the override code is used for that purpose, so it need not be entered.

The same two examples as used to illustrate mode 2 apply to demonstrate the use of this billing code override feature. For telephone numbers commonly used by many people in the business, to prevent overload of the available memory storage space, instead of each user redundantly storing these numbers into his own storage area, these common numbers should be stored under the general corporate number: 0. These speed dial numbers must then be retrieved under user number 0. The override billing code option must be used to identify the user so that the correct billing code can be used instead of the invalid 0.

The second example of the use of the override billing code option is that of the lawyer's office, where for specific cases, the client number is used to override the default user number as the billing code. If no specific client can be charged for the call, the override is not used and the call is automatically charged to the user's account.

In all cases, the override billing code option (* NEW BC *) must be used within the restrictions of the OCC's used: if only two-digit billing codes can be accepted, these override codes should be no longer than two digits.

## 3. PLACING A CALL

The QUIK CALL 2000 has been designed to permit maximum flexibility with minimum difficulty in use: highest priority is given to simplicity in call placement, which is the bulk of dialer usage. The operating mode selected for the dialer affects the user's interface with it; for some modes more information is required than for others, so for accuracy the user's conversation with the unit is described specifically for each mode.

A graphical representation is supplied for each mode, which shows all possible action sequences. Any path originating from the left which follows the direction of the arrows is a valid command. On the graph, the keys are as follows:

() = Enter what is between the parentheses

RBP = Ready beep; a long tone indicating entry may begin

UBP = User number beep; two rapid tones requesting entry of the user number

CBP = Completion beep; three tones rising in pitch indicating all information has been received and the call will be processed

PBP = Progress beep; a single short tone requesting more information

* = The asterisk key on the telephone

LD NR = A 10-digit telephone number, consisting of the area code and number; if a 1 precedes the area code it is ignored and the entry will still be accepted

SPEED NR = A speed dial number, from 0 to 255 (inclusive); can be 1, 2, or 3 digits

USER NR = A number denoting the individual user; depending upon system programming, can be 1, 2, or 3 digits; in the case of 3 digits the maximum number is 255; the minimum number is 0; may be appended with "*" if fewer digits than the programmed number are to be used

NEW BC = A new billing code to be used to override either the default value or the user number when placing toll calls through an OCC; a USER NR is often used as the NEW BC when a user is recalling another user's speed number

The "#" symbol (pound, number sign, or octathorpe) can be used to correct entry mistakes without hanging up and starting over. If this key is entered, the ready beep is reissued and the entry sequence can start over. An exception to this is when the user number is being entered; a "#" at this point reissues the user number beep, and the entry of the user number can be redone.

Examples for each of the four modes are supplied to ease understanding. In all cases, the dialer must first be activated by selecting an appropriate telephone line, taking the receiver off-hook, and entering the "*". If the ready beep is not immediately returned, the user may either wait, and the dialer will send the ready beep as soon as it is ready, or he may hang up and try again 30 seconds later.

Mode 1 -- Single User without Billing Codes

1.  Dial a speed number stored in memory 16:
    (*) RBP (16*) CBP

2.  Place a long distance call with a number not stored in memory:
    (*) RBP (212 976 3838) CBP  or
    (*) RBP (1 212 976 3838) CBP


Mode 2 -- Single User with Billing Codes

1.  Dial a speed number stored in memory 16:
    (*) RBP (16*) CBP

2.  Place a long distance call with a number not stored in memory:
    (*) RBP (212 976 3838) CBP or
    (*) RBP (1 212 976 3838) CBP

3.  Dial a speed number stored in memory 16, but use billing code 73:
    (*) RBP (* 73 *) PBP (16*) CBP

4.  Place  a long distance call  with a number not stored in memory,  but use
billing code 73:
    (*) RBP (* 73 *) PBP (212 976 3838) CBP or
    (*) RBP (* 73 *) PBP (1 212 976 3838) CBP

Mode 3 -- Multi-User without Billing Codes

(Examples assume a 2-digit user number.)

1.  Dial a speed number stored in memory 16 of user number 88:
    (*) RBP (16*) UBP (88) CBP

2.  Place a long distance call with a number not stored in memory:
    (*) RBP (212 976 3838) CBP or
    (*) RBP (1 212 976 3838) CBP


Mode 4 -- Multi-User with Billing Codes

(Examples assume a 2-digit user number.)

1.  User number 88 dials his speed number 16:
    (*) RBP (16*) UBP (88) CBP

2.  User number 88 dials a long distance number not stored in memory:
    (*) RBP (212 976 3838) UBP (88) CBP or
    (*) RBP (1 212 976 3838) UBP (88) CBP

3.  Any user dials a long distance number not stored in memory, but uses billing code 73:
    (*) RBP (* 73 *) PBP (212 976 3838) CBP or
    (*) RBP (* 73 *) PBP (1 212 976 3838) CBP

4.  User number 88 dials his speed number 16, but uses billing code 73:
    (*) RBP (* 73 *) PBP (16*) UBP (88) CBP

5.  User number 88 dials company wide speed number 16 (which is stored under user number 0):
    (*) RBP (* 88 *) PBP (16*) UBP (00) CBP

## 4.   SPEED NUMBER STORAGE

Graphs  are  included  which  describe  the storage  sequences  which  are available in each operating  mode.  Keys  used  in  these  figures which do not appear in the previous description are as follows:

STBP = Store beep; three tones in a low-high-low pattern  which indicates that a store number command can begin

LOCAL  NR  =  Standard  7-digit telephone number;  this must  be a  local telephone call from the given telephone line; cannot begin with a 0 or a 1

1  +  10-digit NR  = The digit "1" followed by  an area code and  7-digit telephone number; this  number will  be  routed  according  to  long  distance calling instructions set under system programming

erase =  The  speed number selected  is deleted from memory;  this is not necessary  if  the  same  speed number is  to be  reused  for  another  number immediately

read memory = Play back in Morse code the  contents of the selected speed number memory

read number of memories = Play  back  in  Morse  code the number of speed numbers currently stored  under the specified user number  (or total for modes 1 and 2)

The "#" symbol,  if entered while in memory storage mode, will return the dialer to the ready beep unless a user number  is being entered (in which case the  user  number beep  is  reissued,  and  reentry of  the  user  number  can proceed).  The  telephone can safely be hung up to exit the store mode.  If an error beep  is heard (ten rapid high pitch tones) an input error was made, and no  memory changes occur.  Examples are given  here for each  of  the  dialer operating modes.

Modes 1 and 2 -- Single User

1.  Store the local telephone number 844-1212 into speed number 16:
        (*) RBP (***) STBP (16*) PBP (844 1212)
               STBP     Hangup

2.  Store the long distance number (212) 976-3838 into speed number 38:
        (*) RBP (***) STBP (38*) PBP (1 212 976 3838)
               STBP     Hangup

3.  Store the local telephone number  844-1212 into speed number 16; store the long distance  number (212) 976-3838 into speed  number  38; store  the  local telephone number 936-1212 into speed number 123:
        (*) RBP (***) STBP (16*) PBP (844 1212)
                    STBP (38*) PBP (1 212 976 3838)
                    STBP (123*) PBP (936 1212)
                    STBP     Hangup

4.  Store  the  long distance number  (212) 976-3838 into  speed number 38  and then call that number:
        (*) RBP (***) STBP (38*) PBP (1 212 976 3838)
                    STBP (#)
          RBP (38*) CBP

5.  Replace a previously stored speed number with a new telephone number:
        Proceed  as if the speed number does not currently exist; the new  number will automatically replace the old one.

6.  Delete speed number 16  which no longer  is  used (to  clear up  memory storage space for everybody):
        (*) RBP (***) STBP (16*) PBP (0)
               STBP     Hangup

7.  Determine the number of speed memories currently used:
        (*) RBP (***) STBP (*) number is sent in Morse
               STBP     Hangup

8.  Determine what telephone numbers are stored in speed memories 16 and 38:
        (*) RBP (***) STBP (16*) PBP (*) the memory is read in Morse
                    STBP (38*) PBP (*) the memory is read in Morse
                    STBP     Hangup

9.  Store the long  distance  number  (212)  976-3838 into memory 38;  make a mistake and correct it:
        (*) RBP (***) STBP (38*) PBP (1 212 976 33 #)
          RBP (***) STBP (38*) PBP (1 212 976 3838)
               STBP     Hangup

10.  Store the  long  distance number (212)  976-3838 into  memory 38;  make a mistake when attempting to reach store mode and recover:
        (*) RBP (**9) the error beep is now heard
          RBP (***) STBP (38*) PBP (1 212 976 3838)
               STBP     Hangup

Modes 3 and 4 -- Multi-User

1.  User number 88  stores the  local telephone number 844-1212 into his speed
number 16:
        (*) RBP (***) STBP (16*) PBP (844 1212) UBP (88)
                STBP       Hangup

2.   User number 88  stores  the  long distance number (212) 976-3838 into his
speed number 38:
        (*) RBP (***) STBP (38*) PBP (1 212 976 3838) UBP (88)
                STBP       Hangup

3.  User number  88 stores the local telephone number 844-1212 into  his speed
number 16; the  long  distance number (212) 976-3838 into his speed number 38;
the local telephone number 936-1212 into his speed number 123:
        (*) RBP (***) STBP (16*) PBP (844 1212) UBP (88)
                      STBP (38*) PBP (1 212 976 3838)
                      STBP (123*) PBP (936 1212)
                      STBP       Hangup

4.   User number 88 stores  the long distance number  (212)  976-3838 into his
speed number 38 and then calls that number:
        (*) RBP (***) STBP (38*) PBP (1 212 976 3838) UBP (88)
                      STBP (#)
          RBP (38*) UBP (88) CBP

5.  Replace a previously stored speed number with a new telephone number:
    * Proceed as if  the speed number does  not currently exist; the new number
will automatically replace the old one.

6.  User  number  88 deletes his  speed number 16 which no  longer  is used (to
clear up memory storage space for everybody):
        (*) RBP (***) STBP (16*) PBP (0) UBP (88)
                STBP       Hangup

7.  User number 88 determines  the number  of speed  memories he is  currently
using:
        (*) RBP (***) STBP (*) UBP (88) number is sent in Morse
                STBP       Hangup

8.  User number  88  determines what telephone numbers are stored in his speed
memories 16 and 38:
        (*) RBP (***) STBP (16*) PBP (*) UBP (88) the memory is read in Morse
                      STBP (38*) PBP (*) the memory is read in Morse
                      STBP       Hangup

9.  User  number 88 stores the long distance number (212) 976-3838 into memory
38; makes a mistake and corrects it:
        (*) RBP (***) STBP (38*) PBP (1 212 976 33 #)
           RBP (***) STBP (38*) PBP (1 212 976 3838) UBP (88)
                STBP       Hangup

10.  User number 88 stores the long  distance  number (212) 976-3838 into  his
memory 38; makes a mistake when attempting to reach store mode and recovers:
        (*) RBP (**9) the error beep is now heard
           RBP (***) STBP (38*) PBP (1 212 976 3838) UBP (88)
                STBP       Hangup

## MODE 1: SINGLE USER WITHOUT BILLING CODES

Placing a Call:
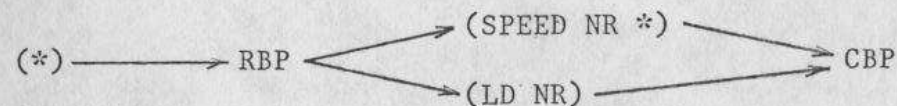
```
                        ┌──────→ (SPEED NR *) ──────┐
(*) ──────────→ RBP ────┤                           ├─────→ CBP
                        └──────→ (LD NR) ───────────┘
```

Storing Speed Numbers:

```
          ┌──────────────────────────────┐
          │                          #────┘
(*) ──→ RBP ──→ (***) ──→ STBP ──→ (SPEED NR *) ──→ PBP   (0) ──────→ erase ──────┐
                          ↑   └──→                         (LOCAL NR) ─────────────┤
                          │                                (1 + 10-digit nr) ──────┤
                          │                                (*) ──────→ read memory ┤
                          (*) ──────→ read number of memories ─────────────────────┘
```

-14-

Follow the arrows for any valid path.

() = Enter what is between the parentheses

RBP = Ready beep
CBP = Completion beep; number will be dialed
PBP = Progress beep; more information needed
STBP = Store beep

LD NR = 10-digit long distance number
(preceding 1 ignored)
SPEED NR = Number between 0 and 255, inclusive

\# can be used to return to RBP, unless USER NR
is being entered, which returns to UBP

Placing a Call:

```
                                                          (SPEED NR *)
(*) ─────────→ RBP ┌─────────────────────────────→┐  ↗              ↘
                   └──→ (* NEW BC *) ─────────→ PBP ┤                 → CBP
                                                    ↘ (LD NR) ────────↗
```

Storing Speed Numbers:

```
              ┌───────────────────────────→ #
(*) ──→ RBP ──→ (***) ──→ STBP ┤  (SPEED NR *) ──→ PBP    (0) ──── erase
                               ↘                      ┤  (LOCAL NR)
                                (*) ──→ read number of memories   (1 + 10-digit nr)
                                                         (*) ──→ read memory
```

Follow the arrows for any valid path.

() = Enter what is between the parentheses

RBP = Ready beep
CBP = Completion beep; number will be dialed
PBP = Progress beep; more information needed
STBP = Store beep

LD NR = 10-digit long distance number
          (preceding 1 ignored)
SPEED NR = Number between 0 and 255, inclusive

NEW BC = New billing code (override)
# can be used to return to RBP, unless USER NR
   is being entered, which returns to UBP

-15-

**Placing a Call:**

```
                              ┌──────→ (SPEED NR *) ──────────→ UBP ──────────→ (USER NR) ──┐
(*) ──────────→ RBP ◄─────────┤                                                             ├──→ CBP
                              └──────────────────────→ (LD NR) ─────────────────────────────┘
```

**Storing Speed Numbers:**

```
        ┌──────────────────────────────────────────────────┐
        │                                          #◄──┐
(*) ──→ RBP ──→ (***) ──→ STBP ◄──→ (SPEED NR *) ──→ PBP ──→ (0) ──────→ erase
                                                           ├──→ (LOCAL NR) ──────────────→ UBP ──→ (USER NR)
                                                           ├──→ (1 + 10-digit nr) ──┘
                                                           └──→ (*) ──→ UBP ──→ (USER NR) ──→ read memory
                            └──→ (*) ──→ UBP ──→ (USER NR) ──→ read number of memories

                    ┌────────────────→ STBP ◄──→ (SPEED NR *) ──→ PBP ──→ (0) ──────→ erase
                    │                                #◄──┐            ├──→ (LOCAL NR) ───────
                    │                                                 ├──→ (1 + 10-digit nr) ──
                    │                                                 └──→ (*) ──→ read memory
                    └──→ (*) ──────→ read number of memories
```

---

Follow the arrows for any valid path.

( ) = Enter what is between the parentheses
RBP = Ready beep
UBP = User number beep
CBP = Completion beep; number will be dialed
PBP = Progress beep; more information needed
STBP = Store beep
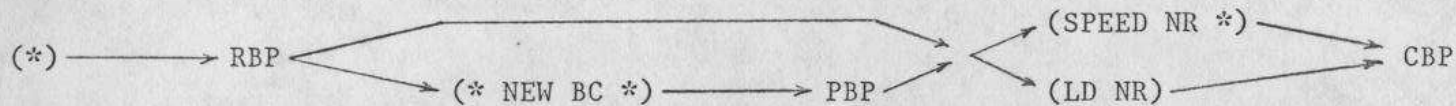
LD NR = 10-digit long distance number
        (preceding 1 ignored)
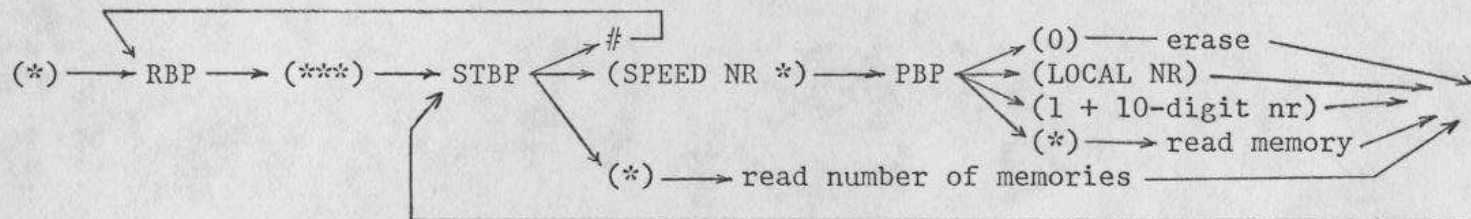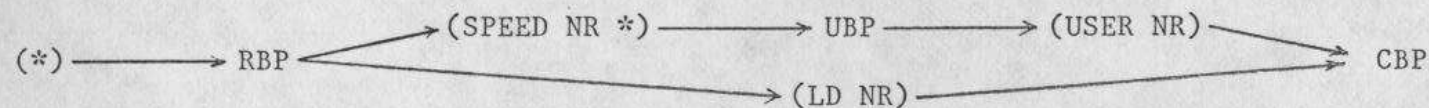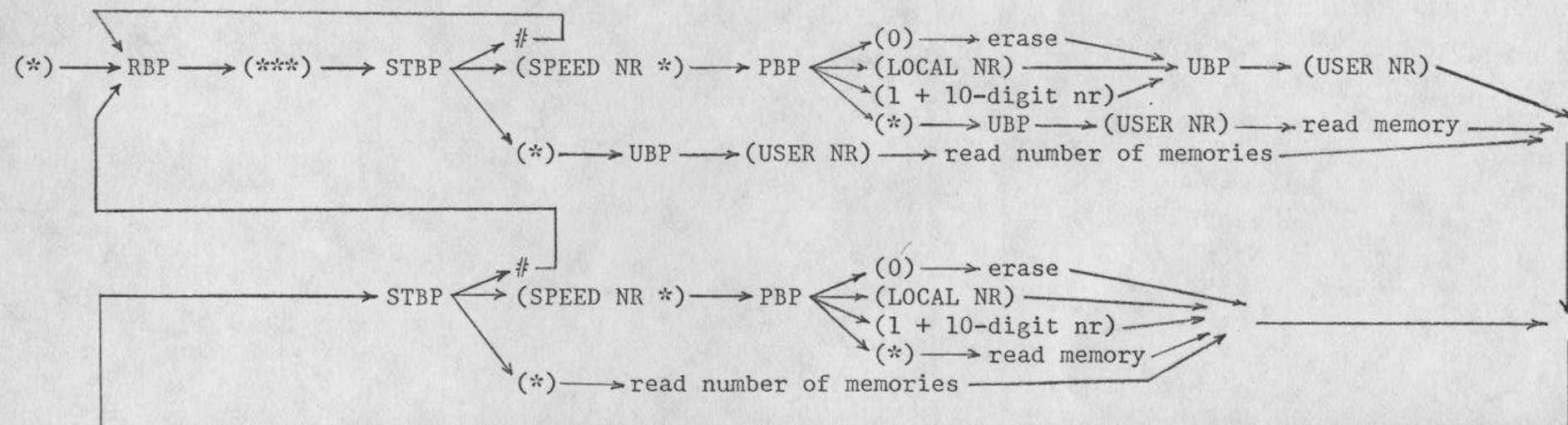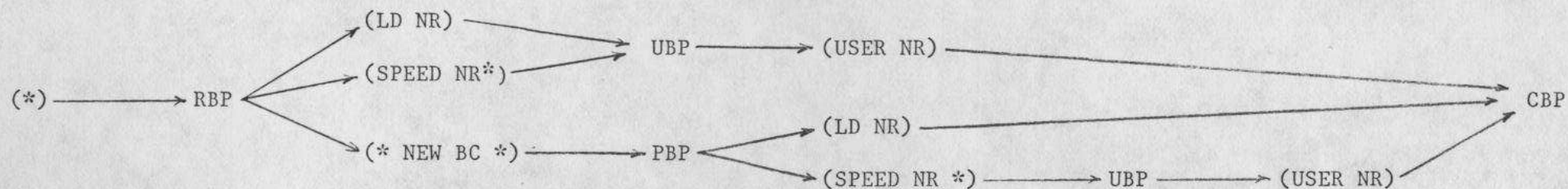SPEED NR = Number between 0 and 255, inclusive
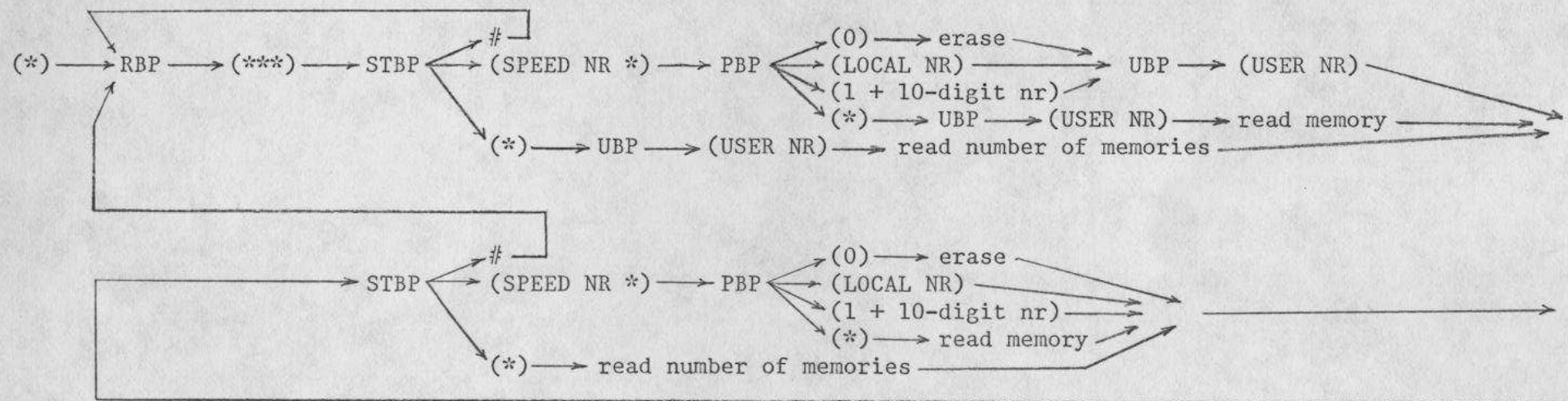USER NR = Employee number (fixed length)

# can be used to return to RBP, unless USER NR
   is being entered, which returns to UBP

**Placing a Call:**

```
                    (LD NR) ─────────┐
                 ↗                   ↘
(*) ──→ RBP ──→ ↗ (SPEED NR*) ──────→ UBP ──────→ (USER NR) ──────────────┐
            ↘                                                              ↘
             ↘                              (LD NR) ────────────────────────→ CBP
              ↘                          ↗
               → (* NEW BC *) ──→ PBP ─↗
                                       ↘
                                        → (SPEED NR *) ──────→ UBP ──────→ (USER NR) ─↗
```

**Storing Speed Numbers:**

```
        ┌──────────────────────────────────┐
        │                         # ────┐   │
(*) ──→ RBP ──→ (***) ──→ STBP ←─→ (SPEED NR *) ──→ PBP ←─→ (0) ──→ erase ─┐
        ↑                    ↘                              (LOCAL NR) ──────→ UBP ──→ (USER NR) ─┐
        │                     ↘                             (1 + 10-digit nr) ─↗                  ↘
        │                      → (*) ──→ UBP ──→ (USER NR) ──→ read number of memories ──────────→ │
        │                                                                                          │
        │                                      (*) ──→ UBP ──→ (USER NR) ──→ read memory ──────────┤
        │                                                                                          │
        │                                                                                          ↓
        │                         # ────┐                                                          │
        └──────────→ STBP ←─→ (SPEED NR *) ──→ PBP ←─→ (0) ──→ erase ─┐                            │
                        ↘                              (LOCAL NR) ──────┐                           │
                         ↘                             (1 + 10-digit nr) ─→                          │
                          → (*) ──→ read number of memories            (*) ──→ read memory ─┘       │
                                                                                                    ↓
```

-17-

Follow the arrows for any valid path.                LD NR = 10-digit long distance number
                                                             (preceding 1 ignored)
() = Enter what is between the parentheses          SPEED NR = Number between 0 and 255, inclusive
RBP = Ready beep                                    USER NR = Employee number (fixed length)
UBP = User number beep                              NEW BC = New billing code (override)
CBP = Completion beep; number will be dialed        # can be used to return to RBP, unless USER NR
PBP = Progress beep; more information needed            is being entered, which returns to UBP
STBP = Store beep

## 5. REMOTE PROGRAMMING

The QUIK CALL 2000 can be remotely programmed: this includes speed number storage as well as system programming. The remote programming sequence must be initiated from within the establishment where the dialer is located, preventing others with the password from calling into the location and changing the programming without permission.

To initiate the remote programming function, a line must be selected, the receiver taken off-hook, and the "*" entered to reach the ready beep. At this point, the six-digit remote programming password (654321) must be entered, followed by "*". When this is received, the dialer returns local dial tone to the user directly, who must then manually dial up the person who is to perform the remote programming action. When the remote individual answers the telephone and is informed that the programming session is to begin, the caller can either place the line on hold or listen in, being careful not to talk or hit the keypad while programming is being performed.

The remote individual initiates the sequence by entering a "*"; a ready beep is returned, and from this point any function which can be performed locally on the dialer can be performed remotely. The only operation which cannot be handled remotely is actually placing a telephone call with the dialer -- this is impossible, since the telephone line is already in use.

Example:

(*) RBP (654321*)
Dial tone is returned.
The remote person who is to perform the programming is called normally.
He answers the telephone.
The caller puts the line on hold.
The remote party enters:
    (*) RBP
    Dialer programming continues as if done locally.
    When complete, the remote party hangs up.
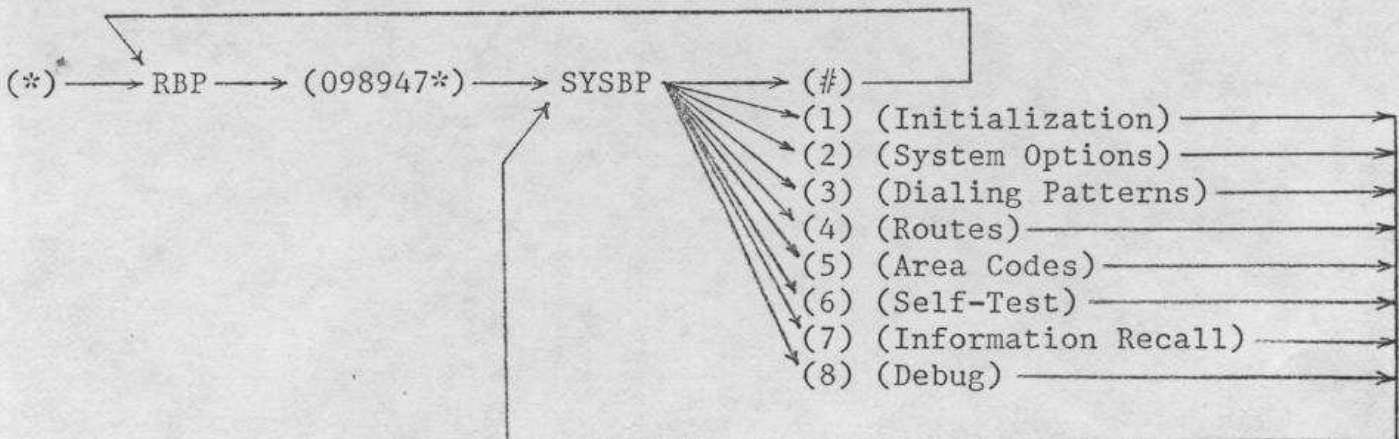    The dialer is returned to normal operation.

## 6. SYSTEM PROGRAMMING

System programming defines the dialer's mode of operation; the number of digits for user numbers; timeout lengths; and call routing parameters. System self-testing and debugging features are available for factory use.

It is recommended that only one individual be responsible for programming system modes for the dialer; and that notes be kept with this manual to facilitate the recreation of system programming in the event that a destructive programming sequence is mistakenly performed.

To gain access to the system programming mode, the six-digit password must be known: 098947. This password is entered from the ready beep and appended with a "*". The system programming beep (SYSBP) is heard, indicating entry into the system programming mode. The SYSBP is a sequence of five tones, varying in pitch as low-medium-high-medium-low. It is distinctive to assure the knowledge that this powerful system mode has been reached.

Eight categories of programming can be performed from the system mode. From SYSBP, the single digits 1-8 select which of these categories are called up. A "#" from SYSBP exits system mode and returns to the ready beep. The graphical description is as follows:

```
       ┌──────────────────────────────────────────────────┐
       │                                                  │
(*)──────► RBP ───► (098947*) ───► SYSBP ──────────► (#)──┘
                                        ╲─────► (1) (Initialization) ──────────►
                                        ╲─────► (2) (System Options) ──────────►
                                        ╲─────► (3) (Dialing Patterns) ────────►
                                        ╲─────► (4) (Routes) ───────────────────►
                                        ╲─────► (5) (Area Codes) ──────────────►
                                        ╲─────► (6) (Self-Test) ───────────────►
                                        ╲─────► (7) (Information Recall) ───────►
                                        ╲─────► (8) (Debug) ───────────────────►
```

What is contained within the parentheses is replaced with a valid sequence of that particular type. If this sequence is accepted, the SYSBP is returned, and the next command can be issued; if a mistake is made, the error beep is sent prior to SYSBP, indicating that the command was not accepted. Once system mode is entered, all timing constraints are removed from digit entry. It is not necessary to exit the system mode with the "#"; a hangup can safely be used as well.

All local telephone calls use dialing pattern 1. To handle long distance calls, the area code of the number requested is compared against the list of area codes entered under system programming option 5. If a match is found, that long distance route is selected. If no match is selected, long distance route 1 is selected by default. Each route is a list of dialing

patterns, of which each pattern generally specifies a particular carrier or DDD for call placement. The first carrier in the route list is selected for call completion. If the pattern is aborted, the next pattern in the route list is tried. If the next pattern is different than the aborted pattern, and it was aborted because a timeout occurred while waiting for a ready tone to be supplied, then that pattern is failed for a fixed period of time. Any routes selecting the failed pattern will bypass that pattern until the failed status is restored by expiration of the failed time period. This prevents repeated calls to an OCC which has experienced a switch failure. If the entire route list is exhausted, the dialer quits and returns local dialtone to the user.

The system programming modes generate progress beeps at various times to indicate progress. It is necessary to wait for completion of the short beep before entering the next digit.

(1) Initialization
    A valid initialization sequence is one of the following:

    (1)(10*)            Clear the speed number storage table
    (1)(1#x...x)        Clear all speed numbers for user x...x,
                            where x...x is a valid user number
    (1)(20*)            Clear all dialing patterns, routes, and area codes
    (1)(21*)            Has the effect of performing all of these commands:
                            (1)(20*), (1)(3)
                            (2)(12), (2)(21), (2)(22 99*), (2)(3 255), (2)(41 8),
                            (2)(42 6), (2)(60 050), (2)(61 050),
                            (3)(1 #121 #37 #*), (3)(2 #121 1 #3* #*)
                            (4)(0 000), (4)(1 1 22 1)
    (1)(3)              Clear all failed dialing pattern statuses
    (1)(40*)            Clear all routes
    (1)(50*)            Clear all area codes


    The (21*) command clears all dialing patterns, routes, and area codes,
and  failed dialing pattern statuses; places the dialer into mode  4 operation
with  two  digit user numbers; sets  the  default billing code to 99; sets the
maximum speed number to 255; sets  the maximum digit entry time to 10 seconds;
sets the  maximum  total  entry time  to  32  seconds;  sets  the  default and
secondary DTMF dialing speeds to 50  milliseconds on  and off;  sets the local
dialing  pattern  (1)  to wait for a one second dialtone and  send the 7-digit
telephone number;  sets dialing  pattern 2 for DDD  long distance calling  via
waiting for a one second dialtone, sending 1, and sending  the  7- or 10-digit
telephone number dependent upon the called area code being equal to  the local
area code;  inhibits  dialing pattern failures;  and clears any previous  such
failures.


Examples:

1.  Perform a master initialization:
    (*) RBP (098947*) SYSBP (1)(21*)
                        SYSBP (#)
        RBP        Hangup


2.   Clear all speed numbers entered  by  user  88;  clear all  failed dialing
pattern statuses:
    (*) RBP (098947*) SYSBP (1)(1# 88)
                        SYSBP (1)(3)
                        SYSBP        Hangup

(2) System Options
       A valid system option sequence is one of the following:

       (2)(1 x)          Set user number to x digits, x=0, 1, 2, 3
                         if x=0 then Single User Mode is selected
                         (mode 1 or 2)
       (2)(20)           Set mode to not use billing codes
                         (mode 1 or 3)
       (2)(21)           Set mode to use billing codes
                         (mode 2 or 4)
       (2)(22 x...x *)   Set default billing code to x...x
                         (useful only for mode 1 or 3)
       (2)(3 xxx)        Set the maximum speed number to xxx, xxx = 000-255
       (2)(41 x)         Set the maximum entry time per digit to x+2 seconds
                         x = 0-9, * (13 sec), # (14 sec)
       (2)(42 x)         Set the maximum total entry time to 4(x+2) seconds
                         x = 0-9, * (52 sec), # (56 sec)
       (2)(5 xxx)        Set the local area code to xxx
                         (only used by the #3* dialing pattern command)
       (2)(60 xxx)       Set the default DTMF dialing speed to
                         xxx milliseconds on and off times, xxx = 000-255
       (2)(61 xxx)       Set the secondary DTMF dialing speed as above


Examples:

1.  Place the dialer into Mode 1:
  . (*) RBP (098947*) SYSBP (2)(1 0)
                      SYSBP (2)(20)
                      SYSBP      Hangup

2.  Place the dialer into Mode 2:
     (*) RBP (098947*) SYSBP (2)(1 0)
                      SYSBP (2)(21)
                      SYSBP      Hangup

3.  Place the dialer into Mode 3 with 1-digit user numbers:
     (*) RBP (098947*) SYSBP (2)(1 1)
                      SYSBP (2)(20)
                      SYSBP      Hangup

4.  Place the dialer into Mode 4 with 2-digit user numbers:
     (*) RBP (098947*) SYSBP (2)(1 2)
                      SYSBP (2)(21)
                      SYSBP      Hangup

5.  Set the maximum  digit entry time to 7 seconds and the maximum total entry
time to 20 seconds:
     (*) RBP (098947*) SYSBP (2)(41 5)
                      SYSBP (2)(42 3)
                      SYSBP      Hangup


6.  Enter  the local  area code as (301) and set the default DTMF dialing speed
to 85 milliseconds on and off:
     (*) RBP (098947*) SYSBP (2)(5 301)
                      SYSBP (2)(60 085)
                      SYSBP      Hangup

(3) Dialing Patterns

A dialing pattern is a specific set of instructions which tells the dialer how to place a particular type of call. A maximum of twelve different dialing patterns may be created, demarked by the twelve DTMF digits. Pattern 1 is always used to place local telephone calls; pattern 2 is by convention set to handle direct dial long distance calls (DDD); and patterns 3-9, 0, *, and # can be used for OCC calling or for special functions.

The dialing patterns are composed of a list 1, 2, 3, or 4 digit commands which instruct the dialer to perform a specific function. In this fashion, dialing patterns can be built up to satisfy any forseeable requirement for dialing into many networks.

A valid dialing pattern command consists of the following:
(3) (x yy...y #*), where x is one of the twelve DTMF digits denoting which dialing pattern to create, and each "y" is one of the following 1, 2, 3, or 4 digit sequences:

| | |
|---|---|
| 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, or * | Send this DTMF digit |
| ## | Send the DTMF digit "#" |
| #1xy | Wait up to 6y seconds (y rings) for a tone lasting (x/2) seconds; if not received, this dialing pattern is aborted and fails |
| #2x | Pause (x/2) seconds |
| #30 | Send the 10-digit telephone number |
| #37 | Send the 7-digit telephone number |
| #3* | Send the 10-digit telephone number, unless the area code is the local area code, in which case send the 7-digit telephone number |
| #4x | If x=#, send the billing code exactly as entered; otherwise, send the billing code with enough preceding 0's to make up a total of x digits |
| #5xy | Wait up to y seconds to receive DTMF digit x; if received, interpret it as a not-on-network signal and abort this dialing pattern (does not fail it) |
| #60 | Return to the default DTMF dialing speed |
| #61 | Use the secondary DTMF dialing speed |

For all values of x and y, * has a value of 11 and # has a value of 12.

At the start of every dialing pattern, the dialing speed is reset to the default setting. When a #61 is encountered, that speed is changed to the secondary setting. This will remain in effect throughout the rest of the dialing pattern unless a #60 is encountered, which restores the default dialing speed.

If a steady tone is received continuously for a length of time set by the #1 command, operation proceeds to the next command within the dialing pattern. If the time limit is reached without receiving the tone, then the current dialing pattern is aborted. For a local dialing pattern (1), the attempt will indefinitely be retried; for other dialing patterns, the next dialing pattern in the selected route is tried. If the next pattern is not a

repeat of the last  dialing pattern, the aborted dialing  pattern is marked as failed.

The #5 command is used as the last element  of a pattern for an OCC which provides a  not-on-network signal.  The  dialing pattern is  aborted, but  not marked as failed, if this signal is received.


Examples:

1.  Load  dialing  pattern  2 for use  with direct  dialing (DDD): wait  for dialtone, dial 1,  and if the telephone number is  within the local area code, send 7 digits; otherwise, send 10 digits.

    (*) RBP (098947*) SYSBP (3)(2 #121 1 #3* #*)
                SYSBP     Hangup

2.  Load dialing pattern  3 for use  with an  OCC  which  has  access  number 555-1212;  requires  first  an  authorization  code  of  7654321;  a  10-digit telephone number; and a 2-digit billing code.

    (*) RBP (098947*) SYSBP (3)(3 #121 5551212 #157 7654321 #30 #42 #*)
                SYSBP     Hangup

(4) Routes

Each route is a list of dialing patterns which are to be used to place a type of long distance call. A maximum of twelve routes is permitted, one for each DTMF digit. A valid route sequence is one of the following:

(4)(0 xxx)           Set the number of minutes to retain dialing
                     pattern failed statuses, xxx = 000-255
(4)(1 x y...y 1)   Create route x as a list of dialing patterns
                     (y represents a dialing pattern)


The first option is used to prevent further calls from attempting to place calls with an OCC which is not able to handle calls. A fixed time period is set after which the failed dialing pattern is released; the next call which requests its use will attempt to use that carrier.

When creating a route, all dialing patterns may be utilized except dialing pattern 1, which is reserved for local calls.


Examples:

1.  Set the failed time to 25 minutes:
    (*) RBP (098947*) SYSBP (4)(0 025)
                      SYSBP     Hangup


2.  Set route 1 to use dialing pattern 3 twice, 4 once, and 2 once; set route 2 to use dialing pattern 2 once:
    (*) RBP (098947*) SYSBP (4)(1 1 3342 1)
                      SYSBP (4)(1 2 2 1)
                      SYSBP     Hangup


(5) Area Codes

A list of area codes and long distance routes can be entered with this option. If a match is not found, route 1 is used. A valid area code sequence is as follows:

(5)(wxy z)     w=2-9; x=0-1; y=0-9, forming an area code;
                 and y is a route


Example:

1.  Set area code 301 to use route 3; 212 to use 4; 202 to use 5; 617 to use 3; 800 and 900 to use 2:
    (*) RBP (098947*) SYSBP (5)(301 3)
                      SYSBP (5)(212 4)
                      SYSBP (5)(202 5)
                      SYSBP (5)(617 3)
                      SYSBP (5)(800 2)
                      SYSBP (5)(900 2)
                      SYSBP     Hangup

(6) Self-Test

   The self-test functions are provided for factory testing and diagnosis of any possible on-site failures. A valid self-test sequence is one of the following:

   (6)(1)      EPROM checksum test:  if passes, a PRGBP is returned;
               if fails, an error beep is returned
   (6)(2)      RAM read/write test:  if passes, a PRGBP is returned;
               if fails, an error beep is returned
   (6)(3)      DTMF generator and receiver test:  all 16 DTMF tone
               pairs are generated and detected.  If all pass, a PRGBP
               is returned; if one fails, an error beep is returned


   The response can be commanded by factory personnel to be either a DTMF "1" (pass) or "0" (fail) instead of PRGBP and ERRBP.


(7) Information Recall

   Several parameters can be read out of the internal memory of the dialer. These are returned in Morse code. A factory mode exists to generate DTMF digit outputs to replace the Morse. A valid information recall sequence is one of the following:

   (7)(10)     read the overall number of speed memories in use
   (7)(11)     read the number of free bytes remaining for speed
               memory storage (local numbers require 6 bytes;
               long distance numbers, 7 bytes).
   (7)(1*)     Recall entire list of speed numbers.  Send the user
               number, speed number, and telephone number for each
   (7)(21)     Read the number of free bytes for storage of dialing
               patterns, routes, and area codes


   If the output mode is in the DTMF mode, a DTMF "A" appears after the user and speed dial numbers in the 1* command; a "*" appears after the telephone number for each entry.


Examples:

1. Read the number of speed dial numbers currently stored in the dialer:
      (*) RBP (098947*) SYSBP (7)(10) number read back
                        SYSBP      Hangup

2. Read the amount of free space available for speed dial numbers:
      (*) RBP (098947*) SYSBP (7)(11) number read back
                        SYSBP      Hangup

(8) Debug

    Entry into this mode is normally locked out. It can be unlocked by factory personnel. A valid debug sequence is one of the following:

| | |
|---|---|
| (8)(0 nnnn) | Read memory address nnnn |
| (8)(0 #) | Read next memory address |
| (8)(1 nn) | Write nn into the last memory byte addressed and advance to the next memory address; if the memory is not correctly changed, supply ERRBP |
| (8)(20) | Set all outputs to Morse code |
| (8)(21) | Set all outputs to DTMF digits |
| (8)(3*) | Call the last memory address as a subroutine |

    In the above commands, n is a hexadecimal nibble according to the following interpretation:

        DTMF 0-9 = Hexadecimal 0-9
        DTMF *1-*6 = Hexadecimal A-F
        DTMF # = Invalid

## 7. SAMPLE OCC DIALING PATTERN PROGRAMMING

In order to place a call over an OCC through a dial-up line, it is necessary to first place a local telephone call to the carrier's access number. One or more rings may occur before the switching equipment answers the call and provides a ready tone. It is necessary to wait until this occurs before transmitting any further information. Care must be taken so that the ringback tone does not falsely trigger the ready tone detector, yet the ready tone must reliably trigger the detection circuitry. Ringback tone lasts for two seconds, and is quiet for four seconds. The detection circuitry within the QUIK CALL 2000 is sensitive to any tone frequency between 350 and 475 Hz. By requiring the detection of ready tone to last more than two seconds, it will reliably ride through the ringback signal.

The #1 command in the dialing patterns can be set to listen for tones lasting any increment of 1/2 second. It is generally sufficient to set this period to 2.5 seconds. It is further required that the maximum length of time to wait be selected. This is programmable from one to twelve rings, since the value is set in increments of six seconds. It is up to the user to determine how long he is willing to wait for a particular carrier to respond before advancing to the next route. If more than one OCC is programmed, it makes sense to set this value to no more than five rings; if only one carrier is available, and the only second choice is to direct dial at a significant monetary loss, a longer wait is reasonable.

In the examples given below for particular OCC's, it is assumed that only one OCC is being used. Route 1 is programmed for the OCC, and route 2 is programmed for direct dial. All programming information required to permit the carrier to be used is given.

### Telesaver

The Telesaver switch expects to receive an authorization code after the ready tone is returned. After this code is received, a single beep tone is sent to so indicate. An area code and telephone number are expected next; when received, a double beep is returned. For customers with billing codes, the code is expected at this time, appended with a "*" to expedite call processing. One to five digits may be used as the billing code, as long as that number has a value between 1 and 32767 (inclusive). This permits the * NEW BC * option to be used to great advantage for cost allocation to case or client numbers, which are often greater than two digits in length.

Examples:

1.   Local Access Number = 555-1212; Authorization Code = 654321; No Billing Codes; Mode 3; two digit user number

```
(*) RBP (098947*) SYSBP (1)(21*)
                  SYSBP (2)(20)
                  SYSBP (3)(3 #121 5551212 #157 654321 #21 #30 #*)
                  SYSBP (4)(1 1 332 1)
```

```
                    SYSBP  (4)(1 2 22 1)
                    SYSBP  (5)(800 2)
                    SYSBP  (5)(900 2)
                    SYSBP     Hangup
```

2.   Local  Access  Number = 555-1212; Authorization  Code  =  654321;  Billing
Codes; Mode 4; two digit user number

```
(*) RBP (098947*)  SYSBP  (1)(21*)
                    SYSBP  (3)(3 #121 5551212 #157 654321 #21 #30 #21 #4# * #*)
                    SYSBP  (4)(1 1 332 1)
                    SYSBP  (4)(1 2 22 1)
                    SYSBP  (5)(800 2)
                    SYSBP  (5)(900 2)
                    SYSBP     Hangup
```

ITT City Call

    City Call expects the  area code and  telephone  number upon detection of
the  ready tone, followed  by  the  authorization code.  Billing codes are not
available.

Example:

1.  Local Access Number = 555-1212; Authorization Code = 7654321; Mode = 3

```
(*) RBP (098947*)  SYSBP  (1)(21*)
                    SYSBP  (2)(20)                          #21
                    SYSBP  (3)(3 #121 5551212 #157 #30 7654321 #*)
                    SYSBP  (4)(1 1 332 1)
                    SYSBP  (4)(1 2 22 1)
                    SYSBP  (5)(800 2)
                    SYSBP  (5)(900 2)
                    SYSBP     Hangup
```

Sprint

    The Sprint equipment  requires  the  authorization code  after  the ready
tone, followed by  the area code and telephone number.  If  billing codes are
used, two digits are sent at the end.

Example:

1.   Local Access Number =  555-1212;  Authorization Code = 654321; No Billing
Codes; Mode 3

```
(*) RBP (098947*)  SYSBP  (1)(21*)
                    SYSBP  (2)(20)                          #21
                    SYSBP  (3)(3 #121 5551212 #157 654321 #30 #*)
                    SYSBP  (4)(1 1 332 1)
```

```
                 SYSBP (4)(1 2 22 1)
                 SYSBP (5)(800 2)
                 SYSBP (5)(900 2)
                 SYSBP      Hangup
```

2. Local Access  Number  =  555-1212;  Authorization Code  =  654321;  Billing Codes; Mode 4

```
(*) RBP (098947*) SYSBP (1)(21*)                         #21  #21
                 SYSBP (3)(3 #121 5551212 #157 654321 #30 #42 #*)
                 SYSBP (4)(1 1 332 1)
                 SYSBP (4)(1 2 22 1)
                 SYSBP (5)(800 2)
                 SYSBP (5)(900 2)
                 SYSBP      Hangup
```

Western Union

    Western  Union requires the authorization  code first, and the  area code and telephone  number second after  providing  the ready tone.  Billing codes are not supported.

Example:

1.  Local Access Number = 555-1212; Authorization Code = 654321; Mode = 3

```
(*) RBP (098947*) SYSBP (1)(21*)
                 SYSBP (2)(20)                           #21
                 SYSBP (3)(3 #121 5551212 #157 654321 #30 #*)
                 SYSBP (4)(1 1 332 1)
                 SYSBP (4)(1 2 22 1)
                 SYSBP (5)(800 2)
                 SYSBP (5)(900 2)
                 SYSBP      Hangup
```

MCI

    MCI requires  the  authorization code followed  by  the  area  code  and telephone  number when  the ready  tone is received.  Billing  codes  are  not supported.

Example:

1.  Local Access Number = 555-1212; Authorization Code = 54321; Mode = 3

```
(*) RBP (098947*) SYSBP (1)(21*)
                 SYSBP (2)(20)                           #21
                 SYSBP (3)(3 #121 5551212 #157 54321 #30 #*)
                 SYSBP (4)(1 1 3322 1)
                 SYSBP (4)(1 2 22 1)
```

```
SYSBP (5)(800 2)
SYSBP (5)(900 2)
SYSBP     Hangup
```

## Special Considerations

Occasional users may find that the local telephone company central office is slow, and cannot handle rapid DTMF signalling. In these instances, the default dialing speed should be slowed down. However, for OCC calls, once the local access number has been dialed, rapid DTMF signalling should present no problem if the OCC can handle it. In this case, the secondary DTMF dialing speed should be used in the dialing pattern to speed up the call.

The QUIK CALL 2000 has no special provision to permit dialing an OCC's local access number, sending the authorization code and turning the OCC over directly to the user. There is generally no need to do so, since the dialer is a true store-and-forward unit. Should there be some special feature that the OCC provides which would require direct access, a special speed number can be set up to perform this function. Pick an area code which is not assigned (200, 300, 400, 500, 600, and 700 are good choices), and program a speed number using this area code; it matters not what the telephone number selected is. Create a route specifically for that area code, and enter that area code to select that special route. Provide a special dialing pattern for that route which simply dials the local access number and sends the authorization code. All the user need do is recall that speed number.

## 8.  ORDERING AND INSTALLATION

The  QUIK  CALL  2000  provides  service to all stations  on  all  equipped central office lines or trunks.  The QUIK  CALL  2000 may be ordered in various central office line capacities by suffixing the line requirement to  the model number e.g. QC-2000-1 for one central office line, QC-2000-2 for two, etc.

The QC-2000-1  consists  of a Control Module  equipped with one QC-2000-C Line  Card.  This  unit will  service  one central  office  line.  To expand service to more than one central office line, a QC-2000-M Interface  Module is needed for each group of lines  up to eight.  In addition, one QC-2000-C  Line Card for each additional central office line is required.

When multi-line units are  ordered  initially,  all  necessary components are furnished to provide service for the  specified  number of  central office lines.  Each module, designed  for wall  mounting, is  provided with  a beige plastic cover.  The system  is powered  by  117 volts (60 Hertz) AC.  Internal to the QUIK CALL 2000 is a standby  battery.  In the event of commercial power failure,  the battery prevents loss of  stored  speed  numbers  and  system parameters.

Installation

The QC-2000-1 is installed by mounting securely to a wall using two screws through holes provided. The modular cord is plugged into the QC-2000 Line Card and the other end is plugged into the RJ-31X jack, not supplied. The jack must be wired as follows:

Pin 1 -- Ring lead to customer equipment
Pin 4 -- Ring lead of telephone line
Pin 5 -- Tip lead of telephone line
Pin 8 -- Tip lead to customer equipment

In this configuration, if the modular plug is removed from the RJ-31X jack, the customer equipment is automatically cut through to the telephone line, and operation is completely normal. For this reason, when connecting a line to the dialer, first plug the modular cord into the Line Card, and then into the RJ-31X jack; follow the reverse procedure for removal. In this way, telephone calls will not be disrupted.

To expand the QC-2000-1 for multi-line service, mount the QC-2000-M Interface Module next to the QC-2000 Control Module. Plug the ribbon cable into the connector from which the Line Card was removed. Additional Line Cards may now be inserted into the Interface Module. Connect a modular cable between each QC-2000-C Line Card and the RJ-31X jack.

The green light emitting diode indicator lamp mounted inside the Control Module illuminates when the dialer is being used. This lamp is visible through the slot on the plastic cover. If the indicator is out, the AC power can be removed without fear of disrupting service.

No maintenance is required. If the unit fails to operate properly, call the salesman who will verify that programming has been performed properly. If the unit is defective, return it to the factory for repair or replacement. Do not attempt to repair the unit in the field. Only qualified representatives of METRO TEL CORP. may attempt to do so. Warranty may be voided if repairs are attempted. Send repairs to:

METRO TEL CORP.
15 BURKE LANE
SYOSSET, NY 11791
ATTN: REPAIR DEPT.