GE Mobile Communications
PC Programming

MVS™

For
IBM PC/XT
Or True PC Compatible

Programming Guide

TQ-3318
V3

CHANGE NOTICE NO. 4

PC Programming Software TQ3318, Version 3, corrects minor print routines.

1. Make a backup (working) copy of the PC Programming Software, Version 3.

2. Refer to Chapter 2 for installation and program entry procedures.

3. Remove title page and replace with new title page.

4. File this Change Notice No. 4 immediately following the title page in the binder.

5. Pages changed by Version 3 software are indicated by a V3 below the TQ number (3318), located at the top of the page.

ERICSSON

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CHAPTER 1
PREPARATION

INTRODUCTION

First, General Electric would like to welcome you to the exciting world of mobile communications. It is our belief that there is no equal to GE products and we, the General Electric Mobile Communications Division have made a total commitment to our customers to ensure that product satisfaction and reliable service is our number one priority.

Today, mobile communications technology is keeping pace with the giant steps presently being attained by the computer industry. The two worlds have made a partnership and we are extremely proud of the innovative and imaginative advancements that our engineers, programmers, and scientists have provided for our mobile communications products.

The MVS Synthesized Mobile Radio has many of these state of the art advancements incorporated into it, making an extremely high quality, high performance, synthesized, two-way, FM communications unit.

With regard to this particular manual, direct your interests to the programmable features of the MVS Synthesized Mobile Radio and their relationship to servicing. The programmable features of this radio help the service technician to quickly prepare and retain all the information required to maintain the particular radio personality which has been chosen.

Specifically, this manual is designed to present you with all the necessary information required to

A. Install the Serial Programming Interface Module

B. Program the personality of the MVS Synthesized Mobile Radio

C. Test and evaluate program information

D. Answer questions regarding program directions

As you are using your personal computer in other facets of your work, the intent of this manual is to facilitate ease of programming. We encourage you to study this manual thoroughly to its conclusion prior to programming the radio in an actual service situation.

Though the program contains prompts, which appear on the screen, there are certain keyboard actions which may be required which do not appear and which are only contained in this program manual. Therefore, you are cautioned to work slowly and carefully in the beginning to preclude errors which might degrade the quality of the radio personality and possibly require further detailed and time consuming efforts on your part to correct.

PC PROGRAMMING SOFTWARE REQUIREMENTS

This MVS PROGRAMMING SOFTWARE requires the use of specific hardware and software without which the PC Programming Software may not be executed.

They are as follows:

A. IBM PC/XT/AT or any true compatible

B. One diskette drive

C. 512K Internal RAM

D. A serial port

E. A parallel port

F. Serial Programming Interface Module TQ-3310

G. MVS Mobile Radio Programming Cable TQ-3315

H. RS232 Cable

I. Printer (optional but recommended)

BACKUP SOFTWARE

The MVS Synthesized Mobile Radio PC Programming Software is provided to you on a double sided double density 5-1/4 inch diskette. As this diskette is very sensitive and fragile it should be handled with extreme care and stored in a secure area.

We recommend that upon receipt of your diskette, that you copy the original MVS Synthesized Mobile Radio PC Programming Software Diskette to another diskette or fixed disk and store the original in a safe place. This ensures the availability of an accurate program should a copy fail during program applications (refer to **APPENDIX A** for additional information).

DISKETTE HANDLING

While working with your diskette you may want to consider the following handling procedures:

A. Always store your diskette in its envelope.

B. Insert the diskette into the drive carefully.

C. Use only felt tipped pens to write on diskette labels.

D. Store your diskette at a comfortable room temperature.

E. Refrain from touching the recording surface.

F. Do not bend the diskette.

G. Do not allow any form of liquid to come in contact with the diskette surface.

H. Keep diskette away from magnetic force fields as found in electronic equipment.

If you follow these very simple common sense guidelines you will receive long service from your diskette.

INSTALLATION AND CONFIGURATION

Software Management

All MVS Programming Software resides on the fixed disk or diskette. To reference and access this software you are first required to install this software on the hard disk. This hard disk set up is accomplished by following the procedures below.

To begin, create a sub-directory. When the C:\> prompt appears on your screen, insert the MVS PC programming diskette into drive A. Then type:

A:

At the A:\> prompt type:

MKDIR C:MVS and press <Enter>

Then, type:

A:\MVS

COPY A: C:\MVS and press <ENTER>

Execution of the copy task begins and the personal computer displays the file names as they are copied into memory.

Once the PC programming software is located on the fixed disk, a path must be devised. This is accomplished by typing the following:

PATH = C:\>MVS and press <Enter>

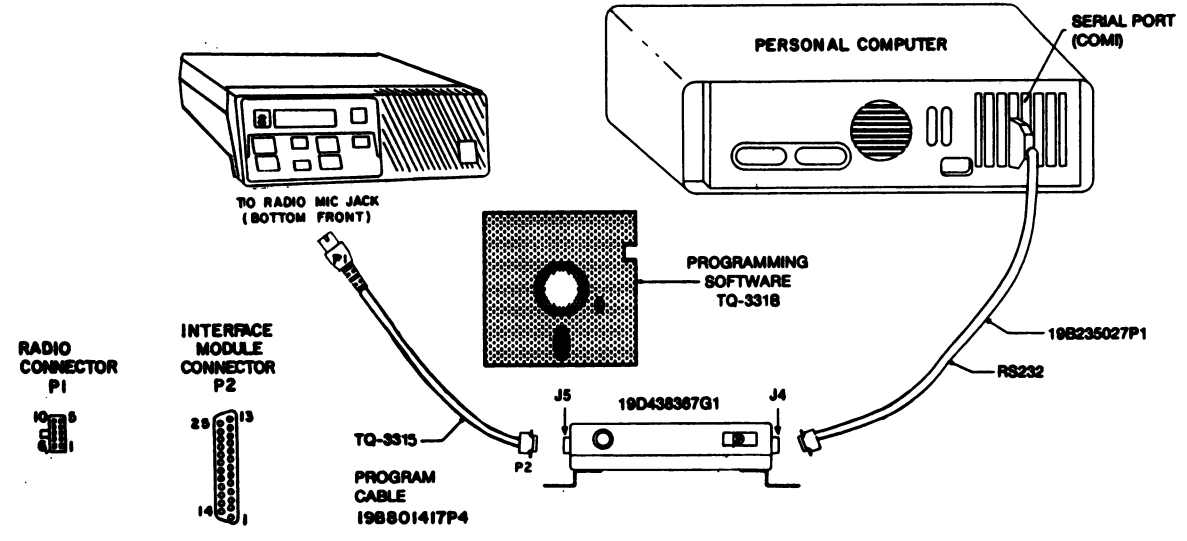
You now remove the orginal MVS diskette from disk drive A and store it in a safe secure place. Your working copy is now held on the hard disk ready for you to call at any time.

Personal Computer

Your personal computer, dependent upon its manufacturer, has certain unique operating characteristics which make it different from other computers of similar capability. We advise you to become fully conversant with your computer's operating characteristics by referring to the manufacturer's operating guide

Printer Option

We recommend that you have a printer as one of your output devices, but emphasize that it is not required for the MVS Synthesized Mobile Radio PC Programming Software to successfully operate.



CONNECTION CHART FOR TQ-3315		
WIRE COLOR	FROM	TO
GREEN/BLACK	P2-11	P1-9
RED/BLACK	P2-12	P1-8
WHITE/BLACK	P2-6	P1-7
BLUE	P2-7	P1-6
ORANGE	P2-3	P1-5
GREEN	P2-16	P1-4
RED	P2-14	P1-3
WHITE	P2-6	P1-2
BLACK	P2-25	P1-1
ORANGE/BLACK	P2-15	P1-10
BLACK	P2-9	P2-13

Figure 1 - Programming System Hook Up

Computer Equipment Assembly

Connect all peripheral equipment to your computer prior to configuring the MVS PC Programming Software items. Remember to refer to the operating manuals of each device for correct installation procedures. However, if your system is established, check to see that you have all the equipment necessary to execute the program. Isolate all cables connecting computer to devices to prevent tangling, interference and damage.

Serial Programming Interface Module Configuration

Now that the preceding is accomplished, you are ready to configure the MVS PC Programming Software Equipment.

First, review Figure 1, and then at your computer locate a serial port, normally located on the rear of the base. Of course, this is dependent upon the design of your computer so refer to the computer operator's manual for directions. The IBM PC/XT/AT systems support up to two serial ports. Please note at this point that the MVS PC Programming Software only communicates with the radio and its interface on the serial ports designated as COM1 or COM2. Your computer references assist you in determining which serial port has been so designated. Once located, examine the keyed plug on the RS232 cable for the correct keyed end and insert it carefully into the appropriate serial port on the computer. Then connect the other end into receptacle J4 on the MVS Serial Programming Interface Module. Carefully check to ensure that plugs are fully seated in the receptacle and if retaining screws are included, that they are carefully tightened to firmly hold the plug in place. Should the plugs not seat correctly to its receptacle remove the plug and examine the pins, first to determine if the proper plug was inserted, and secondly to determine if pins are aligned and undamaged. Damaged pins and broken connections may result in inability to program the radio.

The second step in this configuration is just as simple as the first. Locate the MVS Mobile Radio on your work area in a convenient place. Then connect the MVS PC Programming Software Cable to the microphone jack on the bottom of the radio. As depicted in Figure 1, the MVS Program Cable is inserted into receptacle J5 on the face of Serial Programming Interface Module. Again, you should ensure that the plug is fully seated in its receptacle. The first phase of the program, hardware installation, is completed and now all of the hardware items are ready awaiting your first program command.

You should be aware of what type computer is available to you to service the MVS Radio and make yourself familiar with how to operate that particular disk operating system (DOS).

SOFTWARE PREPARATION

To protect against loss, damage, or destruction of your MVS PC Programming Software, we previously recommended that you copy the original diskette and then store it in a secure place, thus ensuring that you have an accurate working program readily available. The copy that you have made is used for your daily service tasks and is referred to as the "working copy."

Also we discussed that you might encounter a number of computer systems with different disk drive systems. There are the single diskette system, the dual diskette system, and the fixed or hard disk system. Basically the steps in making a "working copy" for each system is the same, but there are some variations you should be aware of. If you have any doubts concerning the procedures, the steps required to make a copy of your MVS PC Programming Software Diskette are contained in Appendix A.

MVS PROGRAM CHARACTERISTICS

At this point, you have connected all the hardware equipment to the computer, you have a working copy of the MVS PC Programming Software, and you are now anxious to see where this technology is going to lead. But let's take a few moments to discuss some important parameters, or if you like characteristics, which will serve you well when executing the program.

The PC Programming Software simplifies your service assignment by utilizing a sophisticated scheme of program paths and screen presentations. There are four types of transition screens that you should be familiar with. These screens enable you to select a path for your PC Programming Software execution. Each screen is divided into three distinct areas. They are:

- Title
- Work Area
- Active Function Keys

The following are the major categories of PC Programming Software screens:

Personality Directory Screen

The first PC Programming Software screen presentation is the Personality Directory Screen. This screen lists the file names of all stored MVS Radio personalities presently maintained in this special directory.

Set Up Screen

The Set Up Screen permits you to specify the number of channels and the frequency band for a specific MVS Radio.

Channel Definition Screen

This screen simplifies the process of revising a particular radio personality allowing immediate access to all current MVS personalities contained in the MVS Personality Directory.

Utility Screen

The Utility Screen provides you the ability to execute infrequently used PC Programming Software functions such as changing directories, changing file extensions, and deleting files.

Screen Windows

A window is a section of a screen that displays previously stored information, enables programming alternatives, or accepts data currently being entered during a service assignment. There may be more than one window to a particular screen. It can be identified by its highlighted outline within the screen presentation. In the event that there is more than one window to a screen, borders may overlap.

There are two types of windows. The passive window is displayed but is unavailable for program execution. The active window is available for data entry or revision and can be identified by its highlighted borders. There may be up to three windows displayed at a time, only one of which is active. In the case that windows have overlapping borders, the active window is presented in the foreground.

Like the screen, windows are divided into three distinct sections. They are:

- Window Title
- Work Area
- Prompt Line

The prompt line may be unfamiliar to you. It is printed information in the lower portion of the window defining in further detail the action to be taken in the work area.

Error Detection

The accuracy of information entered into the PC Programming Software is of critical importance. To ensure that correct information is entered into data fields, a validity check operation has been built into this program.

Before the PC Programming Software allows you to execute further data entry, it reviews and validates the current data entry. In the case of incorrect information, a message appears across the screen indicating the problem and the cursor remains stationary at the error field until corrective action is undertaken.

Although the validity check is a sophisticated way of ensuring that no errors find their way into a radio personality, it should not be assumed to be foolproof. You are cautioned to check the accuracy of your work prior to departing a particular screen or window.

PC Programming Software Assistance

During the execution of the PC Programming Software, you may find a point at which you require assistance. This software package maintains help files on the PC's fixed disk or on the diskette. By pressing the Help Key during the execution of a particular screen, the software reads the appropriate information to assist you and displays it on the screen.

You are encouraged to be totally familiar with the operation of this software, as the assistance files are limited to specific areas of information and may not cover all details involved in the execution of a specific operation.

Remember that your most useful source of information is this manual. Keep it available at all times.

CHAPTER 2
STARTING UP

INTRODUCTION

The hardware is configured and you now have a working copy of the MVS PC Programming Software. If you are familiar with the various screens used in entering the data for the MVS Mobile Radio, you may skip to the section **BASIC PROGRAMMING PROCEDURE**. However, if you are not familiar with the type of data to enter and the various screens, be sure to read and study those instructions under the heading **MVS INTRODUCTIONS TO SCREENS** (refer to the Table of Contents).

You may enter data for programming the radio using the PC software without turning on the radio. However, before you can download this data or read the data from a previously programmed radio, the radio must be turned on. Be sure that you have checked the serial number and model of the radio to ensure that you are servicing the correct radio. When you are not using the radio for MVS Radio program operations, ensure that it is turned off.

PROGRAM INITIALIZATION

When you turn on your personal computer, it begins an initialization routine which every system must go through to prepare for operation. During the initialization of your system, the DOS program is loaded into memory. Remember that DOS is the interpreter between your keyboard actions and the capabilities of the MVS PC Programming Software.

PROGRAM ENTRY

The system is now ready for your first MVS PC Programming Software command.

After inserting your PC programming diskette, you type the following:

MVS <ENTER>

The MVS PC Programming Software is loaded into memory and an introductory screen appears identifying the program.

KEYBOARD ORIENTATION

It is important for you to be thoroughly familiar with the keyboard of your personal computer system. As each keyboard is different, depending upon the manufacturer, keys required to execute the MVS PC Programming Software will have to be located and identified.

Key Definitions

The PC Programming Software provides five categories of operational keys. They are:

- Function Keys
- Character Keys
- Editing Keys
- Movement/Acceptance Keys
- Special Usage Keys

Function Keys

Function keys are defined as those keys, normally found on the left-hand portion of your PC's keyboard with the prefix F. There are two types of function keys:

Active
and
Inactive

Inactive function keys have no operational capabilities during the execution of a screen or window where they have been disabled by the software. During the execution of the PC Programming Software, you note that on the lower portion of each screen where the function keys are listed, inactive function keys are not labeled.

Active function keys, on the other hand are labeled, and by pressing a specific function, the software executes the action delegated to that particular key.

The purpose of a particular function key is dependent upon the screen that its labeled operation is related to. Simply, a function key may be labeled differently from one screen to the next. Be sure that you fully understand the purpose for the function key prior to pressing it.

The function keys are alpha-numerically labeled F1 - F10. Each function key can take on one of the following software services

1. Do - **Do** Function Key **(F1)**: The desired operation is to be executed. During the execution of the software, the program may query you as to whether you wish to complete an operation. By pressing the function key labeled Do, the operation is completed.
2. Set Up - **Setup** Function Key **(F1)**: Pressing the SetUp Function Key advances the execution of the program to the SETUP Screen enabling you to select the radio type and frequency range.
3. Switch - **Switch** Function Key **(F1)**: This key enables you to select another window to be active.
4. Change - **Change** Function Key **(F2)**: The desired operation is to revise or change the personality or data presently highlighted on the screen.

5. Abort - **Dont** Function Key **(F2)**: Pressing this function key terminates the current process and returns control to the Utility Screen without changing the directory.

6. Change Directory - **Dir** Function Key **(F3)**: For one reason or another, you may wish to leave one directory and move to another. The change directory feature enables this service without you having to exit, change directories, and then reenter the program.

7. Frequency Select - **Freq** Function Key **(F3)**: This key allows access to the frequency summary screen.

8. Utility - **Utlity** Function Key **(F3)**: By pressing this function key, you are able to access the Utility Screen. This screen permits a means of enabling infrequently used functions which do not directly relate to programming of a particular radio.

9. File - **File** Function Key **(F4)**: This function key is subordinate to the Print Function Key. By pressing this key the data is directed to a specific output file.

10. New - **New** Function Key **(F4)**: By pressing the function key labeled NEW, you indicate that the next desired operation is to create a new definition or personality.

11. Text Select - **Text** Function Key **(F4)**: This key enables use of the Text Window. This screen permits you to indicate any information in excess of the normal radio personality data to include the software revision number and the last date which a particular radio or file was performed.

12. Program - **Progrm** Function Key **(F5)**: By pressing this function key, you indicate that you wish to write the personality stored in memory to the radio.

13. Screen - **Screen** Key **(F5)**: This key is also subordinate to the Print Function Key. In this case, the data is directed to the screen for immediate presentation.

14. Channel Select - **Chan** Function Key **(F6)**: This key enables you to view channel data in the far right window.

15. Print - **Print** Function Key **(F6)**: Select when you wish to produce a hard (paper) copy of the personality data stored in memory.

16. Read Select - **Read** Function Key **(F6)**: Pressing this key enables the PC programming software to read a specific radio personality into a file.

17. Type 99 - **T-99** Function Key **(F6)**: This key enables you to view Type 99 information in the far right window.

18. Extension Select - **Ext** Function Key **(F7)**: This key enables the Extension Select Window. You may then specify which files are to be displayed in the Personality Directory Window.

19. Option Select - **Option** Function Key **(F7)**: By pressing this key, you are able to create or modify radio options.

20. Delete - **Delete** Function Key **(F8)**: Pressing this key allows you to delete data, definitions, or personalities. Caution: This operation once executed is unrecoverable. Data, once deleted, is destroyed.

21. Tone Select - **Tone** Function Key **(F8)**: This key allows you to create or modify the Type 99 tone table.

22. Help - **Help** Function Key **(F9)**: Selected whenever you have a question about the execution of an operation. This is always the F9 key no matter which screen is active.
23. Back - **Back** Function Key **(F10)**: This key is pressed when you wish to return to a previous window thus making it active again for further revisions or data entry. It may also, in some cases, return control of the program to the Entry Screen.
24. Exit - **Exit** Function Key **(F10)**: When selected, the program is terminated and you are returned to the control of your disk operating system (DOS).

Character Keys

Character keys are used to enter data into a field. When pressed, the software will insert that character in the field position designated by the cursor and then advance to next available character position.

Character Keys for the purposes of this PC Programming Software package are:

- Alphabetic: (a - z) and (A - Z)
- Numeric: (0 - 9)
- Special Characters: ' ~ ! @ # $ % ^ & * ( ) _ - \ ¦ [{ }] ? / < >

Editing Keys:

Editing Keys manipulate the data within a field. These keys are:

Left Arrow: Each time the arrow is pressed it moves the cursor one character to the left until the leftmost position is reached.

Right Arrow: Each time the arrow is pressed it moves the cursor one character to the right until the rightmost position is reached.

Backspace: As the cursor moves to the left, the character immediately to the left of the cursor is deleted.

Insert: This key toggles the insert operation on and off. The insert operation enables you to insert a character or a string of characters without overwriting any previously entered information.

Cap Lock: Enabled, the Cap Lock Key writes all alphabetic characters in capitalized letters.

Control/Left Arrow: When both keys are simultaneously pressed, the cursor is moved to the leftmost character in the field.

Control/Right Arrow: When both keys are simultaneously pressed, the cursor is moved to the rightmost character in the field.

Control/Backspace: By simultaneously pressing both keys all characters to the left of the cursor are deleted and then all characters opposing the deletion are moved right or left to fill the space.

Control/Delete: Simultaneously pressing these two keys deletes all characters under and to the right of the cursor.

Movement and Acceptance Keys

These keys enable movement or cursor positioning on the screen. They are also used to indicate an end of input in the current field.

Enter: The data entered into the present field is accepted and the cursor is advanced to the first character position in the next field.

Up Arrow: The data entered into the present field is accepted and the cursor is returned to the first character position in the previous field.

Down Arrow: The data entered into the present field is accepted and the cursor is advanced to the first character position in the next field.

Home: Moves the cursor to the first character position in the next widow.

End: Moves the cursor to the final character position in the window.

Tab: Toggles a predetermined field between selections such as a Yes or No response.

Special Usage Keys

Two keys are represented in this category.

Page Up (Pg Up): Used to return to a previous page on the Help Screen. The Help Screen will retreat one page at a time until the beginning page is presented. This key is also used to toggle fields and change mode selections during user edit procedures.

Page Down (Pg Dn): Used to advance to the following page on the Help Screen. The Help Screen can be advanced one page at a time until the end page is presented. This key is also used to toggle fields and change mode selections during user edit procedures.

This concludes the section related to the keyboard. There are exceptions to the information presented in this section. Some screens, such as the Current Personality Screen, require that keys other than ones described above be used to move the cursor. On these screens, no editing features are available. As only a selection operation is necessary, the Left, Right, Up and Down arrows are sufficient to provide logical movement within the menu and the appropriate fields.

PROGRAMMER I/O OPTIONS

The MVS Mobile Radio PC Programming Software has the capability to store or retrieve MVS radio data. Essentially this means that as you execute the PC Programming Software to define the personality of a radio, the PC Programming Software stores the information. It also means that if you wish to save the personality of a radio, the PC

Programming Software has the ability to retrieve the information from the radio through the Serial Programming Interface Module and store it in memory.

It is important to remember the following in the simplest terms. Each MVS Mobile Radio contains a PROM (Programmable Read Only Memory) in which is stored the personality of the radio. A PROM can be reprogrammed innumerable times to reflect changing environments or changing customer preferences.

MVS MOBILE RADIO PC PROGRAMMING SOFTWARE WORK FOLDER

Prior to initiating any service assignment with a MVS Mobile radio it is important that you organize the procedures involved.

In this regard, we have prepared a work folder to assist you with organizing the data required to complete a service assignment. An example of the complete work folder is found in Appendix B - MVS Mobile Radio PC Programming Software Work Folder.

Purpose

The function of this work folder is to ensure that all the information you require to complete your task is prepared and available to you as you enter keyboard data. Secondly, you are able to relate the information in the worksheet to a particular screen as each page is designed to provide all the information to complete a particular screen. Lastly, by maintaining your work folder for each radio, you are able to make individual changes on the worksheet and then to the radio without a great deal of effort.

If you are creating a new personality for the MVS Mobile Radio, the completion of the work folder is a good way to prepare you for data entry operations. Following the same approach as with a radio with existing data is also recommended. In the event a radio has an existing personality, ensure that you have completed the following:

1. Store the MVS Mobile Radio's present personality in a file.
2. Examine the key information which must be edited to accomplish the work assignment.
3. Identify specific data entry operations to edit existing information.

The MVS Mobile Radio PC Programming Software Work Folder is a collection of prescheduled and predetermined information which you use to program a particular radio. The work folder will direct you how to enter information. The important point for you to remember is that each page is related to a Data Entry Screen provided by the PC Programming Software. Once you have arrived at an appropriate Data Entry Screen, you need only to enter the information contained in the worksheet.

Default Values

The MVS PC Programming Software provides for predetermined values in a majority of the data fields contained in each data entry screen. Exceptions to this rule are fields

requiring variable names, dates, and serial numbers. These predetermined values, known as Default Values, are states of a programmable feature or features during normal operation of the radio. Normal operation of the radio is to be considered, the use of the radio without the capabilities of special or extended features. A service technician should be totally familiar with reason for a specific default value and should exercise extreme caution prior to changing these predetermined values.

Work Folder Procedures

We recommend that you complete each page of the work folder in sequential order. **NOTE:** It is a good idea to make additional copies of the worksheet provided in this manual for your actual programming data. In our discussion we will try to familiarize you with each worksheet so that you are able to picture the screen as it pertains to a particular worksheet in this work folder.

WORKSHEET A

The first page, Worksheet A, is titled

Channel Definition

MVS Mobile Radio data entered on this page is associated with data required on the Channel Definition Screen.

Before you begin completing data on this sheet, it is recommended that you fill in the titled spaces similar to those referenced below in the upper right-hand corner of the worksheet page. The worksheet examples contained in Appendix B are provided as a guide for you to formulate your own work folder standards. You may wish to copy these worksheets and modify them to suit your own needs

Service Facility _____
Service Technician _____
Date Radio Received / /
Date Service Completed / /
Radio Serial # _____

This information is helpful for record keeping purposes and future reference. To ensure that no sheets are lost, it is a good idea to complete each page in the same manner as prescribed for the first.

The first two columns are titled CHANNEL and MODE and are prenumbered 1 through 16 for each eight possible modes. The next columns labeled TX FREQ , TX CG , RX FREQ, and RX CG, refer to the transmitting frequency, transmitting channel guard, receiving frequency, and receiving channel guard for each channel. These columns require that you fill in the applicable frequency for each channel to be programmed in a particular radio.

It is essential to know that with regard to frequencies, you are required to select a frequency range from a menu provided by the PC Programming Software. A list of ranges

is provided for you in Appendix B on the last page of the work folder. The standard or tone channel guard frequencies are 67 to 210.7 Hz. Digital and inverted values are found in the Table of Acceptable Values found on the last page of the Work Folder.

The last two items on this worksheet require a Yes or No response. They are:

CCT Enabled?
Type 99 Enabled?

To enable either of these options simply respond Yes. The default response is No.

NOTE

Type 99 Tone cannot be accessed by programming alone. The proper switch module must be installed to allow this option.

WORKSHEET B

This worksheet is titled

Type 99 Data

and the information contained in it is related to the Type 99 pop up window contained on the Channel Definition Screen.

This first section of this worksheet contains the Tone Table and duplicates the Tone Table pop up window on the Channel Definition Screen. This table is executed by pressing the F8 during Channel Definition data entry. Any radio with Type 99 present and enabled has the ability to accomplish selective calling. A detailed discussion of Type 99 operation is found in your maintenance manual, but for purposes of PC Programming the Tone Table must be completed.

The Tone Table requires that tone frequencies entered are consistent with the tone sequence format desired. The tone frequency formats available are the default format (non-GE) and the GE format. The default tone frequency range is 288.5 to 1433.4 Hz and the GE format range is 517.5 to 997.5 Hz. Note the first response required in this table.

Is GE format desired?

Respond yes or no and move to the next section of the worksheet. Refer to your maintenance manual for a detailed discussion of both formats and the tone table.

The second section of this worksheet relates to the Type 99 window and requires responses directly related to the Tone Table above. For each channel prenumbered 1 through 16 (a 128 channel radio does not have Type 99) enter the applicable data:

Tone Table	1, 2, or 3
Individual Decode	Yes/No
Group Decode	Yes/No
Super Decode	Yes/No
Quick Decode	Yes/No

The default for all Yes/No responses is No. Refer to your maintenance manual for further information specific to the call formats listed above.

WORKSHEET C

This worksheet relates to the total radio personality. Though data from this worksheet is entered via a pop up window contained in the Channel Definition Screen, its specific data is common to all channels programmed. The following responses are required:

Carrier Control Timer

The Carrier Control Timer can be programmed to time out from 0.5 to 7.5 minutes in 0.5 second increments.

Hang after PTT Release

This option is most commonly referred to as Scan Hang afterPTT Release and concerns applications where transmissions are made while on-hook. Unless the hookswitch is disabled, an off-hook microphone always reverts the radio to the selected channel and stops scanning. If disabled, this option provides that the radio immediately resumes scan at PTT release. To disable this option a No response is required. Yes is the default.

Scan Hang Time (Secs)

This option is applied after the carrier on an active channel disappears and after PTT release. This option prevents momentary signal fades and allows time to respond to a received call. The scan hang time is normally 2 seconds but may be programmed within a range of 0.3 to 5 seconds in 0.1 sec. increments.

Scan for Channel Guard

The MVS radio normally stops scanning on an active channel with the correct Channel Guard. If you desire to scan for carrier squelch only, respond No.

On Hook TX Channel

This option allows programming to determine on which RF channel the radio will transmit while in SCAN and the PTT switch pressed. The choices are SEL CH (Selected Channel) and RX CH (Receive Channel). When no activity is detected, the radio will always transmit on the Selected Channel. But once channel activity is detected, the radio is programmed to transmit on the Selected Channel or the Channel on which the activty has been detected (RX Ch).

This option only concerns transmissions made while on hook.

P1 Channel Programming

There are three selections available to the programmer. They are as follows:

1 = Front Programmable
2 = Fixed Priority
3 = Selected Channel

Selections 1 and 3 require no further entry with regard to this option. Front programmable indicates that the operator selects the active channel using the SCAN and CHANNEL UP/DOWN switches on the front panel of the radio. Selected Channel, for this particular option, indicates the channel which is active. Only selection 2 requires more data. If you have selected Fixed Priority, you will then be prompted for the channel number you wish to be priority one.

This concludes the discussion of the MVS PC Programming Software Work Folder.

CHAPTER 3
MVS INTRODUCTION TO SCREENS

Screens for MVS radio personality programming consist of four major data entry screens as follows:

- Personality Directory Screen
- Set Up Screen
- Utility Screen
- Channel Definition Screen

The Set Up, the Utilities and the Channel Definition screens are all accessible from the Personality screen (refer to Figure 2). From each of these four screens "pop-up" windows are accessible for entering data related to the selected screen. Also, **HELP** messages are provided from any screen or any window by simply pressing the **F9 Help** function key.

From the Personality Directory Screen you can select an existing file or elect to create a new one. You then have the option of initiating one of the actions indicated by the function keys along the bottom of the screen. Only the function keys with labels are enabled.

If you choose the Set Up Screen you can specify the number of channels in the radio and the frequency band.

If you choose the Utilities Screen you can change directories, print a file, add or change a file name extension and delete a file.

If you choose the Channel Definition Screen by selecting from the Personality Directory Screen **F2 Change** or **F4 New**, you can specify channels and modes, which include main channel data such as transmit and receive frequencies, Channel Guard tones, Carrier Control Timer and Type 99 Tone. Up to four Type 99 tones in three tables can be specified. You can specify radio and scan options such as CCT time, hang after PTT release, scan hang time, scan for Channel Guard, on hook TX channel, mode and channel. From the Channel Definition Screen you can access a Frequency Summary window which summarizes all channel frequencies in the radio. There is also a window for storing text you might want to record.

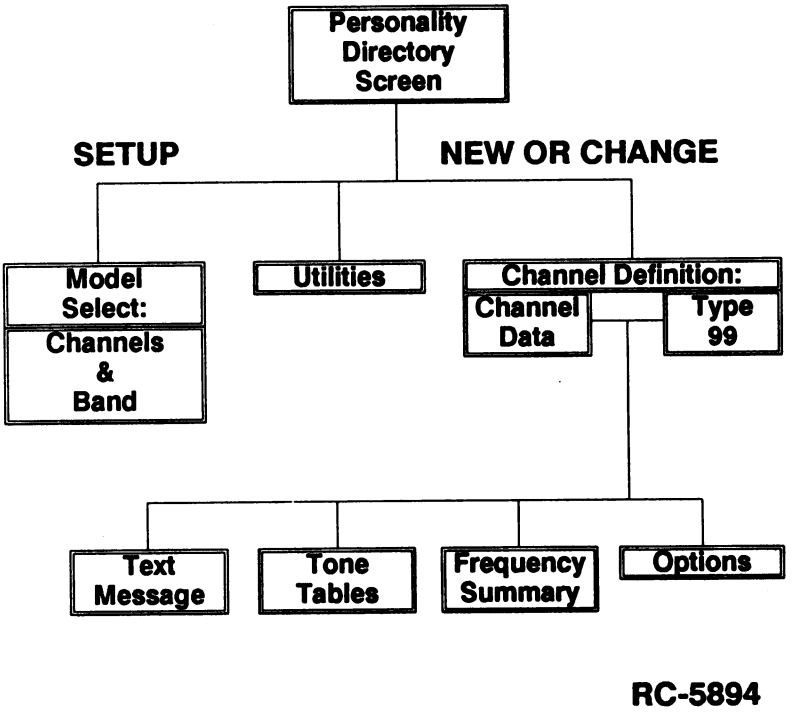


Figure 2 -Programming Flow Chart

SCREEN DEFINITIONS

PERSONALITY DIRECTORY SCREEN

When beginning the program, the Personality Directory Screen is the first screen displayed. This screen, as shown in Figure 3, lists the file names of all stored personalities in the selected directory.

You can select any particular file in the Directory Screen simply by using the right/left/up/down arrow cursor keys. The cursor keys move a highlighted bar, so that you know at all times which file is selected. Of all the function keys displayed along the bottom of the screen, only **F2 Change**, **F5 Progrm** and **F6 Read** apply to the selected file. Pressing either of these function keys causes the specified action to take place on the selected file.

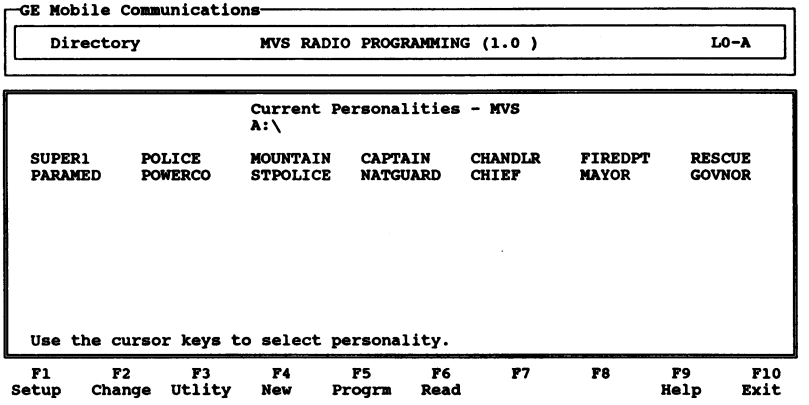


Figure 3 - Personality Directory Screen

Function Keys

Function key definitions along with a detailed description of each key for the Personality Screen are as follows:

F1 - Setup: Allows you to specify the radio model to be programmed, the number of channels and the frequency band.

F2 - Change: You can change a file. The file currently selected will be opened for editing.

F3 - Utlity: Allows you access to infrequently used functions such as **F3 Dir** (change Directory), **F6 Print**, **F7 Ext** (Extension) and **F8 Delete**.

F4 - New: You can create a new radio personality using the model created in the Set Up screen.

F5 - Progrm: Allows you to program a radio using the selected personality.

F6 - Read: Lets you read the personality from the radio into a file.

F9 - Help: Displays any Help messages.

F10 - Exit: Exits the Programming software.

Change Window

The change personality "pop-up" window is displayed when you select **F2 Change** from the current Personality screen (refer to Figure 4). This window asks for the file name of the personality to be edited. The default name is the file selected when F2 was pressed. Only function keys **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back** are enabled. When the desired personality has been identified, you can select **Do** to continue or **Dont** to cancel. Pressing **F2 Do** from this change window places you in the Definition Screen and will be covered later in this publication.

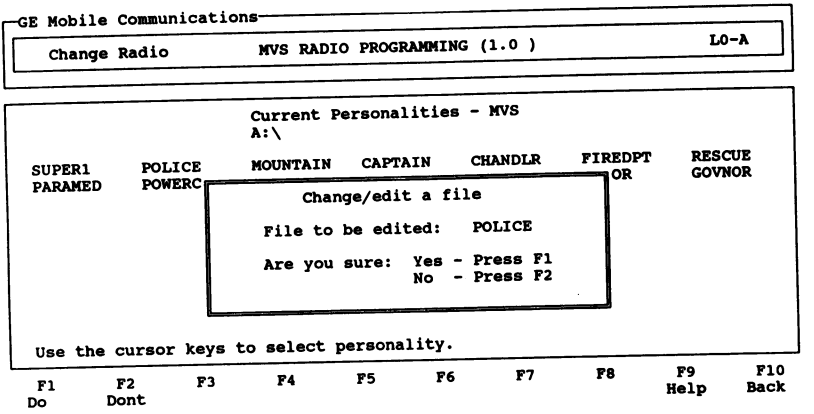


Figure 4 - Change Personality Window

Program Radio Window

From this window, you can program a radio without having to enter an "edit" mode. Select the file to be used for programming and then press the **F5 Progrm** key. When F5 is pressed from the Personality Directory Screen, the "pop-up" window is displayed as shown in Figure 5.

The **F1 Do** (Yes), the **F2 Dont** (No), the **F9 Help** and the **F10 Back** keys are the only enabled function keys.

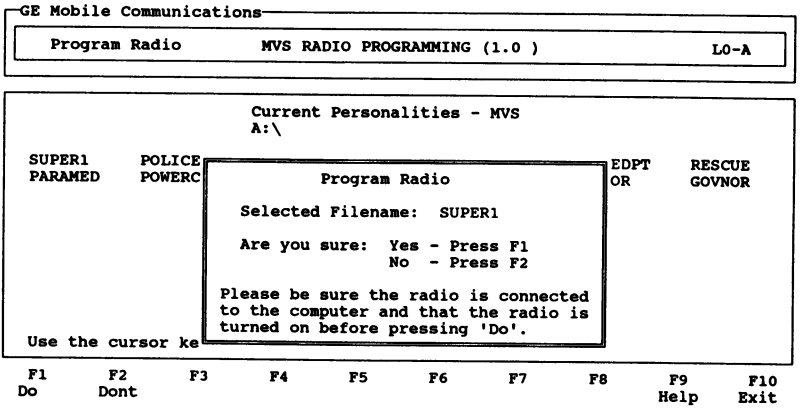


Figure 5 - Program Radio Window

Read Radio Personality Window

If you wish to read the personality into a file for editing, select the Read operation by pressing **F6 Read**. The window will be displayed as shown in Figure 6.

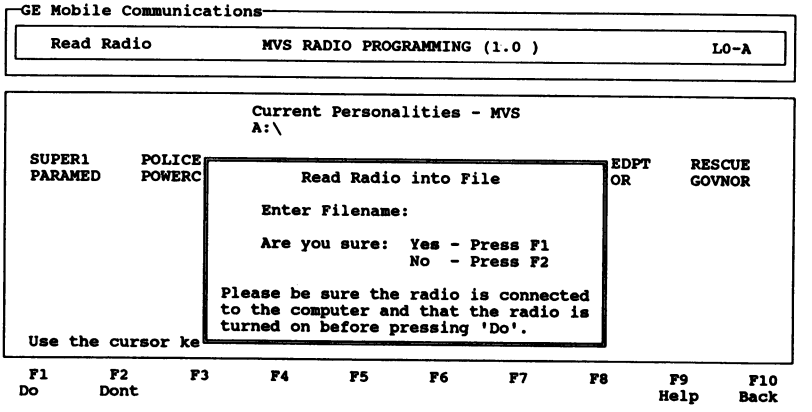


Figure 6 - Read Radio Personality Window

The **F1 Do** (Yes), the **F2 Dont** (NO), the **F9 Help** and the **F10 Back** keys are the only enabled function keys. You will need to enter the name of the destination file and then execute the loading procedure by pressing F1, or abort the process by pressing F10.

SET UP SCREEN

For the **MVS** radio, the **SET UP** screen will appear with two windows labeled **Channels** and **Frequency Range** respectively. The left window **(Channels)** is active (refer to Figure 7). With the **F1** key, you can switch the active window back and forth between the two windows. The window with the highlighted double lined box is the active window.

The **SET UP** or *model select* screen permits you to specify the number of channels in the radio and the frequency band. When the personality data is downloaded to a radio unit, the data will be verified against the radio type specified by the target unit.

To select an item in a window, you must select the window using F1 and then use the up/ down cursor keys to select the item.

After selecting the items, exit the screen by pressing the **F10 Exit** key. The selected items are now the default values. The items specified in this screen are only used when a new personality is being created. The default items are ignored anytime a personality is read from a file.

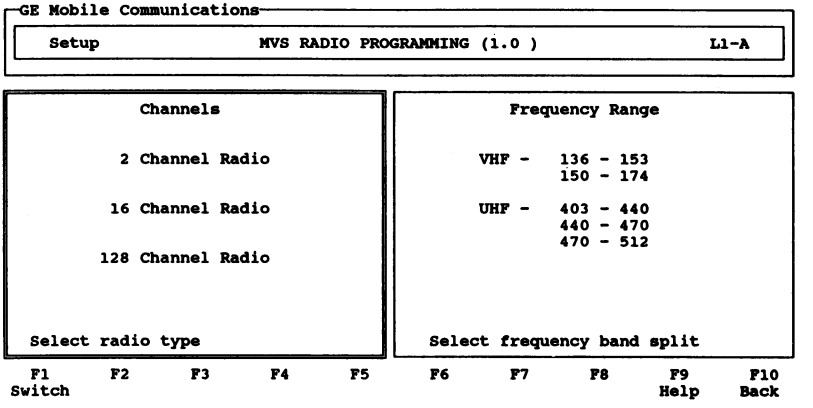


Figure 7 - SET UP Screen

UTILITY SCREEN

The Utility Screen allows access to infrequently used functions which have little relationship to actually programming the radio. When the **F3 Utlity** key is pressed from the personality Directory screen, the personality listing window does not change, but the function keys and the title in the upper left corner do (refer to Figure 8).

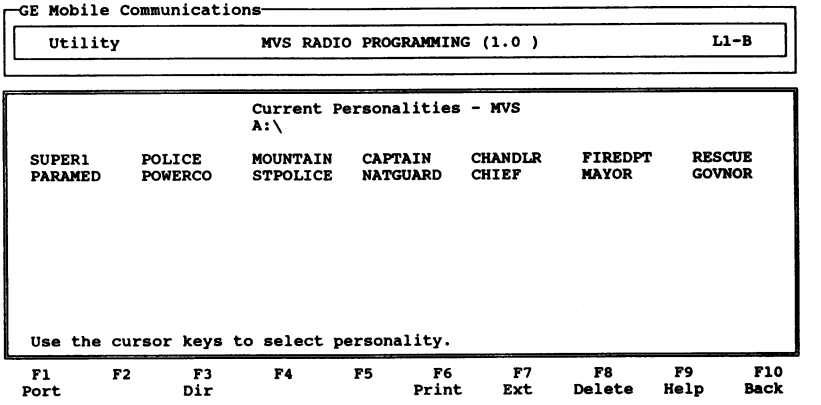


Figure 8 - Utilities Screen

Select Communication Port Window

The Communicaton Port Window provides the ability to select a port of your personal computer for communicating with a radio or printer. When **F1 Port** is selected from the Utility Screen, the "pop-up" window appears as shown in Figure 9. You are prompted to enter the number of a valid port. The default is 0. Once the port number has been entered, select the **F10 Exit** key to initiate the action.

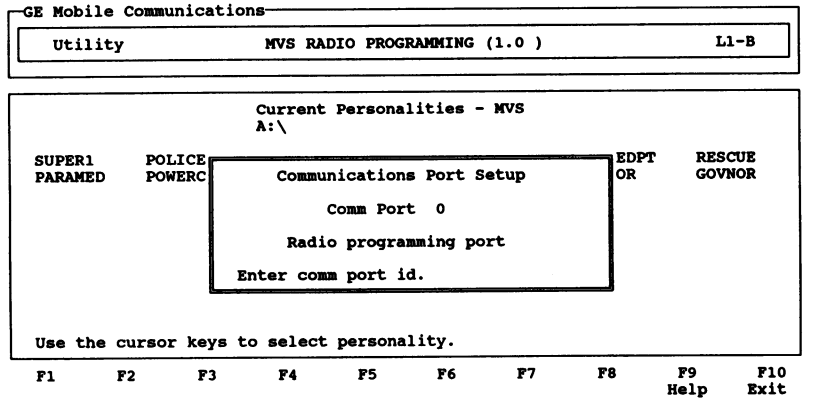


Figure 9 - Select Communication Port Window

Change Directory Window

The Change Directory Window provides the ability to switch between working directories. When **F3 Dir** is selected from the Utility Screen, the "pop-up" window appears as shown in Figure 10. You are prompted to enter the name of the directory you wish to select, the default being the existing directory. Once the name has been established, select the **F1 Do** key to initiate the action. If the directory does not exist, a "pop-up" window will ask you if the directory should be created. If the directory name is illegal, a "pop-up" window will inform you of the error.

Only **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back** function keys are active.

> **NOTE:** pressing the **F1 Do** key returns you to the Utility Screen under the specified directory. Pressing the **F2 Dont** key aborts the process, returning you to the Utility screen without changing the directory.

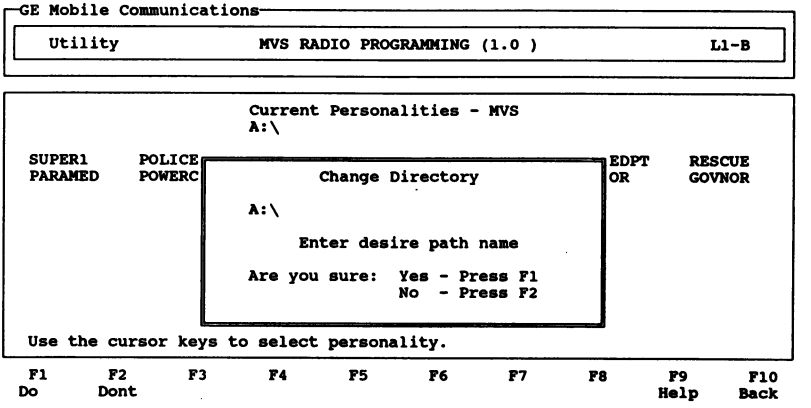


Figure 10 - Change Directory Window

Print Window

Pressing the **F6 Print** function key causes the "pop-up" window shown in Figure 11 to be displayed and enables the **F3 Print**, **F4 File**, **F5 Screen**, **F9 Help** and **F10 Back** function keys.

You have the option of specifying a personality different from the one selected. The selected personality is the default value in the "pop-up" window. You need to select the destination of the output by pressing either F3, F4 or F5. The F3 key sends the output to the printer, F5 sends the output to the screen and F4 sends the output to a file, the name being specified in another "pop-up" window shown in Figure 12.

The four active function keys are **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back**.

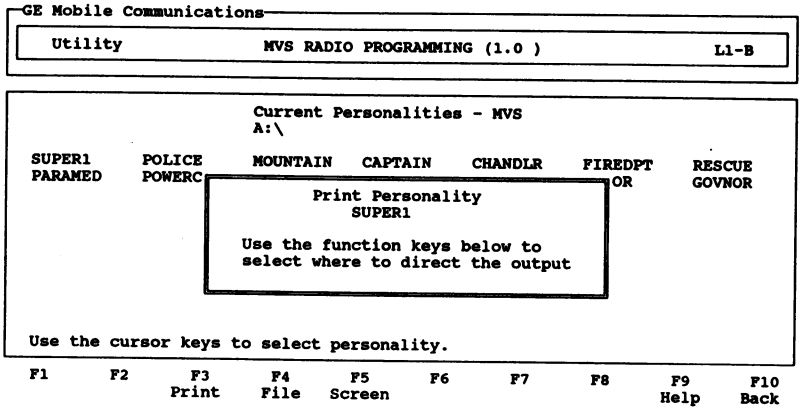


Figure 11 - Print Window

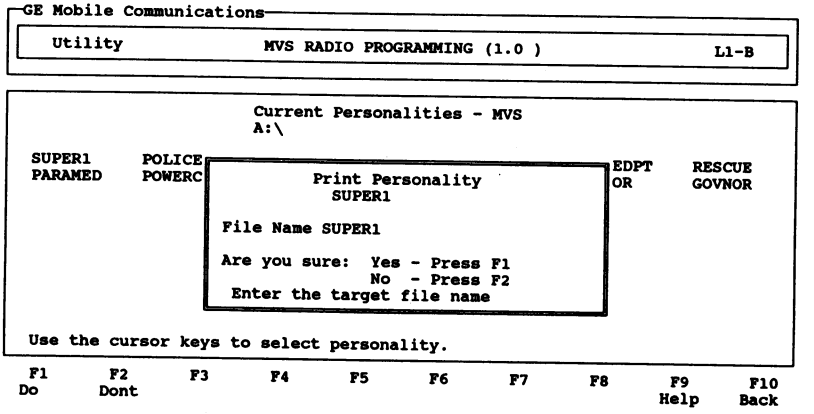


Figure 12 - Print Personality File Name Window

Extension Select Window

Pressing the **F7 Ext** function key gets the extension "pop-up" window which allows you to specify which files are displayed in the Personality Directory Window (refer to Figure 13). Only files with the specified extension are displayed. Wildcard characters (both "*" and "?") are permissible. The specified extension is always displayed at the top of the personality directory screen to the right of "Current Personalities."

The selected extension is stored on the disk, so the software remembers the default setting from run to run. The factory default setting will be MVS for MVS products.

When the Extension "pop-up" window appears, the current extension is automatically placed in the field. This gives you the ability to see what file extension has been chosen. At this point, you can exit the screen or specify a new extension.

Besides being used for display purposes, the specified extension is the default extension used whenever files are saved with no extension explicitly specified.

The **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back** function keys are active.

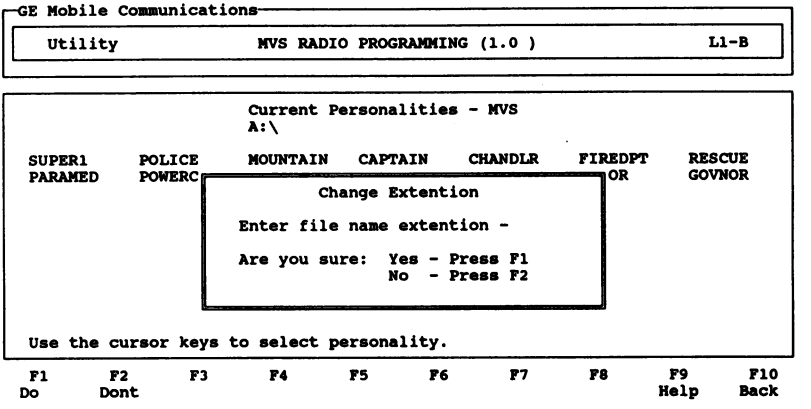


Figure 13 - Extension Select Window

Deleting File Window

Personality files can be deleted by pressing the **F8 Delete** function key. The Deleting File Window is displayed as shown in Figure 14. Wildcard character capability exists (both "*" and "?"). Non-existing or illegal file names will be flagged. The **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back** function keys are active.

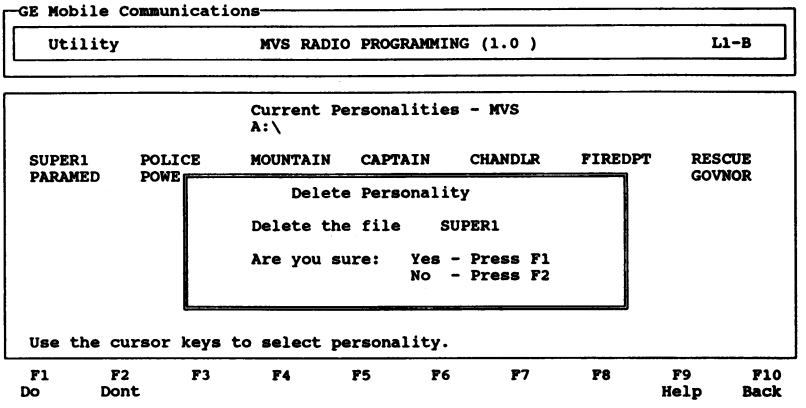


Figure 14 - Deleting File Window

CHANNEL DEFINITION SCREEN

The Channel Definition Screen can be entered through two different paths. The first path is by selecting **F4 New** from the Current Personality Screen. When **New** is selected, the Channel Definition Screen immediately appears. You can then proceed to define channels (refer to Figure 15).

The second path to the Channel Definition Screen occurs when you select **F2 Change** also from the Current Personality Screen. Once **CHANGE** is selected, you are presented with a "pop-up" window that solicits the file name to be changed. Once a file is selected, its contents are read and displayed in the Channel Definition Screen.

The Channel Definition Screen is split with two windows: **Channel Select** and **Main Channel Data**. When the window on the left is active, you can use the cursor keys to select any one of the channels. Information pertaining to the selected channel is displayed in the window on the right.

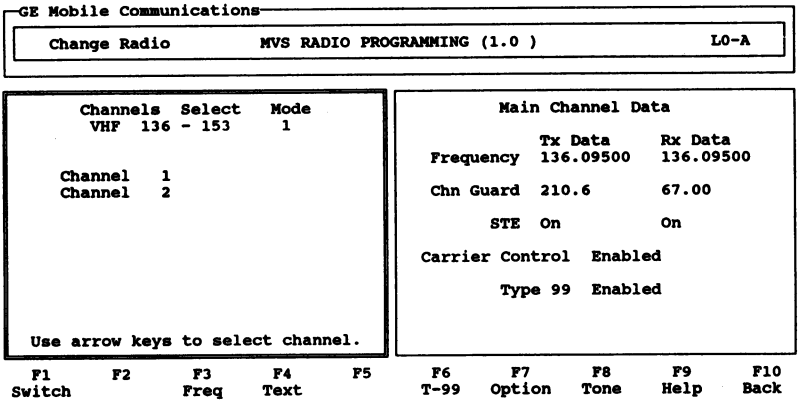


Figure 15 - Channel Definition Screen

There are two windows available on the right: a **Main Channel Data** window and a **Type 99** window. You can select which of the two windows you wish to see. Pressing the **F6 T-99** function key gets the alternate view which will be described later.

Channel Select Window

This window is displayed on the left of the Channel Definition Screen.

The **Mode** field is unique to the MVS radio. By using the **Pg Up** and **Pg Dn** keys you can move through the various modes of a 128 channel MVS radio. The **Mode** field will only be present on the 128 channel MVS product.

Active function keys include:

F1 - Switch Selects the active window.

F3 - Freq Access frequency summary window.

F4 - Text Access Text window.

F5 - Progrm Program a radio.

F6 - T-99 View Type 99 data in the window on the right.

F7 - Option Create/Modify radio options.

F8 - Tone Create/modify Type 99 tone table.

F9 - Help Displays any Help messages.

F10 - Back Return back to the System Entry Screen.

Main Channel Data Window

This window is actually shown as the window on the right in Figure 16 and is used to specify the primary data needed for each channel the radio must support. In most cases this window is sufficient to display all necessary channel information. A channel frequency summary window is available and will be covered later in this publication.

Type 99 Window

Whenever the **F6 T-99** function key is pressed from the Channel Definition screen, the window on the right changes to the Type 99 Window as shown in Figure 17.

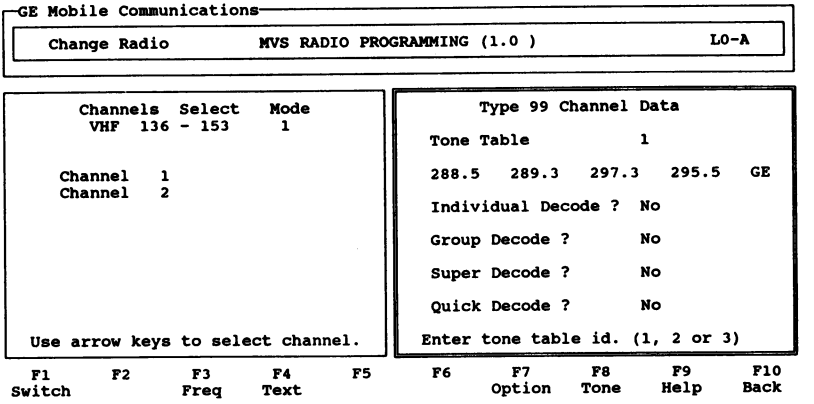


Figure 16 - Channel Definition Screen
(With Type 99 Window Shown on the Right)

Frequency Summary Window

The Frequency Summary Window is accessed from the Channel Definition Screen by pressing **F3 Freq**. This window is a full screen, formatted window which summarizes the channel frequencies of all channels in the radio (refer to Figure 17). The intent is to offer an alternate method of entering frequencies other than just using the Channel Definition Main Data window. This window displays 16 TX/RX frequency pairs at one time. As on the Channel Definition screen, the Frequency Summary Window has a **Mode** field and you can move up and down through the modes using the **Pg Up** and **Pg Dn** keys.

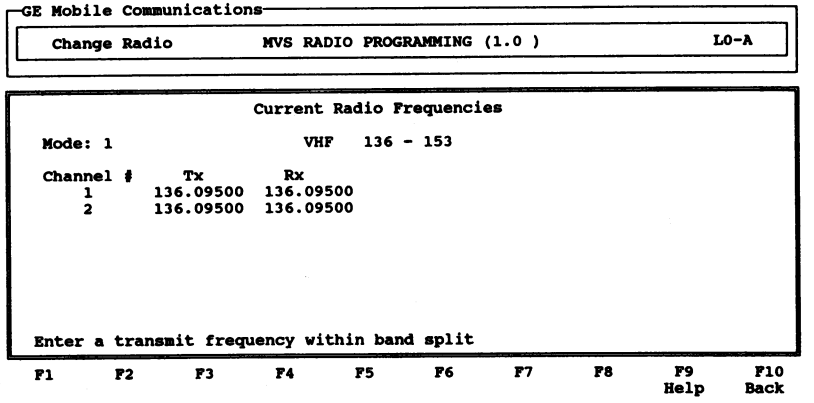


Figure 17 - Frequency Summary Screen

Option Window

The Option Window is accessed from the Channel Definition Screen by pressing the **F7 Option** function key (refer to Figure 18).

This window allows you to specify non-channel specific personality parameters. These parameters include the following:

- Carrier Control Timer time in minutes (0.5-7.5)
- Hang After PTT Release YES/NO
- Scan Hang Time in Seconds.
- Scan for Channel Guard YES/NO
- On Hook TX Channel
- P1 Channel Programming

The **F9 Help** and **F10 Back** function keys are active from this window.

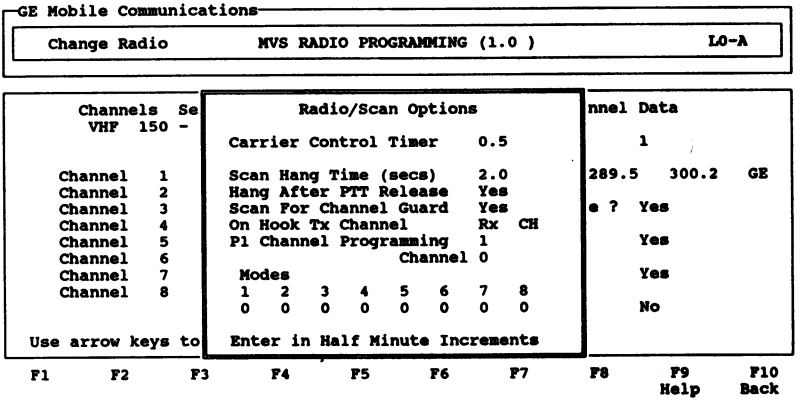


Figure 18 - Options Window

Tone Tables Window

This window is accessed from the Channel Definition Screen by pressing the **F8 Tone** function key (refer to Figure 19).

Any radio that uses Type 99 can hold up to three different tone sequence tables. This window allows you to specify each of these three tables. In this window you can specify the GE format YES/NO and you can enter the Type 99 tone in Hertz for tones A through D in tables 1 through 3.

The **F9 Help** and **F10 Back** function keys are active from this window.

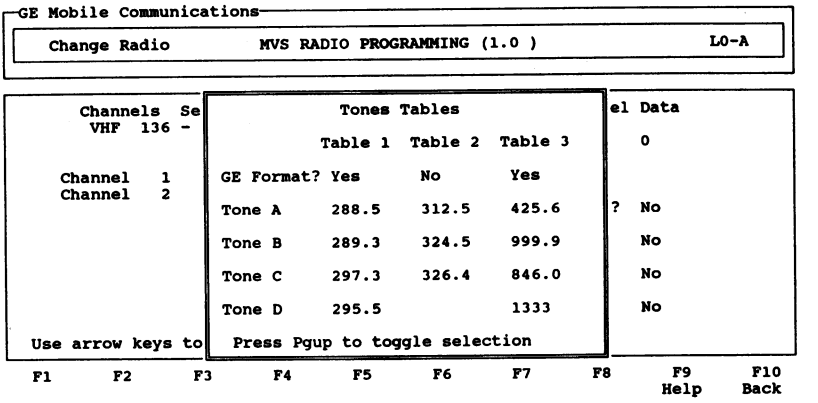


Figure 19 - Tone Tables Window

Text Window

This window is accessed from the Channel Definition Screen by pressing the **F4 Text** function key (refer to Figure 20).

The Text Window is a "pop-up" window containing two PC Programmer controlled fields and eight lines (actually fields) of user defined text. Anytime the personality is used to program a radio, the revision number of the software in the radio is stored in the personality file along with the date on which the programming took place. This information is made available to the user on subsequent review of the personality file.

The **F9 Help** and **F10 Back** function keys are active as well as the **Pg Up** and **Pg Dn** keys. You can read or enter text as you desire.

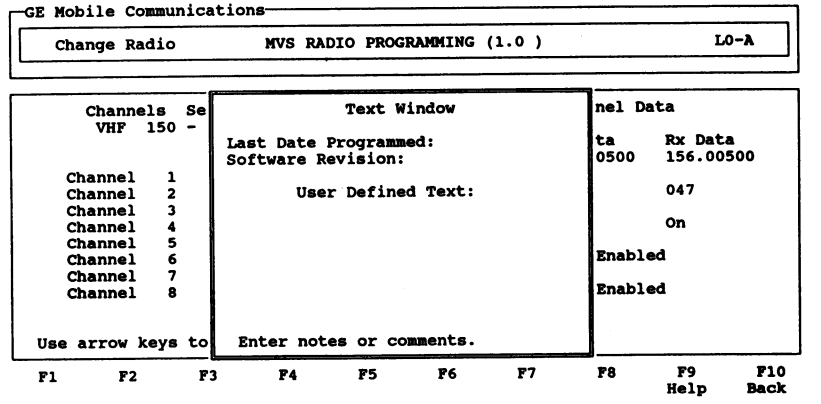


Figure 20 - Text Window

Program Radio Window

To program the radio with the personality currently displayed, press the **F5 Progrm** function Key from the Channel Definition Screen. Once selected, a "pop-up" window shown in Figure 21 will be displayed to remind you to connect the radio before attempting to program it. Functions keys **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Exit** are the only enabled keys from the Program Radio Window.

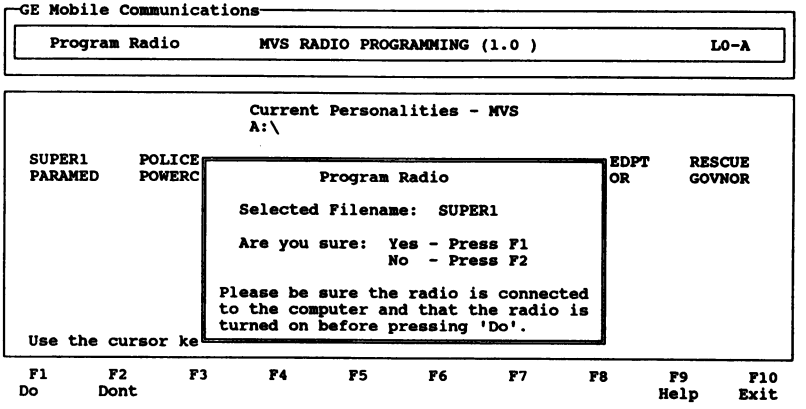


Figure 21 - Program Radio Window

Save File Window

This window is used as a prompt for you to name the file where the personality data will be saved (refer to Figure 22). The source file name is displayed so you will remember where the file came from. If the edit session was entered using the **F4 New** function key from the Personality Director Screen, the source field displays **New**. You can not alter the source field. The destination field will always come up **New** and will not take on the default value of the source field because of the risk of overwriting data.

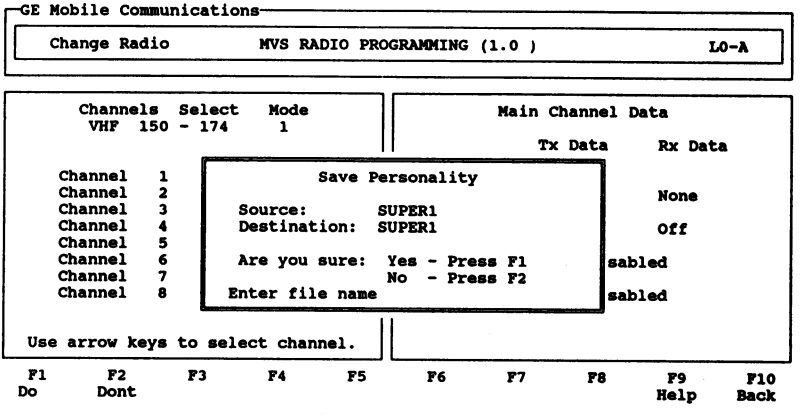


Figure 22 - Save File Window

Functions keys **F1 Do** (Yes), **F2 Dont** (No), **F9 Help** and **F10 Back** are the only enabled keys from the Save File Window.

BASIC PROGRAMMING PROCEDURE

When starting the program, by typing **MVS** at the DOS prompt and pressing the <ENTER> key, the first screen up is the Directory screen. This screen provides a listing of all radio personalities already programmed. You can change or review any one of these personalities as needed. This procedure is covered later in this publication (refer to **Table of Contents** for **CHANGE RADIO**).

Initially, you are starting out with a new radio so continue as follows:

NEW RADIO

Set Up

1. From the Directory Screen press the **F1 Setup** function key to set the radio configuration.
2. Select the radio type in the left window using the cursor movement keys.

NOTE

2-channel MVS radios can have Type 99 decode.
16-channel MVS radios can have Type 99 decode and/or Scan.
128-channel MVS radios can have only Scan.

3. Press the **F1 Switch** function key to enable the window on the right of the Set Up screen.
4. Select the frequency band split using the cursor movement keys.
5. Press the **F10 Exit** function key to return to the Directory screen.

New

1. Press the **F4 New** function key to enter data for the radio selected in the Set Up procedure.
2. Press the **F3 Freq** function key.
3. Enter the data in the highlighted boxes for transmit/receive frequencies.
4. Press the **F10 Back** function key.
5. Press the **F1 Switch** function key to enable the window on the right.
6. The frequency for TX/RX Channel 1 is displayed from step 3. Use the cursor movement keys and follow the prompts shown in the window for each data field entry. When the data for this screen is complete press the **F7 Option** function key.

7. Enter data using the cursor movement keys and following the prompts displayed in the window for each field entry. Press the **F10 Back** function key to return to the previous screen.
8. If Type 99 is enabled, press the **F8 Tone** function key to enter Type 99 tone data. Use the cursor movement keys and prompts shown in the window for each data field entry. After the data entry is completed for this window, press the **F10 Back** function key to return to the previous screen.
9. Press the **F10 Back** function key. The Save Personality window appears.
10. Enter the path and file name then press the **F1 Do** or the **F2 Dont** function key. If **F1 Do** is pressed the data is saved in a file and the Directory Screen is shown with the new file name. IF **F2 Dont** is pressed, the file is not saved and you are returned to the Directory screen.
11. You can now program the radio. Go to the program function by pressing the **F5 Progrm** function key, or exit the program by pressing the **F10 Exit** function key.

Program

NOTE

The **F1 Port** function defaults to **COM1**. If the USER wishes to use any other Port, he must set it up before programing any radio or reading a file from any radio.

1. Press the **F5 Progrm** function key. The Program window appears.
2. If the file name entered or selected is correct, press the **F1 Do** or the **F2 Dont** function key. If the file name is incorrect, enter the correct file name, then press the **F1 Do** or the **F2 Dont** function key.

   If the **F1 Do** key is pressed and the radio is connected to the computer, the program file programs the attached radio.

   If the **F2 Dont** key is pressed, you are returned to the Directory screen. You can select another function, or you can exit the program by pressing the **F10 Exit** function key.

Utility

1. Press the **F3 Utlity** function key, then press the **F6 Print** function key. The Print Personality Window appears and shows the file name.
2. If the file name is correct, select either the **F3 Print**, the **F4 File** or the **F5 Screen** function key. If the file name is incorrect, enter the correct file name then select **F3 Print**, **F4 File** or **F5 Screen**.
3. If **F3 Print** is selected, verify the file name, correct if necessary, then press the **F1 Do** or the **F2 Dont** function key. If **F1 Do** is pressed the file will print out through a printer attached to the computer. If **F2 Dont** is pressed, the **F3 Print** function is aborted and you are returned to the Print Personality window.

4. If the **F4 File** function key is selected, verify the file name, change if necessary, then press the **F1 Do** or the **F2 Dont** function key. If **F1 Do** is pressed the data is sent to another file. If **F2 Dont** is pressed the **F4 File** function is aborted and you are returned to the Print Personality window.
5. If the **F5 Screen** function key is selected, the file is displayed on the screen of your computer monitor. Press the **F10 Exit** function key to return to the previous screen.
6. Return to the Directory Screen by pressing the **F10 Exit** function key, then the **F10 Back** function key twice.

CHANGE RADIO

If you want to make a change to an existing radio personality, from the Directory Screen, press the **F2 Change** function key. The default personality is the one selected when **F2** is pressed. You can select another personality using the cursor movement keys before the **F2 Change** function key is pressed. Continue as follows:

1. When the **F2 Change** function key is pressed the Change Radio Screen comes up with the Change/Edit window. In this window the file to be edited is displayed. You can change it here if it is not the correct file. Press the **F1 Do** or the **F2 Dont** function key.

   If **F1 Do** is pressed the Change Radio Screen will appear. You can select a channel in the window displayed on the left of the screen using the cursor movement keys.

   If **F2 Dont** is pressed, no changes are made and you are returned to the Directory screen.
2. Press the **F1 Switch** function key to enable the Main Channel Data window displayed on the right of the screen. You can select and change data in this window using the cursor movement keys.
3. Press the **F7 Option** function key. The Option Window is displayed. You can select and change Option data using the cursor movement keys. Press the **F10 Back** function key to return to the previous screen.
4. If Type 99 is enabled press the **F8 Tone** function key. Select and change the tone data using the cursor movement keys.
5. Press the **F10 Back** function key. The Save Personality Window is displayed.
6. Enter or change the path and file name, then press the **F1 Do** or the **F2 Dont** function key. If the **F1 Do** key is pressed the changed data is saved in a file. If **F2 Dont** is pressed the changes are not saved and the old data in the file remains unchanged.
7. You can now program a radio with the new data. Press the **F5 Progrm** function key or exit the program by pressing **F10 Exit**.

Read

A **Read** function is provided for determining the operating data of a previously programmed radio. This Read function permits the data from the radio to be transferred to a file for corrections or additional data added through the **Change** function. To activate the **Read** function continue as follows:

1. Press the **F6 Read** function key. The Read From Radio File window appears.
2. Enter a new file name if you are unsure what file was programmed into the radio. If file name is known enter the correct file name.

NOTE

Be sure that the radio is connected and turned on before pressing the **F1 Do** function key.

3. Press the **F1 Do** or the **F2 Dont** function key. If the **F1 Do** key is pressed, a file is read from a radio. If **F2 Dont** is pressed, no file is read and you are returned to the Directory screen.

APPENDIX A
MAKING A WORKING COPY

A discussion of the three types of disk systems follow. To save time, identify the type of operating system applicable to you and then skip to the appropriate paragraph detailing that type of system.

THE SINGLE DISKETTE SYSTEM

If you have identified your system as a single diskette system, a personal computer with only one diskette drive, you want to follow the procedures below. You should be aware that you are required to exchange diskettes during the copy operation so be fully attentive to prompts appearing on your screen.

For this operation you need your DOS diskette, one blank diskette which you remember we identified as the "working copy," and your MVS PC Programming Software Diskette.

Prior to executing any operations with either your DOS diskette or MVS PC Programming Software ensure that write-protect tabs cover the notches of these diskettes. When the write-protect notch is covered, you cannot change the contents of this diskette.

First insert your DOS diskette into the drive and turn on the power. To speed up the process press the return key twice to eliminate date and time presentations and prompts. A> appears. Now, type:

FORMAT
then depress <ENTER>

The presentation on your screen prompts you to insert a new diskette into the drive. At this time remove the DOS Diskette and insert the blank diskette into the drive, and press

<ENTER>

At this point DOS formats the blank working copy. There may be displays or presentations which appear on the screen to represent what is occurring. Each personal computer system is different in this respect. The important thing to note is that when the working copy diskette has been formatted the screen inquires if you wish to format another. Simply answer by striking the letter N on the keyboard. A> appears. Now, insert the MVS diskette into the drive and type:

DISKCOPY
now depress <ENTER>.

The system reacts by reading the MVS Radio program file into memory and then write it to a formatted diskette. During the operation be attentive to the display as you are prompted, possibly several times, to exchange original and "working copy" diskettes in the diskette drive. Upon completion of the copy operation on the screen appears the following:

Copy Complete
Copy another (Y/N)?

At this time remove the original MVS diskette and store it in a safe place. The working copy diskette is now ready and available for your MVS service tasks.

THE DUAL DISKETTE SYSTEM

If you have identified your system to be the two diskette system, that is, it provides for two diskette drives, then you want to be familiar with the procedures.

To make a working copy of MVS PC Programming Software you need your DOS diskette, one blank diskette and your MVS original diskette.

First, insert your DOS diskette into drive A and turn the power on. If the power is on then follow the procedures to boot your particular personal computer system.

Insert your blank working copy diskette into drive B. When the A> prompt appear on the screen, type

FORMAT B:
and then depress <ENTER>

You are then prompted to press any key. So, simply press any letter on the keyboard.

At this point, DOS formats the blank working copy. Various types of information pertaining to the operation appear on the screen relevant to the operation being executed. You are not required to initiate any action until the format sequence has been completed. When the personal computer system has completed the format for your files, it queries if you wish to format another. Now, simply, type the letter N.

You may now remove the DOS diskette from Drive A and insert the original MVS diskette into Drive A. The blank working copy diskette remaining in Drive B has been formatted to accept the MVS Radio program. A> now appears. Your next step is to type:

DISKCOPY A:B:
then depress <ENTER>

The personal computer system reacts by copying all files from MVS PC Programming Software Diskette to the working copy diskette in Drive B. Upon completion remove the MVS diskette from Drive A and store it in a safe place.

THE FIXED OR HARD DISK SYSTEM

If you are operating with a fixed or hard disk system, a drive enclosed within the framework of the personal computer, then your actions are a little simpler than using systems with one or two diskette drives.

First, you want to create a sub-directory for your MVS PC Programming Software. If you are confused about what a directory is you might want to refer to your DOS reference manuals for further explanation. Essentially, it is a guidepost for the system to locate and retrieve the MVS PC Programming Software, as well as, other programs for your use.

To begin, you create the sub-directory. When the C:\> prompt appears on your screen, insert the MVS PC programming diskette into drive A. Then type:

A:

Then, at the A:\> prompt type:

MKDIR C:\MVS and press <Enter>

Then, type:

COPY A: * . * C:\MVS and press <Enter>

Execution of copy task begins and the personal computer displays the file names as they are copied into memory.

Once the PC programming software is located on the fixed disk, a path must be devised. This is accomplished by typing the following:

PATH = C:\MVS and press <Enter>

You now remove the original MVS diskette from disk drive A and store it in a safe secure place. Your working copy is now held on the hard disk ready for you to call at any time.

APPENDIX B
WORKFOLDER

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET A
Channel Definition

Chan. No.	Mode No.	TX Freq.	RX Freq.	TX CG	RX CG	CCT Enbl.	99 Enbl.
1 2 3 4	1						
5 6 7 8							
9 10 11 12							
13 14 15 16							
1 2 3 4	2						
5 6 7 8							
9 10 11 12							

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET A
Channel Definition

Chan. No.	Mode No.	TX Freq.	RX Freq.	TX CG	RX CG	CCT Enbl.	99 Enbl.
13 14 15 16	2						
1 2 3 4	3						
5 6 7 8							
9 10 11 12							
13 14 15 16							
1 2 3 4	4						
5 6 7 8							

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET A
Channel Definition

Chan. No.	Mode No.	TX Freq.	RX Freq.	TX CG	RX CG	CCT Enbl.	99 Enbl.
9 10 11 12	4						
13 14 15 16							
1 2 3 4	5						
5 6 7 8							
9 10 11 12							
13 14 15 16							
1 2 3 4	6						

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET A
Channel Definition

Chan. No.	Mode No.	TX Freq.	RX Freq.	TX CG	RX CG	CCT Enbl.	99 Enbl.
5 6 7 8	6						
9 10 11 12							
13 14 15 16							
1 2 3 4	7						
5 6 7 8							
9 10 11 12							
13 14 15 16							

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET A
Channel Definition

Chan. No.	Mode No.	TX Freq.	RX Freq.	TX CG	RX CG	CCT Enbl.	99 Enbl.
1 2 3 4	8						
5 6 7 8							
9 10 11 12							
13 14 15 16							

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET B
Type 99

Tone Tables

GE Format?	Yes/No	Yes/No	Yes/No
Tone A	_____	_____	_____
Tone B	_____	_____	_____
Tone C	_____	_____	_____
Tone D	_____	_____	_____

Chan. No.	Super Decode	Indiv Decode	Quick Decode	Grp Decode			
1 2 3 4							
5 6 7 8							
9 10 11 12							
13 14 15 16							

APPENDIX B
MVS RADIO PROGRAM WORK FOLDER

WORKSHEET C
Radio & Scan Options

Carrier Control Timer _____

Scan Data

Scan Hang Time (Secs)	_____
Hang after PTT Release	Yes/No
Scan for Channel Guard	Yes/No
On Hook Tx Channel	_____
P1 Programming	_____
Channel No.*	_____

* This field does not appear unless the answer to P1 Channel Programming is 20 Fixed.

STANDARD TONE FREQUENCIES Hz				
67.0	88.5	107.2	131.8	167.9
71.9	91.5	110.9	136.5	173.8
74.4	94.8	114.8	141.3	179.9
77.0	97.4	118.8	146.2	186.2
79.7	100.0	123.0	151.4	192.8
82.5	103.5	127.3	156.7	203.5
85.4			162.2	210.7

Channel Guard Tone Frequencies

PRIMARY CODE	EQUIVALENT CODE	PRIMARY CODE	EQUIVALENT CODE	PRIMARY CODE	EQUIVALENT CODE
023	340, 766	205	135, 610	464	237,642, 772
025		223	350, 475, 750	465	056, 656
026	566	226	104, 557	466	144, 666
031	374, 643	243	267, 342	503	157, 312
032		244	176, 417	506	224, 313, 574
043	355	245	370, 554	516	067, 720
047	375, 707	251	236, 704, 742	532	161, 345
051	520, 771	261	227, 567	546	317, 614, 751
054	405, 675	263	213, 136	565	307, 362
065	301	265	171, 426	606	153, 630
071	603, 717, 746	271	427, 510, 762	612	254, 314, 706
072	470, 701	306	147, 303, 761	624	075, 501
073	640	311	330, 456, 561	627	037, 560
074	360, 721	315	321, 673	631 745	231, 504, 636
114	327, 615	331	372, 507	632	123, 657
115	534, 674	343	324, 570	654	163, 460, 607
116	060, 737	346	616, 635, 724	662 444	363, 436, 443,
125	172	351	353, 435	664	344, 471, 715
131	572, 702	364	130, 641	703	150, 256
132	605, 634, 714	365	107	712	136, 502
134	273	371	217, 453, 530	723	235, 611, 671
143	333	411	117, 756	731	447, 473, 474
152	366, 415	412	127, 411, 711		744
155	233, 660	413	133, 620	732	164, 207
156	517, 741	423 713	234, 563, 621	734	066
162	416, 553	431	262, 316, 730	743	312, 515, 663
165	354	432	276, 326	754	076, 203
172	057	445	222, 457, 575		
174	142, 270				

Primary and Equivalent Digital Codes (Octal)

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GE Mobile Communications

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