Property of Mike Padgett

SOFTWARE

BY ALFORD'S

PADGETT NELSON INDUSTRIES, INC.
3684 Hedgewood Drive
Winter Park, Florida 32792
305-678-6776

*** NOTICE ***

If you are receiving this material as an upgrade to an existing copy of SCREDITOR III, you should discard all of your old materials after carefully reading the list of changes contained herein. Changes have been made to SCREDITOR III and all three support programs (KEYGEN, PRTGEN and CONGEN) since the last version of the program was issued.

Also, if you are receiving this material as an update to any version of SCREDITOR III, you will have to re-run CONGEN, KEYGEN and PRTGEN to create new system data files. The current version of SCREDITOR III will not load any of the old data files except for the symbol files.

CHANGES TO CONGEN -

CONGEN now incorporates a TERMINAL SELECTOR question which allows you to select from a list of terminals and eliminate all of those questions about your terminal. If, of course, your terminal is not included in the list, you will still have to answer the questions. An ADDENDUM in the INSTALLATION MANUAL, however, tells you an easier way to do so!

If you have a very old copy of SCREDITOR III, CONGEN will now let you use a terminal which does NOT have CLEAR TO END OF LINE or SCREEN. Unless your terminal is blindingly fast (such as a MEMORY-MAPPED display, things may get quite slow at times, but at least things do get!

Also, you can now specify a number of nulls for ANY control string which is sent by SCREDITOR III. This will make things easier for the few of you who DID have to do some machine language patching to SCREDITOR III!

In addition, SCREDITOR III now supports ANSI-STANDARD terminals. New questions have been added to CONGEN concerning them. There is even a stock terminal selection for the DEC VT-100 running ANSI-STANDARD (the most popular ANSI terminal around to our knowledge).

Again, for users with older versions of SCREDITOR III, the printer page and I/O vector questions have been moved from CONGEN to PRTGEN (it makes sense when you think about it!).

CHANGES TO KEYGEN -

All of the keyboard-related questions have been removed from CONGEN and placed in KEYGEN. Also, KEYGEN is now much easier to use than the original version. In addition to the display of the codes generated by your KEYBOARD which was included in all releases after May 1982, KEYGEN now allows you to back up and re-enter questions. Also, a timing constant question has been added to make the use of keys generating multi-code sequences

(function keys) more reliable. The KEYGEN section of the INSTALLATION MANUAL gives more detail.

CHANGES TO PRTGEN -

As noted above, the page information and printer vectors have been moved from CONGEN to PRTGEN.

For users of older versions of SCREDITOR III, an initialization string is now defined in PRTGEN, and a number of other changes have been made. In particular, if you need to send nulls as part of a control sequence (as is needed for the MX-100), you can now do so!

CHANGES TO SCREDITOR III -

The changes to SCREDITOR III are almost too numerous to mention.

First, the syntax of many of the COMMANDS has changed from slightly to radically. This happened because we re-wrote the entire program and included a true line parser to the COMMAND control module. This saved us a lot of room in each COMMAND (about a thousand bytes, total), so we added a number of new options for many existing COMMANDS. A number of existing options changed in syntax to conform to a more standard structure.

Next, we completely re-wrote the printing COMMANDS. There are now only two printing COMMANDS in SCREDITOR III. The general printing command (PR) is now used for page-printing, raw printing, and numbered printing! If, for instance, you have line numbers on on the screen, the printed output will be with line numbers. If off, no numbers get printed! If you have defined headers or footers, they get printed. If you haven't, the default top and bottom margins get used.

The PRINT-MERGE COMMAND is new too. With the new command, you can inspect each document after merging and before printing. If you want, you can even edit the post-merged document before printing! The PRINT-MERGE COMMAND uses the headers and footers if you have defined them, and will print with line numbers if you have them on!

Speaking of headers and footers, there are now no LOAD and SAVE HEADER/FOOTER COMMANDS. If you have defined them, they get saved as part of the file. If they were saved, they will be loaded and put in as definitions the next time the file is edited. Also, the DEFINE HEADER and FOOTER COMMANDS are now different. Now you type your header or footer as if it were the first lines in the buffer. When you have SCREEN EDITED to your heart's content, you put the cursor on the first line AFTER what you want for the definition and execute the DH or DF COMMAND. The lines disappear, and the definition is complete. There is also an UNDEFINE COMMAND to restore the lines as part of the buffer for inspection or updating! Also, all of the hinking around with fields, skip counts

and release characters has been eliminated.

On the subject of release characters (and pre-defined delimiters)...there aren't any now! The first character after the COMMAND NAME in the CHANGE and FIND COMMANDS becomes the delimiter for the rest of the COMMAND. With floating delimiters, you don't need a release character! Also, delimiters have been eliminated from most all COMMANDS which do not absolutely need them.

A number of new COMMANDS have been added to SCREDITOR III, and a number (like SAVE and LOAD HEADERS) have been deleted. To get a quick feel for the changes, refer to the COMMAND SUMMARY in the back of the new (yes, we even re-wrote that too!) TECHNICAL REFERENCE MANUAL. Be sure to read each description also, as we have changed the way a number of the commands operate even though the syntax is the same.

We are now working on the SECOND update of SCREDITOR III. We hope to have it ready some time after the first of the year. If you have any ideas as to what things this version would be better with, or without, or have any other suggestions, please let us know. Also, take a moment and fill out the information sheet which is included in this mailing so we can incorporate your terminal in the CONGEN TERMINAL SELECTOR question.

COPYRIGHT NOTICE

WARRANTY NOTICE

Although every effort has been made to insure the accuracy of this material, it is sold AS IS and without warranty. No claim as to the suitability or workability of this material for any particular application or on any particular computer is made. This statement is in lieu of any other statement whether expressed or implied.

TRADEMARK NOTICES

Flex is a trademark of Technical Systems Consultants, Inc. OS-9 is a trademark of Microware Systems Corporation. Screditor and Screditor III are trademarks of Alford and Associates.

ABOUT THIS MANUAL

This manual is designed to provide complete information about the installation of SCREDITOR III in your system. In order to perform the installation, you will have to have certain information about your hardware and system software. It would be a good idea to read this manual before attempting installation, gathering the necessary data from your system documentation as you go along to answer the questions which the installation programs will be asking. You may also need to refer to the SCREDITOR III TECHNICAL REFERENCE MANUAL for the meaning of certain terms which may be unfamiliar to you. Included at the end of this manual is additional information which may also be of some help to you concerning system configurations, etc...

TABLE OF CONTENTS

REQUIRED HARDWARE SUPPORT

In order for SCREDITOR III to operate in your system, certain minimum configuration specifications concerning display and keyboard must exist, as outlined in the following paragraphs.

TERMINAL CHARACTERISTICS -

Certain characteristics must exist in the display or terminal with which SCREDITOR III will be used, as follows:

1) For acceptable operation, the terminal or display must accept characters at a rate of 4800 baud or higher. Slower communications rates will cause excessive delays in the display of information and the postioning of the cursor. Although slower terminals will actually work, the delays will make operation unacceptable.

2) The terminal or display MUST communicate in USASCII (ASCII) code.

3) The terminal or display must support cursor positioning by one of five methods:

   a) SEPARATE ROW AND COLUMN ADDRESSING (ROW/COLUMN) -

      A string of characters comprised of an ASCII control code followed by zero to seven additional characters, followed by the cursor row, and a second such string followed by the cursor column.

   b) SEPARATE ROW AND COLUMN ADDRESSING (COLUMN/ROW) -

      A string of characters comprised of an ASCII control code, followed by zero to seven additional characters, followed by cursor column, and a second such string followed by the cursor row.

   c) COMBINED ROW AND COLUMN ADDRESSING (ROW/COLUMN) -

      Receipt of a string of characters comprised of an ASCII control code followed by zero to seven additional characters, followed by the cursor row, followed by the cursor column, in that order.

   d) COMBINED ROW AND COLUMN ADDRESSING (COLUMN/ROW) -

      Receipt of a string of characters comprised of an ASCII control code followed by zero to seven additional characters, followed by the cursor column, followed by the cursor row, in that order.

   e) ANSI 'STANDARD' X3.64-1977/X3.41-1974

      The ANSI 'STANDARD' consists of a Control Sequence Introducer followed by a parameter string and terminated by a final character. The parameter string will consist of the cursor row and column positions.

4) In addition to mandatory cursor positioning, it is most desirable that the terminal support clear-to-end-of-line and clear-to-end-of-screen. Without these two control sequences, all display functions will be extremely slow. Also desirable but not required is delete line and insert line. The two clear functions and the two delete functions must be generated by the receipt of a control code followed by zero to seven additional characters, or by an ANSI 'STANDARD' control sequence.

5) If the terminal does not support insert and delete line, the terminal or display must scroll up when a NEW LINE is sent and the cursor is on the last line of the display. The NEW LINE sequence must be generated by the receipt of a string comprised of a control code followed by zero or more additional characters, or by an ANSI 'STANDARD' control sequence.

6) The display and keyboard or terminal must operate in full-duplex; i.e., must be capable of simultaneously sending and receiving data.

KEYBOARD CHARACTERISTICS -

Certain characteristics must exist in the keyboard with which SCREDITOR III will be used, as follows:

1) The keyboard or external subroutine from which SCREDITOR III receives characters MUST communicate in USASCII (ASCII) code. If the keyboard itself communicates in some other code, external handlers must be used to convert the codes to ASCII. The only exception to this is in the case of 'META' keys, discussed in paragraph (c) below.

2) All keys used for OPERATORS must conform to one of three conventions. These conventions may be mixed, that is, some keys may be of one type, others of another type.

   a) The key generates a valid ASCII control code ($01-$1F).

   b) The key generates a sequence of bytes, whose first byte is a valid ASCII control code (FUNCTION keys on some terminals). In this case, no more than five characters may be included in the sequence for proper decoding of the key by SCREDITOR III.

   c) The key generates a 'META' code; i.e., a code which should be interpreted as a OPERATOR because the byte it generates has its high-order bit is set. Certain CHERRY keyboards generate this type of code. Be sure to read the note about this in the KEYGEN section of the GENERAL INFORMATION ADDENDUM at the end of this manual if you will be using 'META' keys.

SCREDITOR III SYSTEM INSTALLATION

The installation of SCREDITOR III involves the copying of a number of files from the master disk you received with your order, placing the master disk in a very safe place, and then running three installation programs, CONGEN, KEYGEN and PRTGEN. The remainder of this manual gives detailed information about the installation of SCREDITOR III and the operation of each of the programs which will customize SCREDITOR III to your system.

FLEX AND SSB VERSIONS -

The first thing you should do is copy CONGEN, KEYGEN, PRTGEN and SCREDITOR III from the disk you received to your system disk. Also copy the help data file to your syste disk. These programs are named as follows:

FLEX VERSION	SSB VERSION
CONGEN.CMD	CONGEN.$
KEYGEN.CMD	KEYGEN.$
PRTGEN.CMD	PRTGEN.$
ED3.CMD	ED3.$
HELP.DAT	HELP.DAT

Before SCREDITOR III can actually be used, CONGEN, KEYGEN and PRTGEN must be run. These programs build data files which are required for SCREDITOR III to start up in your system. Each program is described in detail in later sections of this manual. Once these programs hae been run, the installation is complete.

OS-9 VERSION -

In OS-9 systems, copy CONGEN, KEYGEN, PRTGEN and ED3 to the CMDS directory on drive D0 (see the note in the addendum to the TECHNICAL REFERENCE MANUAL if you do not have a drive D0 in your system). Next, use MAKDIR to build a directory named EDIT_DATA on D0. This directory will be used for all of the files created by the setup programs. Then copy HELP.DAT to this directory. After this, you must run CONGEN, KEYGEN and PRTGEN to complete the installation.

CONGEN, KEYGEN AND PRTGEN (INTRODUCTION)

There are many terminals, printers, and I/O configurations in use on micro-computing systems today. To write a program which can, without modification, support most of these various

combinations of hardware is essentially impossible. Some form of customization is required for almost every individual system in use.

In the past, the way in which this was most often done was to make machine language patches to the program being adapted. Unfortunately, many users do not have--or do not wish to attain--the level of proficiency at the machine code level which is required for this type of patching. SCREDITOR III is unique in that no machine language patching should ever be necessary.

When SCREDITOR III is executed, special files containing system adaptation information are loaded into data areas reserved for them, in order to define the general operating environment in which the program is to run. This method has been chosen in preference to the more common practice of 'overlaying' (where actual segments of program code are changed by loading other files on top of the original code) in order to maintain complete 'ROM-ability' in SCREDITOR III.

The following paragraphs describe each of the setup programs in general.

CONGEN -

CONGEN is used to define the general keyboard type, screen type, certain system characteristics and some startup constants used by SCREDITOR III. SCREDITOR III will not execute without first running this program.

On FLEX and SSB systems, the data file which CONGEN creates will be named CONGEN.DAT, and will be built on the system drive.

On OS-9 systems, CONGEN builds a data file named CONGEN plus your user I.D. For instance, if you are user 18, your CONGEN data file will be named CONGEN00018. This data file is built in the EDIT_DATA directory on drive D0.

KEYGEN -

KEYGEN is used to define which keys on the keyboard will be used for each of the SINGLE KEY OPERATORS previously described. SCREDITOR III will not execute without first running this program. KEYGEN builds a special data file which contains the keyboard conversion table which SCREDITOR III will use to convert the keys that you assign for each OPERATOR to the codes which the program uses internally.

On FLEX and SSB systems, KEYGEN builds a data file named KEYGEN.DAT on the system drive.

On OS-9 systems, KEYGEN builds a data file named KEYGEN plus your user I.D. For instance, if you are user 18, your KEYGEN data file will be named KEYGEN00018. This data file is built in the EDIT_DATA directory on drive D0.

PRTGEN -

PRTGEN defines special codes which will be used by your printer such as the NEW LINE string, the printer control code imbedments used by the CC command, default page data including top margin, left margin bottom margin and page length. SCREDITOR III will not execute if PRTGEN is not run.

On FLEX and SSB systems, the data file which PRTGEN creates will be named PRTGEN.DAT, and will be built on the system drive. The FLEX and SSB versions of PRTGEN also include questions about your printer initialization and output character vectors. Although the default PRTGEN.DAT file must exist on the system drive, additional data files with other names may also be created. This would allow you to create a separate file for each mode on a multi-mode specialty printer and switch modes within SCREDITOR III using the LOAD PRINTER DATA COMMAND.

On OS-9 systems, PRTGEN builds a data file named PRTGEN plus your user I.D. For instance, if you are user 18, your PRTGEN data file will be named PRTGEN00018. This data file is built in the EDIT_DATA directory on drive D0. The OS-9 version of PRTGEN includes a question about the printer path. Although the default PRTGEN data file must exist for SCREDITOR III to start, you may create other data files as noted in the comments on FLEX and SSB systems in the previous paragraph. Again, to use these files, you would execute the LOAD PRINTER DATA COMMAND.

The following sections contain detailed information on the operation of each of the customization programs.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

GENERAL

As was mentioned previously, SCREDITOR III is completely ROM-able. To allow this, the program must be given enough information about your system to allow it to configure itself. This information is provided in three special data files. The first data file loaded is created by the CONGEN program.

CONGEN OPERATION

When CONGEN is run, a series of questions about your system will be asked. When all of the questions have been answered, the program will search the system disk for a file named CONGEN.DAT (FLEX and SSB), or CONGEN plus your five-digit user I.D. (i.e., CONGEN00001) in the EDIT_DATA directory on drive D0 (OS-9 version). If found, it will be deleted. If not found, or once deleted, a new data file with the same name will be created, and the new data will be placed in it.

CONGEN QUESTION DESCRIPTIONS

In the descriptions which will follow of the questions which CONGEN asks, each question is shown exactly as it will be presented by CONGEN. The questions shown with (FLEX and SSB) typed at the right margin are asked only by those two versions of the program. The questions shown with (OS-9) typed at the right margin are asked only by that version of the program. Any question not specifically marked will be asked by all versions of the program.

CONGEN ENTRY METHOD

The line input routine in your DOS is used by CONGEN for the actual entry of the data, allowing you to edit the information before giving it to CONGEN. Each question must be exactly answered. When you have entered the information for a given question, the RETURN key should be struck to pass the data to CONGEN. If you decide to abort the CONGEN operation before completion, you should type the letter Q followed by a carriage return in answer to any question. Control will immediately return to DOS.

The characters in parentheses in each question indicate the type of information you should type in response to the question, as described in the following paragraphs:

(HHHH) indicates that four hexidecimal digits (0-9, A-F) are needed to answer the question. If fewer or more than four digits are typed, or a non-hex digit is entered, the question will be repeated.

(HH) indicates that two hexidecimal digits are needed to answer the question. If fewer or more are typed, or if a non-hex digit is entered, the question will be repeated.

(DD) indicates that one OR two decimal digits are needed to answer the question. If more than two digits are typed, or a non-decimal digit is entered, the question will be repeated. One digit may be typed where appropriate or convenient.

(DDD) indicates that from one to three decimal digits are needed to answer the question. If fewer than one or more than three digits are typed, or a non-decimal digit is entered, the question will be repeated.

(1-x) indicates that a number from 1 to whatever is displayed for x should be entered. If zero, or a number higher than x is entered, or any non-decimal value, the question will repeat.

(1-x BYTES) indicates that from one to the number of bytes displayed in the question, consisting of two hexidecimal digits each, and separated by commas (no other delimiter is acceptable) must be entered. If fewer than one or more than the number of bytes requested are entered, or if a non-hex digit is entered, the question will be repeated. A typical five-byte entry might look like:

```
1B,54,46,59,4A
```

(C) indicates that a single displayable ASCII character should be entered. If more than one character is entered the question will be repeated.

(Y or N) indicates that you should type Y if the answer to the question is affirmative, N if not. Any other character will cause the question to repeat (lower case Y or N is acceptable).

(LINE) indicates that you will be entering an entire command line. This response is used by the START-UP COMMAND LINE and RETURN COMMAND LINE questions. The length of your entry will be limited by the DOS under which SCREDITOR III is running; e.g., SSB DOS will limit you to about 127 characters.

CONGEN QUESTIONS

The following paragraphs describe each question in detail.

START OF BUFFER MEMORY (HHHH) - (SSB and FLEX)

This hexidecimal number is the first address used by SCREDITOR III for its buffers. If you need space to make custom modifications to SCREDITOR III (such as might be required by special printer drivers), this number may be adjusted to leave the required amount of room on top of SCREDITOR III. To determine the value to enter, use your MAP or FIND utility, add the space you need to the last load address of SCREDITOR III, and use the resulting value in answer to this question.

DO NOT ADD MODIFICATIONS TO SCREDITOR III IN THE TRANSIENT COMMAND AREA, AS THE PROGRAM USES THAT SPACE DURING START-UP.

If you will not be modifying this value and wish to use the address immediately after SCREDITOR III (the normal situation), enter 0000, and SCREDITOR III will use its own start of buffer value automatically (0000 is NOT the same as memory address $0000!).

END OF BUFFER MEMORY (HHHH) - (SSB and FLEX)

This hexidecimal number is the last address used by SCREDITOR III for its buffers. If you wish SCREDITOR III to use the default MEMAX (SSB) or MEMEND (FLEX) values, enter 0000 in response to this question. If you enter any number other than 0000, your answer will be interpreted as the ABSOLUTE address of the last byte of memory which SCREDITOR III can use during operation. Be sure that you do not specify a value which would overlap some other program that should not be destroyed, or overlap I/O space. Also, if you are not entering 0000, the value you must enter must be at least 6k higher than the last load address of SCREDITOR III, as determined by using FIND or MAP, or the ABSOLUTE address you entered in response to the last question (if you entered something other than 0000).

If you have specified the default value by entering 0000 and MEMEND or MEMAX is not defined (contains 0000), SCREDITOR III will not be operational, will post an error message and will abort back to DOS.

SYSTEM EXIT VECTOR (HHHH) - (SSB and FLEX)

As a programming aid, SCREDITOR III supports an EX command which allows you to exit to the system monitor when desired. If a non-zero value is entered for this question, the EX command will be active. If 0000 is entered, the EX command will not operate.

- NOTE -

For 6809 systems, the address given in answer to this question must be the actual entry to the system monitor, not the indirect jump which is referenced in most system monitor documentation. For instance, in SSB Chieftan systems with MON69D, the monitor entry point listed is F814, but the actual entry point is FB42. To find the actual entry point into a monitor which uses an indirect jump table (such as MON69, S-BUG), examine the address given in your monitor's manual and use the contents of the address rather than the address itself. REMEMBER, THIS ONLY APPLIES TO MONITORS WHICH USE AN INDIRECT JUMP TABLE ENTRY POINT SYSTEM. If you aren't sure, enter 0000 and ignore the command in SCREDITOR III.

THE ADDRESS ENTERED IN RESPONSE TO THIS QUESTION MUST NEVER BE THE WARM ENTRY TO YOUR DOS. DOS IS NOT A SYSTEM MONITOR, AND YOU RUN A GOOD CHANCE OF BLOWING UP A DISK IF YOU TRY THIS.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

SCREEN TYPE (1-2) - (SSB and FLEX)

This number designates the type of display you are using, as follows:

1 - GENERAL SERIAL TERMINAL
2 - EXTERNAL CHARACTER DISPLAY ROUTINE

One should be entered for all terminals operating through a serial port.

Two should be entered if you are using an external routine to pass characters to your display device (as would be the case with a memory-mapped display).

ADDRESS OF SCREEN PORT (HHHH) - (SSB and FLEX)

If you answer one to the SCREEN TYPE question, this question will be asked. Your answer should be the address of the serial port to which your display is attached. Typical answers are given in the addendum at the end of this manual.

SCREEN DRIVERS COMPATIBLE (Y OR N) - (SSB and FLEX)

If you answer two to the SCREEN TYPE question, this question will be asked. This question is asked simply for completeness since SCREDITOR III will not work if the drivers do not support cursor postioning, etc... If you cannot answer yes to this question, you will have to do some work to your system before SCREDITOR III can be used.

If you answer N to this question, CONGEN will immediately abort.

A number of driver source files for some of the more popular memory-mapped display boards are supplied with the SSB and FLEX versions of SCREDITOR III. You can select one of these, change the origin to an address which will be out of the way in your system, make any changes necessary to exactly match your board, assemble the file, append it to SCREDITOR III, and use its address as the answer to the next question.

Although we supply these source files as a customer convenience, we do not provide support for the installation, debugging and operation of this configuration. We assume that if you have something like a memory-mapped display you have had to teach yourself enough assembly-language programming in installing the board to be able to use these files.

We do not supply these source files for the OS-9 version of SCREDITOR III since most users do not have the necessary facilities to modify and assemble such files.

ADDRESS OF SCREEN OUTPUT (HHHH) - (SSB and FLEX)

If the answer to the SCREEN TYPE question was two, and you answered Y to the preceding question, this question will be asked. You should supply the entry address of the routine to which a character is sent for display or to control your display device.

The character being sent to the routines will be contained in the A-register. No registers need to be preserved other than the return stack. The screen output routine must end in an RTS, or everything will blow up.

ADDRESS OF SCREEN INIT (HHHH) - (SSB and FLEX)

If the answer to the SCREEN TYPE question was two, and you answered Y to the compatibility question, this question will be asked. You should supply the entry address of the routine which initializes your display board.

No registers need to be preserved by this routine.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

TERMINAL SELECTION GUIDE - THE FOLLOWING TERMINALS HAVE BEEN INCORPORATED DIRECTLY INTO CONGEN AT THIS TIME. IF YOUR TERMINAL IS ONE OF THESE, TYPE THE NUMBER BESIDE THE NAME. IF NOT, ENTER 0.

(LIST OF TERMINALS)

TERMINAL IDENTIFICATION NUMBER (DD) -

This rather lengthy question has been added to CONGEN to allow you the luxury of skipping a number of the questions which follow. If your terminal is included in the list, type the number by it and hit RETURN. If not, type 0. The list is being changed on a regular basis, and so is not reproduced here. In the questions which follow, if the question is answered by the TERMINAL SELECTION GUIDE QUESTION, an asterisk will appear in the right-most column after the question. If you have selected one of the listed terminals, the questions so marked will not be asked.

TERMINAL USE X-ON/X-OFF? (Y OR N) - *

Some terminals (notably the DEC VT-100) require that handshaking be done on a continuous basis as characters are sent to the screen. The most often-encountered handshaking method is called X-ON/X-OFF. With this method, as characters are sent to the screen, the keyboard input port is monitored for the receipt of a particular control code (the X-OFF character). When received, the transmission of characters must immediately stop until another character is received from the terminal (the X-ON character). When this second character is received, transmission may resume.

If your terminal requires this type of handshaking, answer Y to the question.

TERMINAL X-OFF CHARACTER (HH) - *

This question is only asked if you answered Y to the previous question. Enter the hexidecimal value of the character the terminal sends to stop transmission (13 for the DEC VT-100).

TERMINAL X-ON CHARACTER (HH) - *

This question is only asked if you answered Y to the X-ON/X-OFF question. Enter the hexidecimal value of the character the terminal sends to re-start transmission (11 for the DEC VT-100).

NUMBER OF ROWS PER SCREEN (DDD) - *

This question requests the number of rows (lines) which are displayed on your screen. This number should be the actual number of lines of text information your screen can display (excluding such things as a status line on some terminals). SCREDITOR III will support virtually any screen length from four lines to 255 lines. You may enter either two or three digits in answer to this question. For most popular terminals, the answer would be 24 (24 or 25 by 80 displays).

NUMBER OF COLUMNS PER SCREEN (DD) - *

This question requests the number of columns (characters per line) which are displayed on your screen. SCREDITOR III can support any screen from 64 characters to 255 characters wide. You may enter either two or three digits in answer to this question. For most popular terminals, the answer to this question will be 80 (24 or 25 by 80 displays).

CURSOR POSITION TYPE (1-4) - *

There are five cursor positioning types supported by SCREDITOR III.

TYPE 1 - The type one cursor is for those terminals and driver programs which require that a character sequence be sent for the cursor row, and a separate sequence for the column, in that order (Y,X).

TYPE 2 - The type two cursor is for those terminals and driver programs which require that a character sequence be sent for the cursor column, and a separate sequence for the row, in that order (X,Y).

TYPE 3 - The type three cursor is for those terminals and driver programs which require that a single sequence be sent for cursor row and column, in that order (Y-X). This is the type which is supported by most serial terminals.

TYPE 4 - The type four cursor is for those terminals and driver programs which require that a single sequence be sent for cursor column and row, in that order (X-Y).

TYPE 5 - The type five cursor is designated for ANSI-STANDARD terminals.

ROW POSITION STRING (1-7 BYTES) - *

If you specified a type one or type two cursor, this question will be asked. The string of bytes which you supply will consist of those characters which must be sent before the cursor row address itself. For instance, if an ESCAPE character followed by the letter R and then followed by the number must be sent to position the cursor to a particular row, you would type 1B,52 followed by the RETURN key.

COLUMN POSITION STRING (1-7 BYTES) - *

If you specified a type one or type two cursor, this question will be asked. The string of bytes which you supply will consist of those characters which must be sent before the cursor column address itself, as in the ROW POSITION question.

CURSOR POSITION STRING (1-7 BYTES) - *

If you specified a type three or type four cursor, this question will be asked. The string of bytes which you supply will consist of those characters which must be sent before the cursor row and column (or column and row) address itself.

For instance, many terminals (such as the TELEVIDEO's and the SOROC IQ-120) require that an escape code followed by an equals sign be sent to indicate that the cursor position will be sent. For these terminals, you would enter 1B,3D followed by the RETURN key.

CONTROL SEQUENCE INTRO. (1-7 BYTES) - *

If you specified a type five cursor, this question is asked. The CONTROL SEQUENCE INTRODUCER is a character or characters which tells ANSI-STANDARD terminals that a control sequence is being sent. For instance, to position the cursor on the DEC VT-100 in ANSI mode, the sequence introducer is $1B,$5B.

CONTROL SEQUENCE SEPARATOR (HH) - *

If you specified a type five cursor, this question is asked. The CONTROL SEQUENCE SEPARATOR is a single character which separates parameters in a control sequence. For instance, for the DEC VT-100 in ANSI mode, the sequence separator is a semi-colon ($3B).

CONTROL SEQUENCE TERMINATOR (HH) - *

If you specified a type five cursor, this question is asked. The CONTROL SEQUENCE TERMINATOR tells ANSI-STANDARD terminals that the control sequence is complete, and also generally describes what the control sequence will accomplish. For instance, for the DEC VT-100 in ANSI mode, the terminator for cursor positioning is an upper case H ($48).

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires nulls after positioning the cursor, enter the number in answer to this question. If none are needed enter 0. The maximum number is 255.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

CURSOR COLUMN BIAS (HH) - *

Many non-ANSI terminals will not accept an absolute value for cursor column position, but rather use the ASCII character set in a unique way. For instance, columns zero through 4F might be represented by characters from a space code ($20) through lower case O ($6F). In other words, a space code ($20) stands for a zero. This is the bias value that you would enter in answer to this question. This question is not asked for type five cursoring.

CURSOR ROW BIAS (HH) - *

The row bias is entered and determined in the same manner as the COLUMN BIAS, and is not asked for type five cursoring.

INSERT LINE OK? (Y OR N) - *

Many newer terminals allow an escape-type sequence to be sent which will cause the screen to scroll down from the current line (current line moves down), and line on which the cursor resides (the current line) to be blanked. If your terminal supports this function, enter Y in answer to this question.

INSERT LINE STRING (1-7 BYTES) - *

If you answered Y to the preceding question, this question will be asked. The string you enter should be the actual sequence of hexidecimal bytes which must be sent to the screen to cause the insert line. For instance, in the case of the TELEVIDEO 912, an escape character followed by the letter E must be sent. If you were running this terminal, you would enter 1B,45 followed by the RETURN key.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

DELETE LINE SUPPORTED? (Y OR N) - *

Many newer terminals allow an escape-type sequence to be sent which will cause the line on which the cursor resides to be deleted, and the rest of the screen to be moved up, generating a blank line on the bottom of the screen. If your terminal supports this function, enter Y to this question.

DELETE LINE STRING (1-7 BYTES) - *

If you answered Y to the preceding question, this question will be asked. The string you enter should be the actual sequence of hexidecimal bytes which must be sent to the screen to cause the delete line, as in the INSERT-LINE STRING.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

CLEAR TO END OF LINE OK? (Y OR N) - *

If your terminal will allow you to clear from the cursor to the end of the current line (as opposed to clearing the entire line), you would answer Y to this question.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

CLEAR TO EOL STRING (1-7 BYTES) - *

If you entered Y to the preceding question, you must answer this one. The answer to this question will be the string of bytes which will do the clear. For the TELEVIDEO 912, for instance, an escape code followed by an upper case T is used, and the string would be entered as 1B,54 followed by the RETURN key.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

CLEAR TO END OF SCREEN OK? (Y OR N) - *

If your terminal will allow you to clear from the cursor to the end of the screen (as opposed to clearing the entire screen), answer Y to this question.

CLEAR TO EOS STRING (1-7 BYTES) - *

If you answered Y to the preceding question, you will answer this one. The answer to this question will be the string of bytes which cause this action. For the TELEVIDEO 912, an escape code followed by an upper case Y is used, and the string would be entered as 1B,59 followed by the RETURN key.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

TERMINAL NEW LINE (1-7 BYTES) - *

This is the string of characters which must be sent to the screen to cause the cursor to move to the left side of the screen and down one line. If the cursor is on the bottom line of the screen when this sequence is received, a scroll must occur. For most terminals, a carriage return followed by a line feed satisfy this question, and would be entered as 0D,0A followed by the RETURN key.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

RING TERMINAL BELL (1-7 BYTES) - *

Most terminals are equipped with an audible alerting device, generally called a bell. SCREDITOR III makes considerable use of the bell in announcing error conditions. If your terminal or screen drivers support a bell function, you would enter the string of bytes which would cause the bell to ring. For most terminals, the ASCII bell code is used, and would be entered as 07 followed by the RETURN key. If your terminal or screen drivers do not support the bell function, you would enter 00 followed by the RETURN key.

NUMBER OF NULLS NEEDED (DDD) - *

If your terminal requires that nulls be sent after the preceding sequence, enter the number of nulls. If none are needed, enter 0. The maximum number is 255.

CONGEN - SYSTEM AND TERMINAL DATA GENERATOR

COMMAND SEPARATOR (EOL) (C) -

This single ASCII character is the character used to separate multiple command entries in ESCAPE (COMMAND) MODE. It has been found that a semi-colon (;) is generally the most convenient character to use for this purpose. Enter the character followed by the RETURN key.

START-UP COMMAND LINE (LINE) -

When SCREDITOR III starts up, a number of default settings and MODES are defined. This line will be used as the initial command line to modify these settings, saving you the trouble of typing your first command line every time you call SCREDITOR III. The addendum at the end of this manual contains details on the information you will type for this entry.

If you are not going to define a start-up command line, hit return when this question is asked.

RETURN COMMAND LINE (LINE) -

When you LOG or ABORT at the end of an edit session, SCREDITOR III has the capability of passing a command line back to DOS for subsequent execution by DOS. This allows you to use SCREDITOR III as part of a larger package of programs. Details on this capability is contained in the addendum at the end of this manual.

If you are not going to return a command line to DOS, hit return when this question is asked.

This completes the question descriptions. As indicated previously, after the last question is asked, the information you entered will be saved to the CONGEN data file and control will return to DOS.

KEYGEN - KEYBOARD DATA GENERATOR

GENERAL

The first data file loaded was created by the CONGEN program. The next, which contains keyboard data, is created by KEYGEN.

KEYGEN OPERATION

The operation of KEYGEN should be thought of as running in two sections, even though the program is not actually run in two parts. The first section asks a number of questions about your system and asks for a keyboard delay constant (discussed later) in the same manner as the CONGEN program.

The second section is used to actually define your keyboard layout, and operates quite differently. When the second section is running, the function of the requested key is displayed, to which you will respond by typing the actual key which you will be using to perform the function. As soon as the last key has been struck, the data entry sections of the program are done.

KEYGEN will then search the system disk for a file named KEYGEN.DAT (FLEX and SSB), or KEYGEN plus your five-digit user I.D. (i.e., KEYGEN00001) in the EDIT_DATA directory on drive D0 (OS-9 version). If found, it will be deleted. If not found, or once deleted, a new data file with the same name will be created, and the new data will be placed in it.

KEYGEN QUESTION DESCRIPTIONS

In the descriptions which will follow of the questions which KEYGEN asks, each question is shown exactly as it will be presented by KEYGEN. The questions shown with (FLEX and SSB) typed at the right margin are asked only by those two versions of the program. The questions shown with (OS-9) typed at the right margin are asked only by that version of the program. Any question not specifically marked will be asked by all versions of the program.

KEYGEN ENTRY METHOD (FIRST SECTION)

The line input routine in your DOS is used by KEYGEN for the actual entry of the data in the first section of questions, allowing you to edit the information before giving it to KEYGEN. Each question must be exactly answered. When you have entered the information for a given question, the RETURN key should be struck to pass the data to KEYGEN. If you decide to abort the KEYGEN operation before the completion of this section, you should type the letter Q followed by a carriage return in answer to any question. Control will immediately return to DOS.

The characters in parentheses in each question indicate the type of information you should type in response to the question, as described in the following paragraphs:

(HHHH) indicates that four hexidecimal digits (0-9, A-F) are needed to answer the question. If fewer or more than four digits are typed, or a non-hex digit is entered, the question will be repeated.

(HH) indicates that two hexidecimal digits (0-9, A-F) are needed to answer the question. If fewer or more than two digits are typed, or a non-hexidecimal character is entered, the question will be repeated.

(1-x) indicates that a number from 1 to whatever is displayed for x should be entered. If zero, or a number higher than x is entered, or any non-decimal value, the question will repeat.

(Y or N) indicates that you should type Y if the answer to the question is affirmative, N if not. Any other character will cause the question to repeat (lower case Y or N is acceptable).

KEYGEN ENTRY METHOD (SECOND SECTION)

After the first part of the questions have been asked, the second will begin. In this section, each SINGLE-KEY OPERATOR defined in this version of SCREDITOR III will be presented. You will

type the actual key which you will be using for the displayed function. The prompt for your entry will look like this:

```
CURSOR LEFT -
```

When you hit the key, KEYGEN will determine if the key is a valid entry. Invalid conditions include:

1) The first (or only) character received was not an ASCII control code or a 'META' key, if you are using them.

2) The character (or characters) received duplicated a previous entry.

3) More than five characters were received in a single burst from the keyboard.

Whenever you hit any key, the code(s) it generates will be displayed as:

```
CURSOR LEFT - 1B,41,0D
```

This shows that the key you typed in response to the CURSOR LEFT prompt generated a sequence of codes consisting of an escape character ($1B), an upper-case A ($41) and a carriage return ($0D).

If the first error listed above occurs, the display will look like this:

```
CURSOR LEFT - 41 ****

ILLEGAL CODE. PLEASE RE-SELECT!

CURSOR LEFT -
```

This shows that the key you struck generated an upper case A instead of a valid control code (or sequence starting with a control code).

If the second error listed above occurs, the display will look like this:

```
CURSOR RIGHT - 1B,41,0D ****

CURSOR LEFT USED THIS CODE. PLEASE RE-SELECT!

CURSOR RIGHT -
```

This shows that the key you typed in response to the CURSOR RIGHT prompt generated the same code as CURSOR LEFT, and that you should select another key.

If the third error listed above occurs, the following message will be displayed:

```
CURSOR RIGHT - 01,02,03,04,05 ****

TOO MANY CHARACTERS RECEIVED. PLEASE RE-SELECT!

CURSOR RIGHT -
```

This message will generally only occur with keyboards which have roll-over capability; i.e., will accept two nearly-simultaneous keystrokes, sending one immediately after the other with no intervening time between the codes. Try hitting the key again if this happens.

If a mistake is made during this second section of the program, or if you change your mind about the key assignments you have selected, typing the letter C will clear all of the entries and re-start the section. If you decide to abort the KEYGEN run, type the letter Q in answer to any of the prompts.

SECTION ONE QUESTIONS

The following paragraphs describe in detail each question asked in the first section of the KEYGEN run.

KEYGEN - KEYBOARD DATA GENERATOR

KEYBOARD TYPE (1-6) - (SSB and FLEX)

Six keyboard configurations are supported by SCREDITOR III, as follows:

1 - ACIA SERIAL PORT WITHOUT INTERRUPTS
2 - PIA PARALLEL PORT WITHOUT INTERRUPTS
3 - ACIA SERIAL PORT USING INTERRUPTS
4 - PIA PARALLEL PORT USING INTERRUPTS
5 - EXTERNAL ROUTINE USING NE FOR CHARACTER PENDING
6 - EXTERNAL ROUTINE USING CS FOR CHARACTER PENDING

TYPE 1 - The type one port utilizes an ACIA for the I/O port, and the port will not interrupt, thus no keyboard queueing will be supported.

TYPE 2 - The type two port uses a PIA as the I/O device. The CA1 or CB1 bit is used as a character ready flag. (CA2/CB2 flags are not recognized by SCREDITOR III.) Keyboard queueing is not supported.

TYPE 3 - The type three port is the same as the type one port, but the port must be strapped for interrupts, the IRQ vector must be accessible for use, and any other devices in the system which might interrupt when interrupts are enabled must have handlers in place.

This configuration will allow up to sixteen characters to be entered "ahead" of SCREDITOR III by the use of interrupts and keyboard queueing, thus eliminating the delays in entry which would otherwise occur during word-wrap, etc...,

When an interrupt occurs and the keyboard port is not the interrupting device, SCREDITOR III will pass control to the vector which existed before it was loaded. If this occurs and external handlers are not in place, system lockup will occur. If you are not sure about the state of interrupts or hardware which may interrupt in your system, use the TYPE 1 port.

TYPE 4 - The type four port supports interrupts as with the type three port, but with a parallel keyboard interface as with the type two port. The same warning about other interrupting devices applies. If you aren't sure, use the TYPE 2 port.

TYPE 5 - The type five port uses external routines to handle keyboard entry. The type five port designation is for those external handlers which return an NE (not equal) condition when a key has been pressed and is ready to be read (such as the check keyboard status routine in FLEX). The keyboard handlers must NEVER echo characters to the screen, or the echo must be capable of being disabled, as detailed later.

Whenever possible, use the TYPE 1-4 keyboard assignments. TYPES 5 and 6 are only used when talking to the hardware port itself is impossible (see the note about this in the addendum to this manual).

TYPE 6 - The type six port uses external routines to handle keyboard entry like the type five port, but is designed to use handlers which return CS (carry set) when a character is pending and ready to be read (such as the check keyboard status routine in SSB DOS). Again, as with the TYPE 5 selection, the keyboard must not echo to the screen, the echo must be capable of being disabled, as detailed later.

Whenever possible, use the TYPE 1-4 keyboard assignments. TYPES 5 and 6 are only used when talking to the hardware port itself is impossible (see the note about this in the addendum to this manual).

ADDRESS OF KEYBOARD PORT (HHHH) - (SSB and FLEX)

When a type one through type four keyboard port is specified, this question is asked. The address supplied should be the address of the SIDE of the PIA or ACIA interface to which the keyboard is attached. In other words, if the keyboard interface is located at address $E040, and the B-side of the interface is being used, E042 would be entered for this question. Typical answers are given in the addendum at the end of this manual.

KEYGEN - KEYBOARD DATA GENERATOR

PORT SETUP WORD (HH) - (SSB and FLEX)

This two digit hex number is the value which is used to initialize the port in your system. This question will only be asked if you have specified a type 1 to 4 keyboard. Typical answers are given in the addendum at the end of this manual.

If you are using a type 1 or 3 port, and if you cannot determine from the documentation on your system which setup word should be used, try 15 (X16 systems) or 16 (X64 systems), as one of these two numbers will work for almost all terminals.

If you are using a type 2 or 4 port, the most often entered number will be 36 for keyboards using a positive-going strobe, or 34 for keyboards using a negative-going strobe. Either will probably work if your keyboard latches data.

KEYBOARD USE META KEYS? (Y OR N) -

If you are using a keyboard with 'META' keys as described in the INSTALLATION section of this manual, you should answer Y to this question. When Y is entered, SCREDITOR III will not mask the high bit of any character received from the keyboard. If you answer N to this question, SCREDITOR III automatically strips the high bit from each byte received from the keyboard before decoding it.

IF YOU ANSWER Y TO THIS QUESTION, IT IS MANDATORY THAT THE PORT SETUP WORD REQUESTED IN THE PREVIOUS SECTION BE RIGHT OR THE KEYBOARD WILL NOT DO ANYTHING RIGHT!

SYSTEM IRQ VECTOR ADDRESS (HHHH) - (SSB and FLEX)

If you specified a type 3 or 4 keyboard, this question will be asked. The hexidecimal address you give must be the address into which the address of interrupt handlers will be placed to be recognized by the system monitor when an interrupt occurs; that is, the address from which the system monitor takes the address to which it passes control when an interrupt occurs.

In clarification, when an IRQ-type interrupt occurs, 68xx processors automatically load the contents of $FFF8 into the program counter. This is normally the address of a vectoring routine in the system monitor. This vectoring routine then takes the contents of a 16-bit address from a scratchpad area and does an indexed jump to that address. The address of this scratchpad location is the address you should use to answer this question. Typical answers are given in the addendum at the end of this manual.

ADDRESS OF KEYBOARD CHECK (HHHH) - (SSB and FLEX)

If you have specified a type five or six keyboard, this question must be answered. This is the address of the routine which returns an NE (not equal) or CS (carry set) condition whenever a key has been pressed but not read. This routine must not actually read the character. READ THE WARNING IN THE SYSTEM MONITOR EXIT QUESTION ABOUT INDIRECT JUMP TABLES.

No register need to be preserved by this routine, but the condition code register must return the proper status.

ADDRESS OF GET CHARACTER (HHHH) - (SSB and FLEX)

If you have specified a type five or six keyboard, this question must be answered. This is the address of the routine which actually reads the key which was detected using the KEYBOARD CHECK routine. READ THE WARNING IN THE SYSTEM MONITOR EXIT QUESTION ABOUT INDIRECT JUMP TABLES.

The character received by the keyboard must be returned in the A-register. No other registers need be preserved.

MUST ECHO BE CONTROLLED? (Y OR N) - (SSB and FLEX)

If you specified a TYPE 5 or 6 keyboard, this question will be asked. If your system normally automatically echo's any characters entered at the keyboard to the screen, there must be a way of disabling the echo action or SCREDITOR III will not run properly. If you system echo's, you

should answer Y to this question, and provide the information requested by the following questions.

WARNING: THIS SERIES OF QUESTIONS DOES NOT REFER TO THE ECHO FLAG IN FLEX WHICH ECHOS CHARACTERS TO THE SCREEN WHEN A FILE IS BEING SAVED DURING SPOOLING.

ADDRESS OF ECHO CONTROL (HHHH) - (SSB and FLEX)

If you have specified a type five or six keyboard and answered the previous question Y, this question will be asked. Since SCREDITOR III totally controls the screen during editing, it is mandatory that no external routines echo characters to the screen. Many system monitors and memory-mapped display handlers will echo characters to the screen unless they are specifically told not to. The echo is most often turned on and off by setting a flag in memory. The address of this flag should be supplied in answer to this question. The flag may be called a half/full duplex flag, an echo control flag, or some such designation depending upon your system monitor or DOS.

ECHO ON CHARACTER (HH) - (SSB and FLEX)

The two-digit hex byte supplied in answer to this question is the byte, which, when placed in the ECHO CONTROL ADDRESS, will enable the echo'ing of characters from the keyboard to the screen. This question is only asked for type 5 and 6 keyboards.

ECHO OFF CHARACTER (HH) - (SSB and FLEX)

The two-digit hex byte supplied in answer to this question is the byte, which, when placed in the ECHO CONTROL ADDRESS, will disable the echo'ing of characters from the keyboard to the screen. This question is only asked for type 5 and 6 keyboards.

KEYBOARD DELAY CONSTANT (HH) -

The two-digit hex byte supplied in answer to this question is used in a time-delay loop within SCREDITOR III to decode keys which generate multiple codes (function keys). A description of the decoding method will clarify the question.

Whenever a control character is received from the keyboard, a special routine is called which will continuously check for another character for about four milliseconds. If another character is received within that time, it will be accumulated. This action goes on until no character is received within the four milliseconds, or five characters have been received. Once the accumulation is complete, the character or characters received will be used en-mass as a single entry. If a matching entry exists in the table which KEYGEN creates and is loaded on startup, the position in the table is used as the actual internal OPERATOR code. For instance, if the characters 1B,41,0D were received, and the ninth position in the KEYGEN table contained these three characters, the result would be a value of eight (ninth value, base zero), which is used internally in SCREDITOR III as a DESTRUCTIVE BACKSPACE.

Two factors will determine your answer to this question. First, the timing is done is software; therefore, the number entered will be dependent upon the clock speed in your system. If you are running a one mHz clock, the number must be one half the value needed to provide the same timing length as a system using a two-mHz clock.

Second, if you are not planning on using any function keys, the value entered should be 1, the minimum value possible. This will minimize the possibility of two sequential keystrokes being interpreted as a part of a character sequence from a single key. If, on the other hand, you will be using function keys, the value should be as small as possible and still decode the keys properly.

For one mHz systems using function keys, a value of 20 to 30 should be a good starting point. For two mHz systems, a value of 40 to 50 should be acceptable. If, once you have SCREDITOR III running, you find that your function keys are inoperative or intermittent, increase the value by re-running KEYGEN. If, on the other hand, the function keys work when hit one at a time, but errors occur when you use them repeatedly (with a repeating key), decrease the value.

KEYGEN - KEYBOARD DATA GENERATOR

SECTION TWO QUESTIONS

The following is a complete listing of the prompts which will be presented by the second section of the KEYGEN operation. As stated previously, you will type the actual key which you are going to use for each of the functions listed.

If you desire to re-start the questions, type the letter C. If you want to abort KEYGEN while answering these questions, type the letter Q.

CURSOR LEFT -
MELD PARAGRAPH -
SCROLL SCREEN UPWARD -
DELETE TO END OF LINE -
INSERT CHARACTER MODE -
INSERT SPACE -
GO TO MARKED LINE -
DESTRUCTIVE BACKSPACE -
TAB CURSOR RIGHT -
ACTIVATE SYMBOL -
SPLIT PARAGRAPH -
PAGE SCREEN DOWNWARD -
NEW LINE -
PAGE SCREEN UPWARD -
SET/CLEAR TAB -
DELETE LINE -
TAB TO MARGIN -
SCROLL SCREEN DOWNWARD -
CURSOR RIGHT -
CONVERT TO UPPER CASE -
INSERT LINE MODE -
CONVERT TO LOWER CASE -
CURSOR UP -
DELETE CHARACTER -
DELETE WORD -
CURSOR DOWN -
ESCAPE (ENTER COMMAND MODE) -
TAB TO NEXT WORD -
TAB TO END OF LINE -
TAB LEFT -
TAB TO PREVIOUS WORD -

This completes the question descriptions. As indicated previously, after the last question is asked, the information you entered will be saved to the KEYGEN data file and control will return to DOS.

PRTGEN - PRINTER DATA CONSTANTS GENERATOR

GENERAL

The third data file loaded by SCREDITOR III contains information about your printer, and is created by PRTGEN.

In the paragraphs which follow, 'control code', or just 'code', will refer to the code which you imbed in your text. 'Control sequence' will refer to the actual character or characters which the code stands for; i.e., the actual data sent to the printer.

PRTGEN OPERATION

When PRTGEN is run, several questions will be asked about your system and printer. SSB and FLEX versions will request the address of the printer character output and initialization routines used by your hardware drivers. The OS-9 version will request the pathname of your printer (such as /P2, etc...). You will also be asked for default page dimensions, and for both the 'stock' and any special control sequences you will be using with your printer.

When you have answered all of the questions, the program will search the system disk for a file named PRTGEN.DAT (FLEX and SSB), or PRTGEN plus your five-digit user I.D. (i.e., PRTGEN00001) in the EDIT_DATA directory on drive D0 (OS-9 version). If found, it will be deleted. If not found, or once deleted, a new data file with the same name will be created, and the new data will be placed in it.

PRTGEN QUESTION DESCRIPTIONS

In the descriptions which will follow of the questions which PRTGEN asks, each question is shown exactly as it will be presented by PRTGEN. The questions shown with (SSB and FLEX) typed at the right margin are asked only by those two versions of the program. The questions shown with (OS-9) typed at the right margin are asked only by that version of the program. Any question not specifically marked will be asked by all versions of the program.

PRTGEN ENTRY METHOD

The line input routine in your DOS is used by PRTGEN for the actual entry of the data, allowing you to edit the information before giving it to PRTGEN. Each question must be exactly answered. When you have entered the information for a given question, the RETURN key should be struck to pass the data to PRTGEN. If you decide to abort the PRTGEN operation before completion, you should type the letter Q followed by a carriage return in answer to any question. Control will immediately return to DOS.

The characters in parentheses in each question indicate the type of information you should type in response to the question, as described in the following paragraphs:

(HHHH) indicates that four hexidecimal digits (0-9, A-F) are needed to answer the question. If fewer or more than four digits are typed, or a non-hex digit is entered, the question will be repeated.

(HH) indicates that two hexidecimal digits are needed to answer the question. If fewer or more are typed, or if a non-hex digit is entered, the question will be repeated.

(DDD) indicates that from one to three decimal digits are needed to answer the question. If fewer than one or more than three digits are typed, or a non-decimal digit is entered, the question will be repeated.

(Y or N) indicates that you should type Y if the answer to the question is affirmative, N if not. Any other character will cause the question to repeat (lower case Y or N is acceptable).

SEQUENCES Each question will allow you to enter from zero to six bytes of data. Each answer must be entered with two-character hexidecimal responses separated by commas, as in this example:

(CODE 0) PRINTER START-UP - 1B,41,0D

PRTGEN - PRINTER DATA CONSTANTS GENERATOR

No other delimiter is allowed. If any delimiter other than a comma is entered, or a non-hex digit is entered, or if more than six bytes are entered, the question will be repeated. Any sequence which will not be defined is skipped by simply hitting a carriage return.

When the strings are actually used, a null is sensed by SCREDITOR III as the end of the entry; therefore, if you need a null as part of the control sequence itself (as with the Epson printers with GRAFTRAX option), you may so indicate by entering FF whenever you want a null, as in this example:

(CODE 0) PRINTER START-UP - 0C,FF,20,0D

This entry will be sent to the printer as 0C,00,20,0D. Note that you do not actually enter the terminating null...this is done by PRTGEN itself. Because of the fact that $FF is converted to a null by SCREDITOR III, a true $FF cannot be entered.

Those questions marked

NOT DEFINED *****

should be answered by simply hitting return.

PRTGEN QUESTIONS

The list of questions asked by PRTGEN follows. You should read these questions before actually running PRTGEN, and locate the answers in your printer and system documentation.

PRINTER OUTPUT ADDX (HHHH) - (SSB and FLEX)

This is the address which should be called as a subroutine from SCREDITOR III to send a character contained in the A-register to your printer. Generally, the address will be CCE4 for FLEX-9 systems, ACE4 for 6800 FLEX systems, and D312 for all SSB systems. No registers need to be preserved by this routine; however, the routine must end in an RTS or your system will go away. If you do not have a printer on your system you should enter 0000 in answer to this question. This will NOT defeat the print COMMANDS in SCREDITOR III (thus allowing you to send printed output to a file if desired), but will keep the system from locking up if a print COMMAND is inadvertently entered.

PRINTER INIT ADDX (HHHH) - (SSB and FLEX)

This is the address which should be called as a subroutine to initialize the hardware port and the printer before it is actually used. Typical addresses are CCC0 for FLEX-9 systems, ACC0 for 6800 FLEX systems, and D30F for all SSB systems. No registers need to be preserved by this routine; however, the routine must end in an RTS or everything goes out the window. If you do not need an initialization call, enter 0000 in answer to this question, and SCREDITOR III will never call the routine.

PRINTER PATH (1-31 CHARACTERS) - (OS-9)

This is the path to which the output of the print commands should be sent. Generally this will be the name of your printer path, but could be any compatible device in the system. Be sure that the path name is entered properly. For instance, if you were going to send the printed output to device P2, you would enter /P2. If, on the other hand, you were going to send the data to a file named P2 in the current data directory, you would simply enter P2. Note that the slash is important!

PRINTER TOP MARGIN (DDD) -

The decimal number you enter in response to this question is the number of blank lines which will be left at the top of each printed page when you have not defined a header for that page. The maximum value that may be entered for this question is a value such that the difference

between the printer page length (entered below) and the sum of this value and the bottom margin (entered below) will be five or larger. In no case may the entry exceed 255.

PRINTER LEFT MARGIN (DDD) -

The decimal number you enter for this question will be used to leave a blank left margin on all printed lines. This value is included to overcome the fact that many tractor-fed printers will not allow you to mechanically set a left margin for printing, and start printing right on the left tear point. The maximum value which may be entered for this question is 255.

PRINTER BOTTOM MARGIN (DDD) -

The decimal number you enter in response to this question is the number of blank lines which will be left at the bottom of each printed page when you have not defined a footer for that page. The maximum value that may be entered for this question is a value such that the difference between the printer page length (entered below) and the sum of this value and the top margin (entered above) will be five or larger. In no case may this entry exceed 255.

PRINTER PAGE LENGTH (DDD) -

The decimal number you give for this question is the actual number of printable lines on a page. For instance, for a printer which prints six lines per inch, there are 66 lines on an eleven inch long page. The maximum value you may enter in response to this question is 255, and the minimum value is five more than the sum of the top and bottom margins entered above.

PRINTER SUPPORT LOWER CASE? (Y OR N) -

Some printers (such as the Centronics 101-A will not properly handle lower case letters. If yours is such a printer, enter N to this question. If your printer will accept lower case letters, even though it prints them in upper case, enter Y.

NULLS AFTER CR-LF (NEW LINE) (DDD) -

Many printers (such as teletype machines) require a delay after a command to start a new line. If your printer is one of these, enter the number of nulls needed. The maximum value is 255. If you need no nulls, enter zero.

CODE SEQUENCE QUESTIONS

The following questions are answered as described by the SEQUENCES description in the ENTRY METHOD section above. The complete list of questions asked by PRTGEN is given below. Those sequence questions which do not have a (CODE n) as the first part of the question are not imbeddable. As mentioned previously, CODE 26 (SSB and FLEX) or CODE 27 (OS-9) will display the NOT DEFINED ***** message, and will have no (CODE n) displayed.

```
(******)   PRINTER START-UP -
(CODE 1)    START UNDERLINE -
(CODE 2)      END UNDERLINE -
(CODE 3)     START BOLDFACE -
(CODE 4)       END BOLDFACE -
(CODE 5) START DOUBLE WIDTH -
(CODE 6)   END DOUBLE WIDTH -
(CODE 7)      OPERATOR STOP -
(******)  PRINTER BACKSPACE -
(******)  NOT DEFINED *****
(******)  NOT DEFINED *****
(******)  NOT DEFINED *****
(******)  NOT DEFINED *****
(******)   PRINTER NEW LINE -
(CODE 14)     USER FUNCTION -
(CODE 15)     USER FUNCTION -
```

PRTGEN - PRINTER DATA CONSTANTS GENERATOR

CONTROL SEQUENCE QUESTIONS (CONT'D)

(CODE 16) USER FUNCTION -
(CODE 17) USER FUNCTION -
(CODE 18) USER FUNCTION -
(CODE 19) USER FUNCTION -
(CODE 20) USER FUNCTION -
(CODE 21) USER FUNCTION -
(CODE 22) USER FUNCTION -
(CODE 23) USER FUNCTION -
(CODE 24) USER FUNCTION -
(CODE 25) USER FUNCTION -
(CODE 26) USER FUNCTION -
(CODE 27) USER FUNCTION -
(CODE 28) USER FUNCTION -
(CODE 29) USER FUNCTION -
(CODE 30) USER FUNCTION -
(CODE 31) USER FUNCTION -

ADDENDUM A - MISCELLANEOUS INFORMATION

ADDITIONAL INFORMATION ON CONGEN

SCREEN QUESTIONS (SSB and FLEX versions) -

If you are running a serial terminal (such as a SOROC, Televideo, Zenith, Heath, SWTPCo CT-82, ADDS, etc...) which communicates through a serial port, you will answer with one to the SCREEN TYPE question.

The TYPE 2 screen is only to be used with those systems which use a MEMORY-MAPPED DISPLAY (such as some GIMIX systems), and which have a program which makes the display look like a serial terminal in the way in which it handles cursoring and screen operations, or any screen output method using software routines rather than sending characters directly through a serial interface.

Even if you are using a TYPE 2 screen, it must support cursor addressing in one of the forms described in the CONGEN section of this manual.

SYSTEM QUESTIONS (SSB and FLEX versions) -

The following information is incomplete, but will help you in answering the system questions:

6800 SYSTEMS (USING SWT-BUG) -

MONITOR ENTRY	E0D0
KEYBOARD TYPE	1 OR 3
KEYBOARD PORT ADDRESS	8004
INTERRUPT ADDRESS	A000
SETUP WORD	11
SCREEN TYPE	1
SCREEN PORT ADDRESS	8004

6800 SSB SYSTEMS (USING SMART-BUG) -

MONITOR ENTRY	E0E3
KEYBOARD TYPE	1 OR 3
INTERRUPT ADDRESS	A000
KEYBOARD PORT ADDRESS	8008
SETUP WORD	16
SCREEN TYPE	1
SCREEN PORT ADDRESS	8008

6800 SSB SYSTEMS (USING CHIEF-BUG) -

MONITOR ENTRY	E0E3
KEYBOARD TYPE	1 OR 3
INTERRUPT ADDRESS	A000
KEYBOARD PORT ADDRESS	F7E8
SETUP WORD	16
SCREEN TYPE	1
SCREEN PORT ADDRESS	F7E8

6809 SWTPCo SYSTEMS (USING S-BUG) -

MONITOR ENTRY	F802 *
KEYBOARD TYPE	1 OR 3
KEYBOARD PORT ADDRESS	E004
INTERRUPT ADDRESS	DFC8
SETUP WORD	15
SCREEN TYPE	1
SCREEN PORT ADDRESS	E004

6809 SSB CHIEFTAN SYSTEMS (USING MON69D) -

MONITOR ENTRY -	F802 *
KEYBOARD TYPE	1 OR 3
KEYBOARD PORT ADDRESS	F7E8
INTERRUPT ADDRESS	F3C8
SETUP WORD	16
SCREEN TYPE	1
SCREEN PORT ADDRESS	F7E8

* Use the contents of this address as the answer to the question rather than the address itself.

START-UP COMMAND LINE

A new feature has been added to SCREDITOR III and CONGEN too recently to have been included in the updated TECHNICAL REFERENCE MANUAL. In the old versions of the programs, you were allowed to specify a number of start-up values such as default tabs, margins, and whether to start in TEXT or LINE MODE. The new versions of the programs have deleted these questions, and now you are allowed to enter an entire command line which SCREDITOR III will use at start-up just as if you had entered COMMAND MODE and typed it yourself. This allows you much greater freedom in setting your initial operating parameters.

ADDENDUM A - MISCELLANEOUS INFORMATION

The default parameters if no command line is entered are:

```
                EDIT MODE: LINE
      JUSTIFICATION MODE: LEFT
             COLUMN MODE: SINGLE
              LEFT MARGIN: 1
             RIGHT MARGIN: 60
            TAB SETTINGS: 11,21,31,41,51
         NUMBERS DISPLAY: OFF
       PAGE START DISPLAY: OFF
PRTGEN DATA FILE LOADED: PRTGEN.DAT (PRTGEN+USER I.D., OS-9 version)
 PRINTER PAGE-END PAUSE: OFF (CONTINUOUS PRINTING)
```

In order to modify these start-up settings, you would enter an initial command line to select the settings you want to exist when SCREDITOR III starts. If you are going to enter multiple COMMANDS in this start-up line, you must use the EOL character you defined in the COMMAND SEPARATOR (EOL) question asked earlier in the CONGEN run.

For instance, if the EOL character you defined was a semi-colon, and if you wanted to delete the first tab, set the right margin at column seventy, set TEXT MODE and ALL-JUSTIFY MODE, turn on PAGE PAUSE and load an alternate PRTGEN data file named SELECT, your line would look like:

```
TR; TS;RM#70;TE;JMA;PS;LP/SELECT/
```

The first two entries are OPERATORS executed from COMMAND MODE, and will move the cursor to the first tab (since the cursor is in column one on start-up), and perform a tab-set (which will clear the tab as it is already set). Then the right margin will be set, TEXT MODE will be turned on, ALL-JUSTIFY MODE will be selected, PAGE PAUSE will be turn on (since it is off at start-up), and, finally, the PRTGEN data file SELECT will be loaded. All of this will occur before you type the first key during editing!

RETURN COMMAND LINE

Another feature added since the new version of the TECHNICAL REFERENCE MANUAL was printed is the return command line. If you define this line entry during CONGEN, the line will be returned to DOS for execution when you perform a LOG or ABORT to close the edit session. This addition will allow SCREDITOR III to be called by, for instance, a master menu program, and when SCREDITOR III is done, it will cause DOS to re-execute the master menu. SCREDITOR III, therefore, can become an essentially integral part of other systems software.

As an example, if you were using SSB DOS and COMPUTERWARE BASIC, which allows you to enter a program name for BASIC to execute on start-up, and you wanted to return to BASIC directly from SCREDITOR III, you might enter the return command line line as:

```
BASIC,BOOKS
```

which would then cause DOS to load and execute BASIC, which would in turn load and execute BOOKS.BAS!

- NOTE -

If a disk error occurs on the main I/O files causing an abort to DOS, this command line will not be passed to DOS for execution, thus giving you a chance to clean up the mess before making another one!

MAKING THINGS FASTER

To make the use of CONGEN and PRTGEN easier, we suggest that you study the questions for the two programs while referring to your technical documentation, and build a response file using your BUILD command or your current editor. Once you have built the response file, you can then run CONGEN or PRTGEN much more easily. In addition, changes to your system (or even the correction of errors) will be less work using this method.

For instance, let us assume that you are running SSB DOS69 and SSB MON69D, and are using a TELEVIDEO terminal (and assume that this terminal were not one of the standard terminal selections), and will not be using keyboard interrupts. Your response file would look like this:

```
CONGEN          1B,3D           0
0000            0               Y
0000            20              1B,59
FB42            20              0
1               Y               0D,0A
F7E8            1B,45           0
Y               0               07
0               Y               0
N               1B,52           ;
24              0               RM#66;TE;JMA;LP/SELECT/
80              Y               BASIC,BOOKS
3               1B,54
```

Note that that the responses are shown in three columns simply to save space. Your file will be built by entering a single entry (such as CONGEN) per line. Compare this set of answers to the questions on the response sheet at the end of this manual. CONGEN is entered as the first line of the file so that it will be called by EXEC. If you had labeled the response file TELEV, your DOS command entry would look like:

```
EXEC,TELEV
```

This would cause EXEC to execute CONGEN, as it is the first line in the file, and then CONGEN would receive the remainder of the file a line at a time as answers to its questions!

A similar method may be used for FLEX, except that instead of including a line with CONGEN on it in the file, you would only include the answers to each question in the file and call CONGEN like this:

```
I,TELEV,CONGEN
```

Under OS-9, you would use a file like the FLEX version, and use I/O re-direction as in this example:

```
CONGEN  /DO/EDIT_DATA/TELEV
```

This method will save you a lot of time once you have the file built. In addition, as we make future corrections or changes to the programs, you will find that it is much easier to edit the response file rather than manually running CONGEN and KEYGEN.

ADDITIONAL INFORMATION ABOUT KEYGEN

KEYBOARD QUESTIONS (SSB AND FLEX VERSIONS) -

If you are running a serial terminal (such as a SOROC, Televideo, Zenith, Heath, SWTPCo CT-82, ADDS, etc...) which communicates through a serial port, you will answer with one or three to the KEYBOARD TYPE question. TYPE ONE is the safest and easiest to start with since you will not need to worry about interrupts.

The reason for entering 1 or 3 instead of 5 or 6 is that whenever possible, SCREDITOR III wants to be able to talk directly to the keyboard, minimizing the possibility of any other software interfering with the operation of the program.

The TYPE 5 and 6 keyboard schemes are included in SCREDITOR III only to accommodate those systems which are so off-the-wall as to make talking directly to a port impossible. Included in this group might be a keyboard which generates EBCDIC (an IBM alternative to ASCII), and which uses a conversion program to change the codes received to ASCII.

KEYBOARD QUESTIONS (ALL VERSIONS) -

As was mentioned elsewhere in this manual you can define fewer than the thirty-one OPERATORS that SCREDITOR III supports by entering an asterisk when an OPERATOR is requested. In case you

wish or need to do this, certain OPERATORS are more important than others, and should not be ignored. The OPERATORS which CAN generally be ignored are:

DELETE WORD
TAB TO NEXT WORD
TAB TO PREVIOUS WORD
TAB TO END OF LINE
TAB LEFT
CONVERT TO UPPER CASE
CONVERT TO LOWER CASE

OPERATORS which can NEVER be ignored include:

DESTRUCTIVE BACKSPACE
ESCAPE (ENTER COMMAND MODE)
NEW LINE
CURSOR UP
CURSOR DOWN
CURSOR LEFT
CURSOR RIGHT
SPLIT PARAGRAPH
MELD PARAGRAPH

META KEYS -

The new version of SCREDITOR III supports 'META' keys; i.e., keys which will be used for OPERATORS, but are sent from the keyboard with the high-order bit set ($80 and up). These keys are distinct from the normal control codes ($00-$1F).

You will be asked during KEYGEN whether or not you will be using 'META' keys. If you answer Y, SCREDITOR III will not set the high-order bit low in any incoming character. This means that you MUST be sure that the port setup word you specify if you are running a type one or three keyboard is correct. Entry of the wrong port setup word will probably cause half or more of the keys on your keyboard to go dead when running SCREDITOR III.

If you are running a TYPE 4 keyboard, you must be receiving eight-bit data from the port, with the high-order bit indicating the entry of a 'META' key.

The following table lists all of the combinations of ACIA setup words which are likely to be encountered. Note that only eight-bit data setups are given. The use of 'META' keys mandates that seven-bit setups cannot be used. It is up to you to determine which of these entries is the one you want. The setup words in the tables given previously in this addendum may or may not work with 'META' keys.

RTS	SETUP	STOP BITS	PARITY	ACIA CLOCK
LOW	11	TWO	NONE	X16
LOW	15	ONE	NONE	X16
LOW	19	ONE	EVEN	X16
LOW	1D	ONE	ODD	X16
LOW	12	TWO	NONE	X64
LOW	16	ONE	NONE	X64
LOW	1A	ONE	EVEN	X64
LOW	1E	ONE	ODD	X64
HIGH	11	TWO	NONE	X16
HIGH	15	ONE	NONE	X16
HIGH	19	ONE	EVEN	X16
HIGH	1D	ONE	ODD	X16
HIGH	12	TWO	NONE	X64
HIGH	16	ONE	NONE	X64
HIGH	1A	ONE	EVEN	X64
HIGH	1E	ONE	ODD	X64

Note that RTS is listed in this table for completeness. Under normal conditions, you will use one of the first eight entries in the table as RTS (Request To Send) is a modem signal, and is normally not used by terminals. If your terminal DOES require RTS/CTS handshaking, you will have to use external routines, as SCREDITOR III does NOT support such handshaking. You may still, however, use 'META' keys with SCREDITOR III with a TYPE 5 or TYPE 6 keyboard input routine.

ADDITIONAL INFORMATION ABOUT PRTGEN

A control sequence is any group of zero (explained in a moment) to six characters, and may be any binary code from zero to 254, since you define these as bytes, hexidecimally. Control codes, on the other hand, range in value from zero to 31. In short, a control code stands for a control sequence, and the sequence is what is actually sent to the printer when the code is encountered in the text during printing. In this way, sequences of characters up to six characters long may be inserted while taking only a single character position in the buffer itself.

For instance, if you imbed CODE 1 in your document, the single byte $01 will actually be placed in the text. This will tell SCREDITOR III that you wish to start underlining text. During printing, however, this code is used to look up the actual sequence of characters which are sent to tell the printer to start underlining.

There are several advantages in this method. The biggest advantage is that you will not generally have to re-edit material with imbedded codes when you change printers. If a new printer takes a different control sequence to start underlining, you only have to re-run PRTGEN and the underlining will still be done where you had it in the original document!

An additional advantage is that many of the codes which you wish to imbed might not be allowed by the DOS under which SCREDITOR III is running due to such contention problems as end-of-file characters, compression characters, etc... By using these substitute codes, you are completely free to define codes using any characters without fear that half a file will disappear because your favorite control sequence started with an end-of-file character!

Another advantage is the fact that, even if your printer cannot underline by itself, print in boldface, or print double width, if it will backspace, SCREDITOR III can generate these specialty functions for you. For this reason, a number of the control functions are always defined as the same code numbers.

This is why we said that a control sequence can consist of zero bytes. If your printer, for instance, supports backspace, but will not automatically underline text, you would hit RETURN when the underline sequence was requested, but would enter the control sequence when backspace was requested. By entering the backspace definition with no underline definition, you have told SCREDITOR III to underline by printing a character, backspacing, and then typing the underline. This same method is used for boldface printing. Printing double width will simply send a space after each character if you have not defined a double width control sequence.

USING THE PRTGEN DATA FILE-

Like KEYGEN and CONGEN, the default PRTGEN data file is automatically loaded on program startup. The OS-9 version of SCREDITOR III will load PRTGEN+user-ID from the EDIT_DATA directory on drive D0. The FLEX and SSB versions will load PRTGEN.DAT from the system drive. If the file does not exist, SCREDITOR III will abort back to DOS.

An LP (LOAD PRINTER DATA FILE) COMMAND is included in SCREDITOR III to allow manual loading of the printer data file. You may load a new data file at any time you desire during editing, although there is generally little need to do so. One application might be where you have a printer which can do high-speed dot-matrix printing, and uses certain control sequences in this mode, and can also do letter-quality printing, but uses different controls. This type of printer could have its mode shifted by simply loading the alternate PRTGEN data file when desired.

If you are contemplating this type of operation, you should run PRTGEN for each data file you desire, and rename each one after building it to a name which will identify the file for later use (such as MX80, IDS440, MALIBU, etc...). Be sure, however, to leave one file with the default name, or SCREDITOR III will be dead. When re-naming the files, the SSB and FLEX versions MUST have a .DAT extension. The OS-9 version MUST have your user I.D. as the last five characters of the path name (e.g., MALIBU00001, etc...).

ADDENDUM A - MISCELLANEOUS INFORMATION

PLACING THE EDIT DATA FILE ON OTHER DRIVES - OS-9

As has been stated repeatedly in this manual, SCREDITOR III expects the EDIT_DATA directory to exist on drive D0. Many OS-9 systems, however, use D0 only for booting, and then switch to another drive for all other operations. This is especially true where hard disks are being used.

Each of the three SCREDITOR III GEN programs in the OS-9 version have all messages at the start of the file. The first message in each file is the string which tells the program where to put or get data files. This entry will appear as

```
/D0/EDIT_DATA
```

followed by the default file name, as in this example

```
/D0/EDIT_DATA/CONGEN
```

(which is the string in the CONGEN program), followed by sixteen spaces and a carriage return. If you have the Microware Debug package, you can modify this string to whatever pathlist you desire to tell the programs where to find their files. After modifying the string, be sure run VERIFY on the program to update the CRC count, or the file will never execute again!

In SCREDITOR III itself, there are three such messages at the start of the file--one for each of the data files. If you modify the pathlist in one of the GEN programs you must also modify the corresponding pathlist in SCREDITOR III. Be sure that each GEN program's pathlist matches the pathlist in SCREDITOR III after you have finished the modification, or SCREDITOR III will become a permanently-sleeping giant!