

SC21-7657-2

File No. S34-32

IBM System/34  
Source Entry Utility  
Reference Manual

Program Number 5726-U1



SC21-7657-2

File No. S34-32

**IBM System/34**  
**Source Entry Utility**  
**Reference Manual**

Program Number 5726-UT1

### **Third Edition (July 1978)**

This is a major revision of, and obsoletes, SC21-7657-1. A description of the display screen format for COBOL statements has been added to support the IBM System/34 COBOL Supplement PRPQ, Programming RPQ P84019, Program 5799-AWR. Changes have been made to the System/34 Display Screen Format Specifications sheet. Miscellaneous changes occur throughout the manual. Changes or additions to the text and illustrations are indicated by a vertical line to the left of the change or addition.

This edition applies to release 2, modification 0 of the IBM System/34 Utilities Program Product, Program 5726-UT1, and to all subsequent versions and modifications until otherwise indicated in new editions or technical newsletters. Changes are periodically made to the information herein; before using this publication in connection with the operation of IBM systems, refer to the latest *IBM System/34 Bibliography*, GH30-0231 for the editions that are applicable and current. Use this publication only for the purposes stated in the *Preface*.

Publications are not stocked at the address below. Requests for copies of IBM publications and for technical information should be made to your IBM representative or to the branch office serving your locality.

This publication could contain technical inaccuracies or typographical errors. Use the Reader's Comment Form at the back of this publication to make comments about this publication. If the form has been removed, address your comments to IBM Corporation, Publications, Department 245, Rochester, Minnesota 55901. Comments become the property of IBM.

The source entry utility (SEU) is part of the System/34 Utilities Program Product, Program 5726-UT1. The purpose of this manual is to describe SEU for programmers who define SEU jobs. Also, this manual contains an operating summary for programmers who operate SEU themselves to create and maintain System/34 source and procedure members. This manual describes:

- The purpose and functions of SEU
- The display screen formats provided with SEU
- How to change supplied display screen formats and create new ones
- How to call SEU and how to end an SEU job
- SEU prompts
- How to use command function keys and function control keys in each SEU mode

This reference manual is intended not only for account programmers but also for IBM field support personnel. The manual is not intended to be a substitute for SEU portions of System/34 classes offered by IBM or for equivalent SEU training.

### How this Manual Is Organized

This manual contains six chapters, two appendixes, a glossary, and an index. Chapter 1 presents an overview of SEU. Chapters 2 through 5 describe details of SEU. Chapter 6 is an SEU operating summary.

Appendix A contains a sample listing of the display screen format specifications that define one of the display screen formats provided with SEU. Appendix B lists the diagnostic messages issued by SEU.

### System Requirements

For a list of system requirements, see the *IBM System/34 Planning Guide*, GC21-5154.

### Prerequisite Publications

- *IBM System/34 Introduction*, GC21-5153
- *IBM System/34 Planning Guide*, GC21-5154
- *IBM System/34 System Support Reference Manual*, SC21-5155

### Related Publications

- *IBM 5250 Information Display System Introduction*, GA21-9246
- *IBM 5251 Display Station Operator's Guide*, GA21-9248
- *IBM System/34 Installation and Modification Reference Manual: Program Products and Physical Setup*, SC21-7689
- *IBM System/34 Operator's Guide*, SC21-5158
- *IBM System/34 Displayed Messages Guide*, SC21-5159
- *IBM System/34 Keyboard Template*, GX21-7660
- *IBM System/34 Master Index*, SC21-7739

The *System/34 Introduction* contains a *Publications Summary* that briefly describes each of the System/34 publications.



# Contents

## CHAPTER 1. INTRODUCTION TO THE SOURCE

<b>ENTRY UTILITY</b> . . . . .	1-1
SEU Functions . . . . .	1-3
SEU Operation . . . . .	1-4
SEU Operating Requirements . . . . .	1-5
Display Screen . . . . .	1-6
Keyboard . . . . .	1-10
Disk Work Space . . . . .	1-12
Library Space . . . . .	1-15
Printer . . . . .	1-17

## CHAPTER 2. DISPLAY SCREEN FORMATS FOR SEU 2-1

Field Definitions in SEU Display Screen Formats . . . . .	2-1
Conditioned Fields . . . . .	2-2
Field Exit . . . . .	2-3
Display Screen Formats Provided with SEU . . . . .	2-4
Free Form . . . . .	2-4
RPG II and Auto Report . . . . .	2-6
Sort . . . . .	2-21
Work Station Utility . . . . .	2-26
Assembler . . . . .	2-33
Magnetic Character Reader . . . . .	2-34
Display Screen Format . . . . .	2-37
FORTRAN IV . . . . .	2-40
COBOL . . . . .	2-41
Creating and Changing SEU Display Screen Formats . . . . .	2-42
Auto Skip, Protect, and Constant Fields . . . . .	2-44
Restrictions . . . . .	2-45
How to Create a Display Screen Format . . . . .	2-47
How to Change a Display Screen Format . . . . .	2-48
An Example of How to Change a Display Screen Format . . . . .	2-49
Selecting Display Screen Formats . . . . .	2-52
Members that Contain Supplied Display Screen Formats . . . . .	2-52
Selection by the Operator . . . . .	2-52
Selection by SEU . . . . .	2-54
Format Length . . . . .	2-56
Checking Syntax of RPG II and Auto Report Statements . . . . .	2-57
Error Detection . . . . .	2-57
Auto Report Restrictions . . . . .	2-58

## CHAPTER 3. STATEMENT NUMBERING . . . . . 3-1

Description . . . . .	3-1
Example . . . . .	3-2
How to Insert More than 99 Statements . . . . .	3-3

## CHAPTER 4. CONSIDERATIONS FOR THE USER . . . . . 4-1

Programming Considerations . . . . .	4-1
SEU on a Multiprogramming System . . . . .	4-1
Library Space . . . . .	4-1
Size of Library Member . . . . .	4-2
How to Include from a Member . . . . .	4-2
How to Delete a Member . . . . .	4-2
How to Enter Data in Auto Skip Fields . . . . .	4-3
Canceling an SEU Job . . . . .	4-3

Operating Considerations . . . . .	4-3
Function Control Keys . . . . .	4-3
How to Find a Statement . . . . .	4-9
How to Change a Response after It Is Entered . . . . .	4-9
How to Record Syntax Errors . . . . .	4-10

## CHAPTER 5. SIGN-ON, RECOVERY, AND END OF JOB 5-1

Sign-On . . . . .	5-1
SEU Command . . . . .	5-1
SEU OCL . . . . .	5-3
Sample SEU Commands . . . . .	5-4
Sample Sign-On Displays . . . . .	5-5
Recovery . . . . .	5-7
End of Job . . . . .	5-8
End-of-Job Options . . . . .	5-9
Procedure Members at SEU End of Job . . . . .	5-10
End-of-Job Considerations . . . . .	5-12

## CHAPTER 6. SEU OPERATING SUMMARY . . . . . 6-1

Enter/Update Mode . . . . .	6-1
Enter/Update Prompt . . . . .	6-1
Enter/Update Command Function Keys . . . . .	6-3
Enter/Update Function Control Keys . . . . .	6-4
Delete Mode . . . . .	6-5
Delete Prompts . . . . .	6-6
Delete Command Function Keys . . . . .	6-9
Delete Function Control Keys . . . . .	6-10
Move Mode . . . . .	6-11
Move Prompts . . . . .	6-11
Move Command Function Keys . . . . .	6-14
Move Function Control Keys . . . . .	6-15
Include Mode . . . . .	6-16
Include Prompts . . . . .	6-16
Include Command Function Keys . . . . .	6-19
Include Function Control Keys . . . . .	6-20
Scan Mode . . . . .	6-21
Scan Prompts . . . . .	6-21
Scan and Update . . . . .	6-23
Scan Command Function Keys . . . . .	6-24
Scan Function Control Keys . . . . .	6-25
SEU Job Sheet . . . . .	6-26

## APPENDIX A. DISPLAY SCREEN FORMAT SPECIFICATIONS FOR THE DISPLAY SCREEN FORMATS PROVIDED WITH SEU . . . . . A-1

A Listing of Free-Form Format Z Specifications . . . . .	A-1
Coded Free-Form Format Z Specifications . . . . .	A-2

## APPENDIX B. DIAGNOSTIC MESSAGES . . . . . B-1

## GLOSSARY . . . . . C-1

## INDEX . . . . . X-1



## Chapter 1. Introduction to the Source Entry Utility

The source entry utility (SEU) is an interactive utility program that helps the user create, change, delete and locate statements in System/34 source and procedure members. SEU simplifies the creation and changing of source and procedure members by:

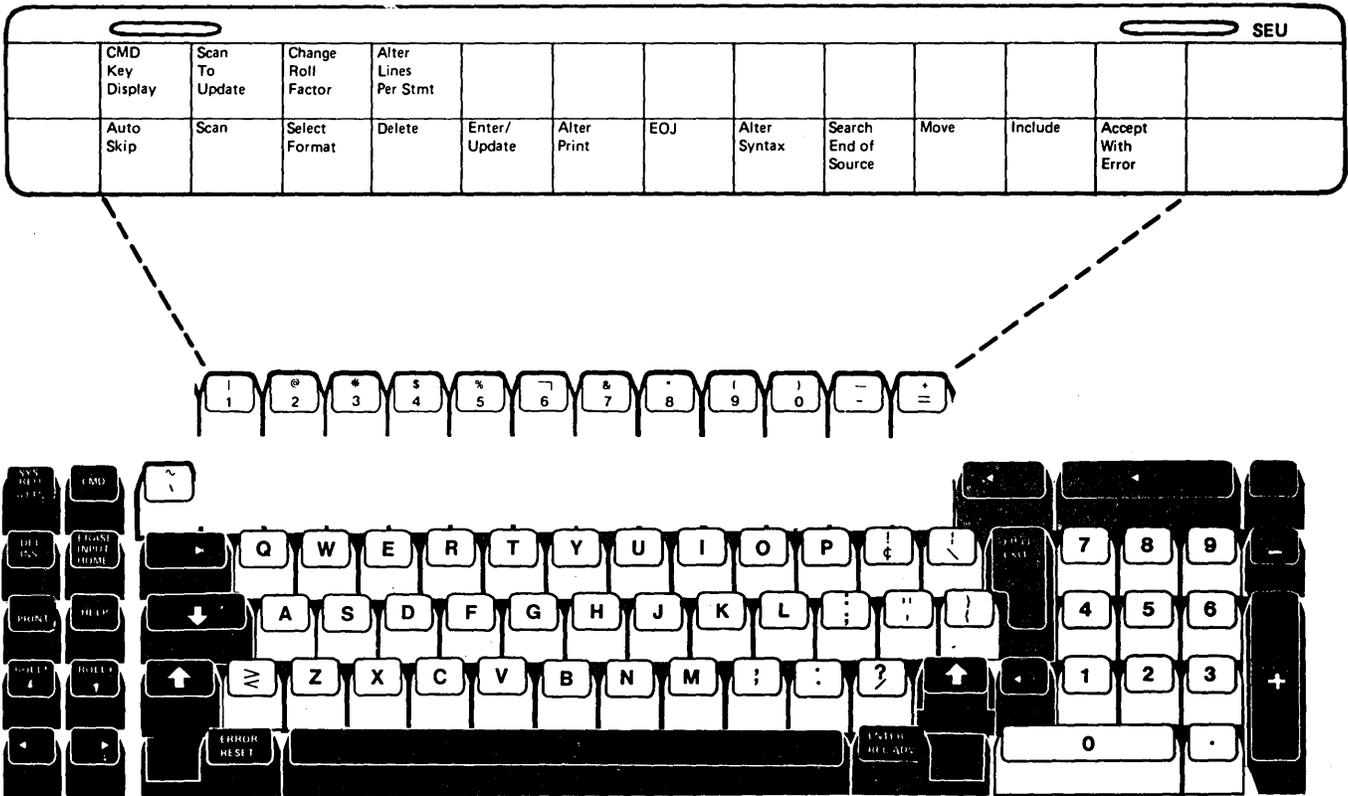
- Prompting users for job information
- Displaying a display screen format for each statement entered or changed
- Assigning command function keys to SEU operations

*Prompts:* SEU prompts the operator for all the control information and data necessary to complete an SEU job. The operator responds to each prompt by pressing an SEU command function key, pressing a function control key, or entering data. A valid response causes SEU to perform the requested operation. An invalid response causes SEU to display an error message on the display screen. SEU messages regarding invalid responses are described in the *Displayed Messages Guide*.

*Display Screen Formats:* SEU displays a display screen format whenever a new statement is being entered or an existing statement is being changed. The display screen format is a model for the operator to follow when entering or changing a statement. For example, the SEU display screen formats identify each field in a statement, indicate the length of each field, and distinguish numeric fields from alphameric fields. The 5251 Display Station signals the operator of any deviations from the selected format. For example, the display station issues a message if the operator tries to key alphabetic data for a field defined in the display screen format as numeric.

*Command Function Keys:* SEU assigns 16 command function keys for use by the operator, including one command function key that displays the number and purpose of all the SEU command function keys. A keyboard template is also supplied to identify the name and position of each SEU command function key.

Template



## SEU FUNCTIONS

SEU performs five kinds of functions by operating in five different modes: enter/update, delete, move, include, and scan.

### *Enter/Update*

The enter/update mode creates a new source or procedure member in a library, adds statements to an existing member, or changes statements in an existing member. The display screen formats provided with SEU or created by the user define the format of each statement entered or changed. Display screen formats provided with SEU are:

- Free form, for entering and changing statements for which rigid formats do not exist, such as OCL statements and utility control statements.
- RPG II and auto report, for entering and changing RPG II and auto report specifications. SEU optionally performs limited syntax checking of RPG II and auto report specifications as they are entered.
- Sort, for entering and changing sort sequence specifications.
- Work station utility, for entering and changing work station utility specifications.
- Assembler, for entering and changing basic assembler instruction statements, machine instruction statements, and macroinstruction statements.
- Magnetic character reader, for entering and changing specifications for the IBM 1255 Magnetic Character Reader.
- Display screen format, for entering and changing display screen format specifications used by the display screen format generator utility program (\$SFGR).
- FORTRAN IV, for entering and changing FORTRAN IV statements.
- COBOL, for entering and changing COBOL statements.

### *Delete*

The delete mode deletes selected statements from an existing source or procedure member.

### *Move*

The move mode moves one or more statements from one location in a member to another location in the same member.

### *Include*

The include mode copies one or more statements from one source or procedure member, called the include member, to a different source or procedure member. The two members can exist in different libraries. If the statements to be copied already exist in a library, SEU can also copy statements from one location in a member to a different location in the same member.

### *Scan*

The scan mode searches a source or procedure member for a statement that contains a given sequence of characters. Scan can be used to locate statements if unique character strings in those statements are known.

## **SEU OPERATION**

Because SEU is called by a procedure command, and because SEU is an interactive utility, someone with no programming training can use SEU efficiently. So that instructions to an operator are complete, however, the programmer should be aware of the kind of information an operator must have in order to run SEU. Figure 1-1 outlines the information an operator needs in order to initiate and complete an SEU job.

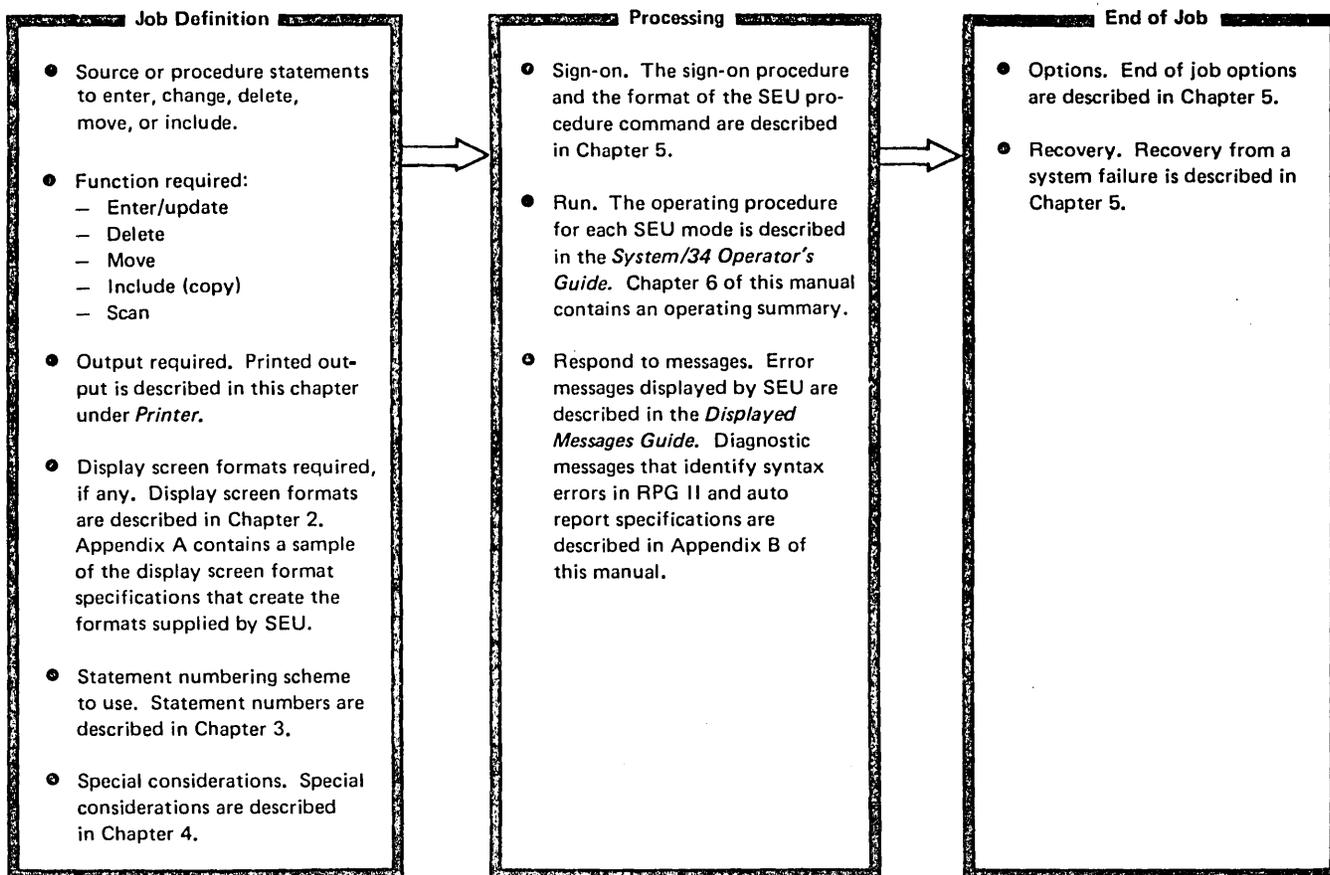


Figure 1-1. Overview of Operating SEU

## SEU OPERATING REQUIREMENTS

Any operator at a command display station can run SEU. Besides a display station consisting of a display screen and a keyboard, each SEU job requires:

- Disk work space
- Library space
- Region size of 14K bytes  
(SEU will not use more than 14K bytes)

SEU may also require a printer.

## Display Screen

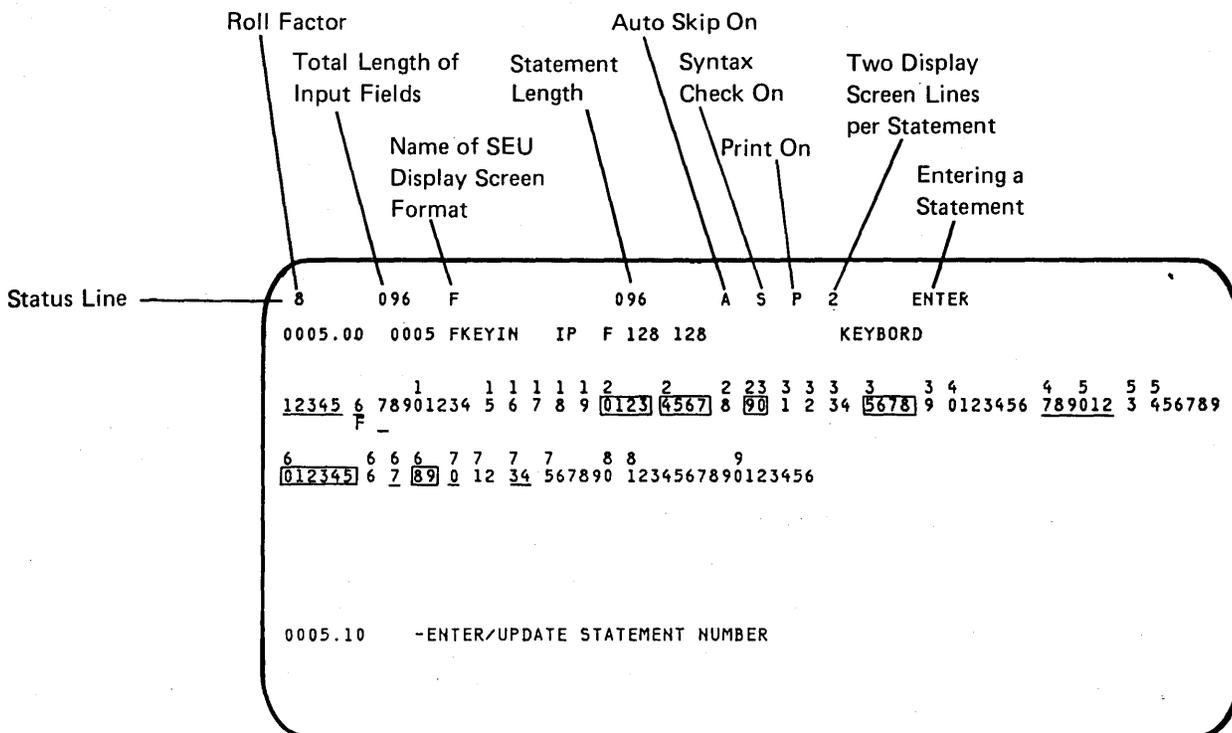
The display screen contains space for 24 lines of information, 80 characters per line. SEU uses the display screen to display status information, statements in a member, and display screen formats, as well as prompts, responses, messages, and data keyed by the operator.

SEU always highlights the following information:

- Status line
- The statement number and text of each new statement being keyed
- The statement number and text of each statement being changed
- Data keyed in response to the SEU prompts
- Messages

### Status Line

In each SEU mode, line 1 of the display screen is the status line. SEU highlights the status line. A sample of the status line follows.



*Positions 2 and 3* contain the roll factor. The roll factor determines the next sequence of statements displayed if the Roll↑ (Roll Up) or Roll↓ (Roll Down) function control key is pressed. Where *n* is the roll factor, the first statement displayed if the Roll↑ key is pressed is the one that is *n* statements beyond the first one currently on the display screen. The first statement displayed if the Roll↓ key is pressed is the one that is *n* statements before the first one currently on the display screen.

For example, assume that a member contains statements 1 through 50, the roll factor is 8, and SEU is displaying statements 9 through 16. If the operator presses the Roll↑ key, SEU displays statements 17 through 24 (statement 9 plus roll factor 8 equals statement 17). If the operator had pressed the Roll↓ key, SEU would have displayed statements 1 through 8 (statement 9 less roll factor 8 equals statement 1).

The roll factor is always 8 immediately after SEU sign-on. The operator can change the factor to any value from 1 through 99 by pressing the Change Roll Factor command function key and entering a different value.

*Positions 10 through 12* identify the total length of the input fields described by the selected display screen format.

*Positions 16 through 23* contain the name of the display screen format selected for the enter/update mode.

*Positions 30 through 32* identify the length of the statements in the selected source or procedure member.

*Position 39* shows the status of the auto skip option: A if the option is on, blank if the option is off. If the option is on when an operator enters or changes a statement, SEU automatically skips fields that are defined as auto skip fields by the display screen format for the statement. Chapter 2 identifies the auto skip fields defined by the formats provided with SEU, and describes how to define an auto skip field in user-written display screen formats. The auto skip option is always off at the beginning of an SEU job. The option is changed each time the operator presses the Auto Skip command function key.

*Position 42* shows the status of the syntax checking option: S if the option is on, blank if the option is off. If the option is on when an operator enters or changes an RPG II or auto report specification under control of a provided RPG II or auto report display screen format, SEU checks for errors in the syntax of the specification.

If the member type specified in the SEU command is A (auto report) or R (RPG II), the syntax checking option is on at the beginning of the SEU job and is changed each time the operator presses the Alter Syntax command function key. If the member type specified in the SEU command is S (source) or P (procedure), the option is off at the beginning of the SEU job and cannot be turned on during the job. (Member type and all other parameters for the SEU command are described in Chapter 5.)

*Position 45* shows the status of the print option: P if the option is on, blank if the option is off. If the print option is on when the operator enters, updates, deletes, or includes a statement, SEU prints the statement. The print option is always off at the beginning of an SEU job. The option is changed each time the operator presses the Alter Print command function key. SEU printing is described in more detail under *Printer* in this chapter.

*Position 48* shows the number of display screen lines reserved for the display of each statement: 1 or 2. When the operator views a source or procedure member to add, change, delete, move, include, or scan statements, SEU displays each statement on either one or two lines of the display screen. If one line is reserved for each statement, SEU displays only the first 70 characters of the statement, and displays a maximum of 16 statements at a time. If two lines are reserved for each statement, SEU displays the statement in its entirety, and displays a maximum of eight statements at a time.

The SEU sign-on procedure reserves two display lines for each statement. The operator can change the number of display lines per statement from 2 to 1, or from 1 to 2, by pressing the Alter Lines Per Stmt command function key. If the roll factor—shown in positions 2 and 3 of the status line—is 8 when the operator changes the number of lines per statement from 2 to 1, SEU changes the roll factor to 16. If the roll factor is 16 when the operator changes the number of lines per statement from 1 to 2, SEU changes the roll factor to 8.

*Positions 55 through 62* contain ENTER when the operator is entering a new statement, and UPDATE when the operator is changing a statement.

*Positions 76 through 79* show the number of consecutive statements being deleted, moved, or included at one time when the operator is using the delete, move, or include mode.

### *Statement Displays*

SEU reserves 16 lines on the display screen for displaying statements from source and procedure members. SEU displays statements in two formats: one format contains eight statements, the other contains 16. The two sample displays that follow show statements displayed in each of the two formats. In the second sample, note that only one display line is available for each statement. Because only the first 70 characters of a statement can be shown on one line, statements 1.00, 2.00, and 7.00 are not shown in their entirety in the second sample.

**Eight-Statement Display**

Status Line  
 Statements: 1  
 First 2  
 3  
 Second 4  
 5  
 Third 6  
 7  
 Fourth 8  
 9  
 Fifth 10  
 11  
 Sixth 12  
 13  
 Seventh 14  
 15  
 Eighth 16  
 17  
 18  
 Prompts 19  
 20  
 21  
 22  
 23  
 Messages 24

```

8      120  Z      096  S      2
0001.00 0001 FINPUT UC F 256 64R 8AI 1 DISK          A 01
          U8  DEFINE INPUT FILE
0002.00 0002 FMASTER IS 257 257 3 SPECIAL SUBRAC
          DEFINE MASTER FILE
0003.00 0003 FBACKUP IP AF 200 100 29AI 72 DISK
0004.00 0004 FDISKIN IR F 96 96 30IT EDISK
0005.00 0005 FKEYIN IP F 128 128 KEYBORD
0006.00 0006 FFILENAMEIP F 80 80 KEYBORD
0007.00 0007 FOUTPUT OP AF 200 100 29AI 72 DISK
          DEFINE OUTPUT FILE
0008.00 0008 ITRAN AA 01 1 CA
-      -ENTER/UPDATE STATEMENT NUMBER
  
```

**Sixteen-Statement Display**

Status Line  
 Statements: 1  
 First 2  
 Second 3  
 Third 4  
 Fourth 5  
 Fifth 6  
 Sixth 7  
 Seventh 8  
 Eighth 9  
 Ninth 10  
 Tenth 11  
 Eleventh 12  
 Twelfth 13  
 Thirteenth 14  
 Fourteenth 15  
 Fifteenth 16  
 Sixteenth 17  
 18  
 19  
 20  
 Prompts 21  
 22  
 23  
 Messages 24

```

16     120  Z      096  S      1
0001.00 0001 FINPUT UC F 256 64R 8AI 1 DISK          A 01
0002.00 0002 FMASTER IS 257 257 3 SPECIAL SUBRAC
0003.00 0003 FBACKUP IP AF 200 100 29AI 72 DISK
0004.00 0004 FDISKIN IR F 96 96 30IT EDISK
0005.00 0005 FKEYIN IP F 128 128 KEYBORD
0006.00 0006 FFILENAMEIP F 80 80 KEYBORD
0007.00 0007 FOUTPUT OP AF 200 100 29AI 72 DISK
0008.00 0008 ITRAN AA 01 1 CA
0009.00 0009 I      OR 02 1 CB
0010.00 0010 I      OR 03 1 CC
0011.00 0011 I
0012.00 0012 I      2 6 KEY
0013.00 0013 IMASTER AB 04 1 CM      7 100AMT
0014.00 0014 I
0015.00 0015 I      7 14 DESC
0016.00 0016 I      15 180VALUEA
          19 220VALUEB
-      -ENTER/UPDATE STATEMENT NUMBER
  
```

## SEU Display Screen Format Displays

SEU displays the selected display screen format whenever the operator enters or updates a statement. The sample display that follows shows the information displayed by SEU when an operator enters or updates a statement. Boxes in the display indicate numeric fields or alphameric right-adjust fields. In an actual display, the boxed numbers would be shown in reverse image—dark numerals against a light background. The underscored numbers indicate protect fields or auto skip fields. Protect fields are always skipped by the cursor; auto skip fields are skipped if the auto skip option is on.

Status Line	1	8	096	F	096	A	S	P	2	ENTER
Preceding Statement	2	0005.00	0005	FKEYIN	IP	F	128	128	KEYBOARD	
in Member	3									
Headings for the SEU	4									
Display Screen Format	5									
	6	<u>12345</u>	<u>6</u>	<u>78901234</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>0123</u>
	7									
New or Changing	8									
Statement	9									
Format Headings,	10									
Continued	11									
New or Changing	12									
Statement, Continued	13									
Prompt	14									
Messages	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									

	10	6	6	6	7	7	7	7	8	8	9
	11	<u>012345</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>0</u>	<u>12</u>	<u>34</u>	567890	1234567890123456

	19	0005.10	-ENTER/UPDATE	STATEMENT	NUMBER
--	----	---------	---------------	-----------	--------

## Keyboard

The SEU operator requires keyboard data keys, function control keys, and command function keys. The operator uses data keys to answer prompts and to key new data. The operator uses function control keys to request system functions and manipulate information displayed by SEU. Function control keys that have special applications in SEU jobs are described in Chapter 4. All keyboard data and function control keys are described in the *IBM 5251 Display Station Operator's Guide*.

SEU assigns 16 command function keys to perform operations not performed by the system function control keys. By pressing the Cmd function control key and then pressing the appropriate command function key, the operator selects one of the 16 operations provided. The following list summarizes the purpose of each SEU command function key. Chapter 6 identifies the purpose of each command function key in each SEU mode.

#### Lowercase

- 1 Auto Skip: Reverses the current status of the auto skip option.
- 2 Scan: Initiates the scan mode.
- 3 Select Format: Allows the operator to select a new display screen format by entering a new format number.
- 4 Delete: Initiates the delete mode.
- 5 Enter/Update: Initiates the enter/update mode.
- 6 Alter Print: Reverses the current status of the print option.
- 7 EOJ (end of job): Displays SEU end-of-job options.
- 8 Alter Syntax: Reverses the current status of the syntax checking option.
- 9 Search End Of Source: Displays the last statement in the member being viewed. The member can be an include member.
- 0 Move: Initiates the move mode.
- Include: Initiates the include mode.
- = Accept With Error: Accepts an RPG II or auto report specification being entered or updated, even though it may contain a syntax error.

### Uppercase



**Cmd Key Display:** Displays a list of all SEU command function keys with a brief description of each key.



**Scan To Update:** Searches a member for a statement containing specified scan characters, then displays the statement in the enter/update mode so the operator can change the statement.



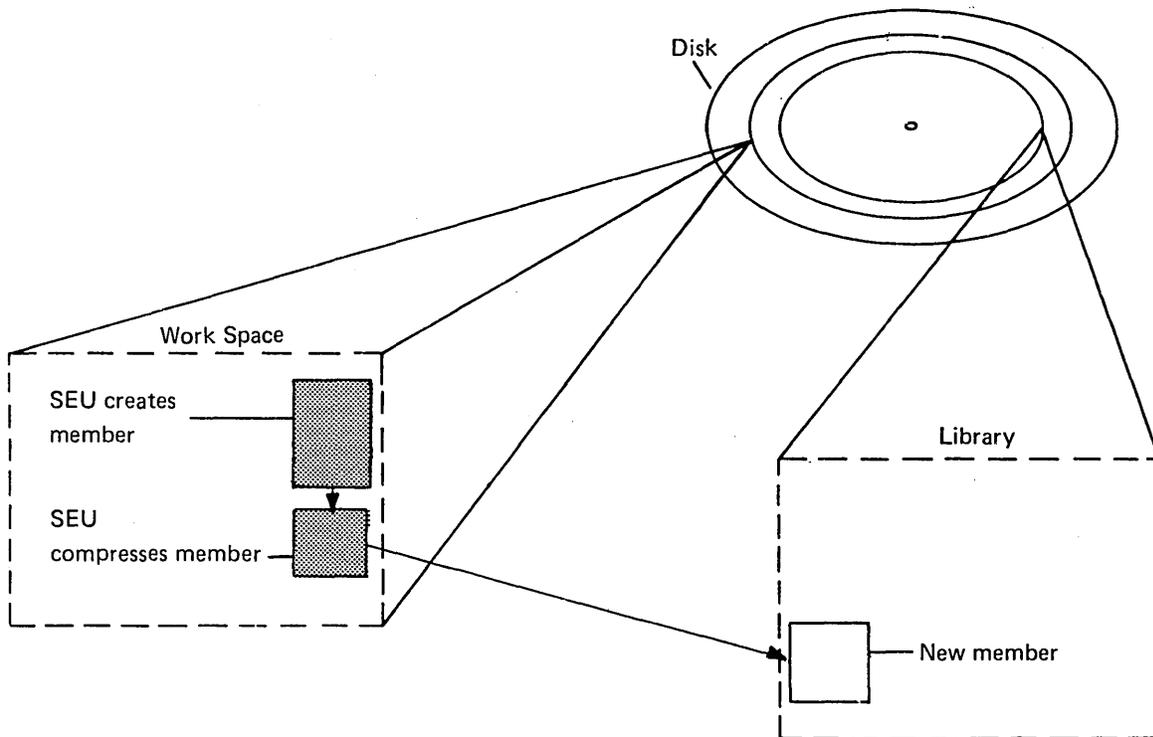
**Change Roll Factor:** Allows the operator to enter a new roll factor. Valid roll factors are 1 through 99.



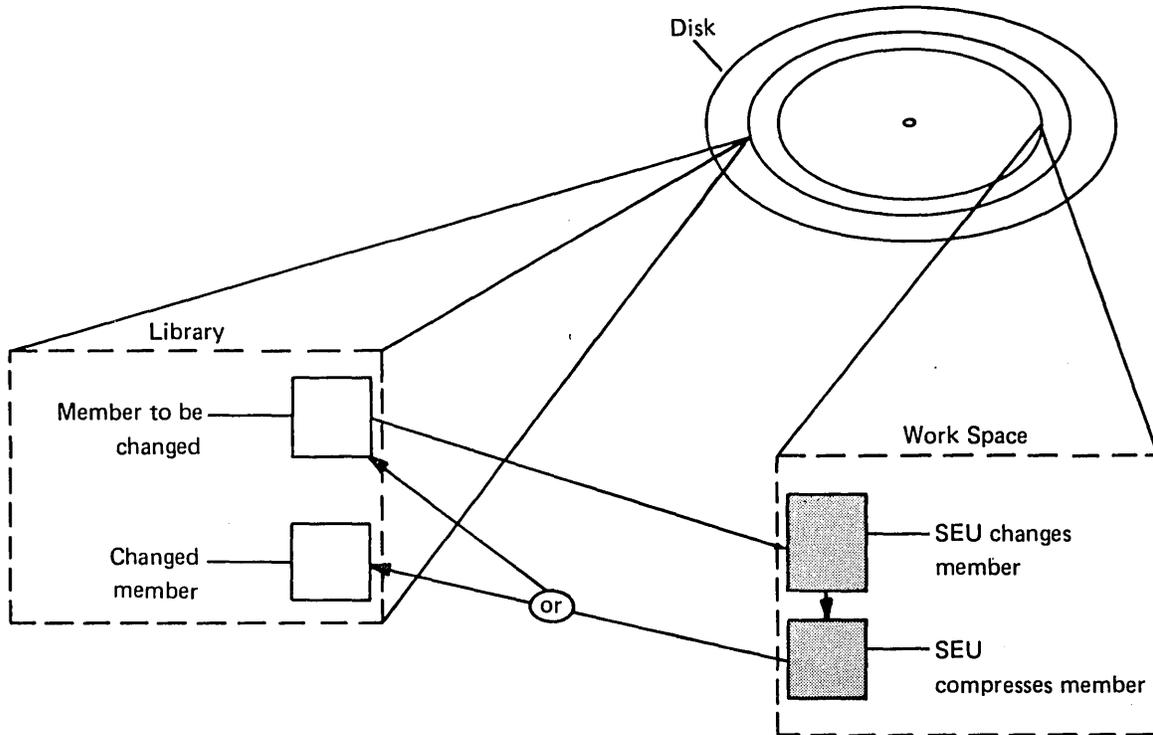
**Alter Lines Per Stmt:** Changes the number of lines on the display screen used for the display of each statement. Either one or two lines are reserved for each statement.

### Disk Work Space

Each SEU job requires work space on the disk. SEU creates a new library member by building it in a work space on the disk. The work space that contains the member is called the SEU work file. At SEU end of job, SEU compresses the new member before copying it to the library. The compressed version is created in a second work space on the disk.



SEU changes an existing member by updating a copy of it placed in the SEU work file by the system. Disk work space must be available for the work file. At SEU end of job, SEU compresses the modified member before copying it to the library. As with a new member, the modified member is compressed in a second disk work space.



Each SEU job requires enough disk work space to contain the member to be created or a copy of the member to be changed, and enough disk work space to contain the compressed version of the member. If SEU cannot complete a job because of insufficient work space, SEU displays a message to the display station operator.

#### Space for Creating or Changing a Member

After the operator signs on, SEU requests both a minimum and a maximum amount of disk work space. The limits are determined as follows:

	Minimum	Maximum
<b>For a New Member</b>	3 blocks	Space for 2,000 statements
<b>For an Existing Member</b>	Space for existing number of statements	Space for 2,000 statements or 1,000 additional statements, whichever is greater, but not for more than 9,999 statements

SEU then calculates the number of consecutive disk blocks to request by using the following formulas:

$$\text{Total number of sectors} = 8 + \frac{\text{number of statements} \times \text{statement length}}{256} + \frac{\text{number of statements}}{37} \quad (\text{fractions are dropped})$$

$$\text{Total number of blocks} = 3 + \frac{\text{total number of sectors}}{10} \quad (\text{fractions are dropped})$$

The system allocates the maximum if the space is available. If the maximum is not available, the system allocates as much space as possible, provided that the space is at least the minimum amount requested by SEU.

#### *Space for Compressing a Member*

SEU compresses each member before copying it to a library. At SEU end of job, SEU requests disk space for the compressed version of the member processed during the SEU job. The number of bytes of work space required for a compressed source or procedure member created or changed by SEU is: statement length times the number of statements in the member at the end of the SEU job.

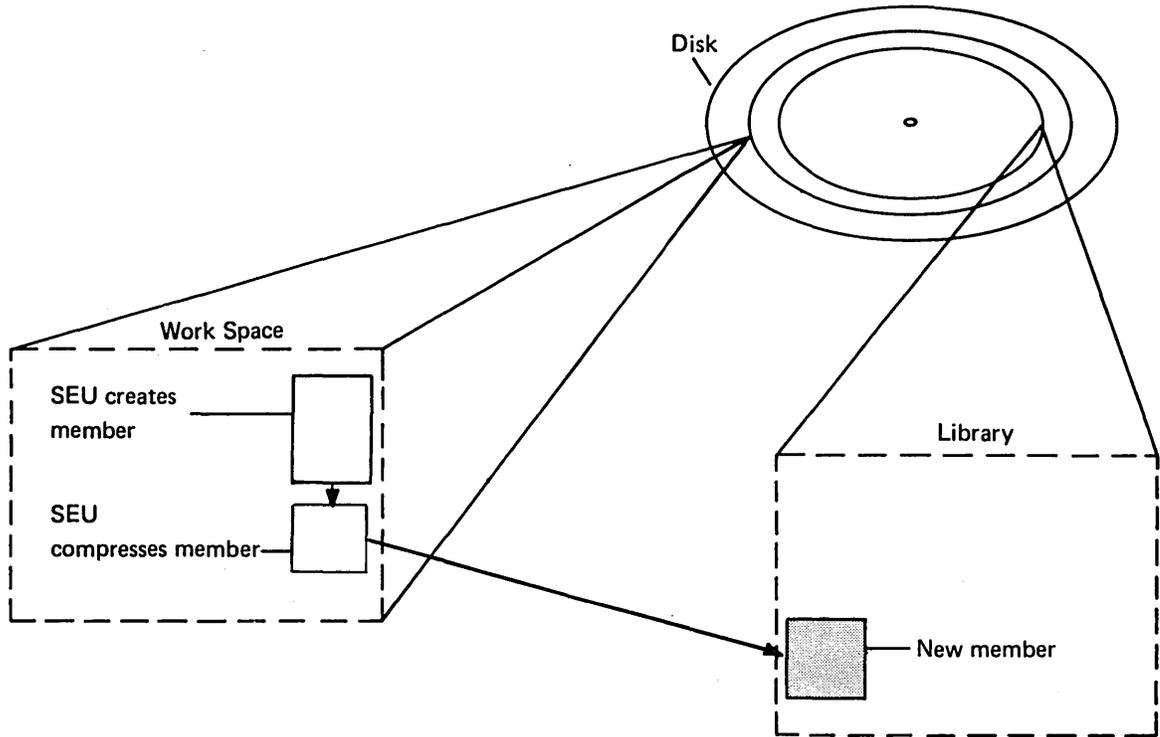
#### *Messages Regarding Work Space*

If the existing disk work space is not enough for SEU sign-on, SEU displays an error message stating that there is not enough space available for the SEU work file. If SEU fills the work file before end of job, SEU displays a message stating that the work file is filled. If at the end of the job SEU cannot find enough work space for the compressed member, SEU displays a message stating that the space required for the work file is not available.

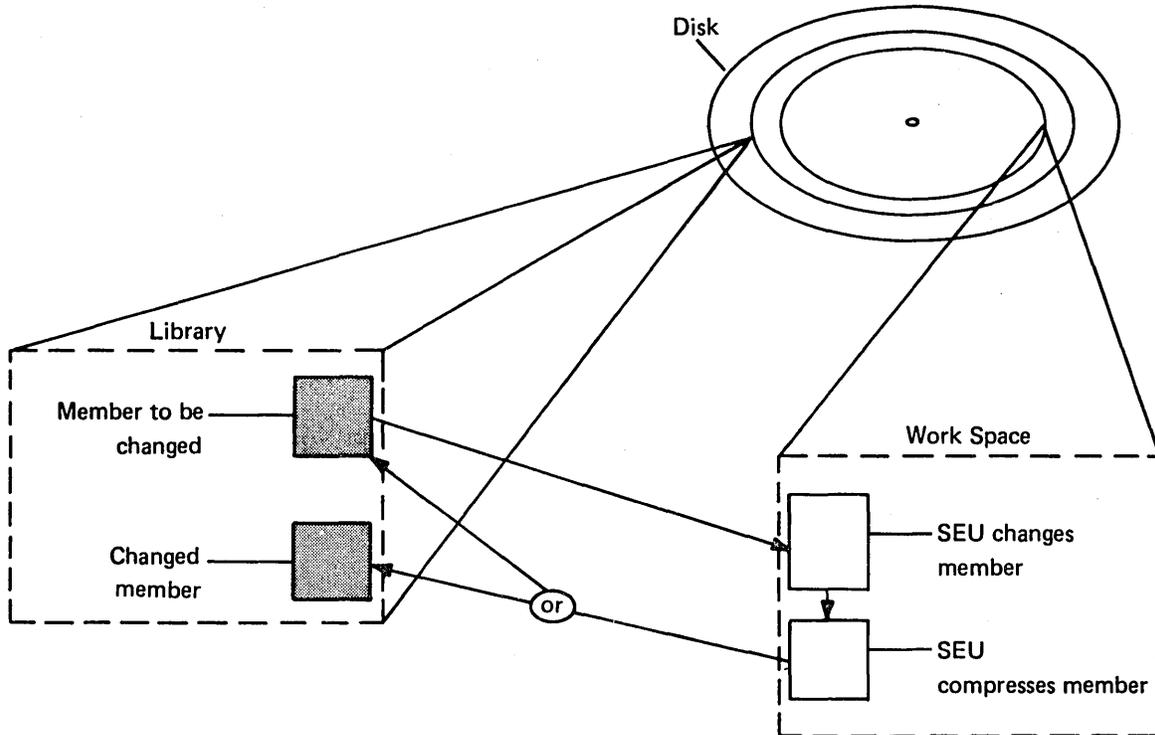
The *Displayed Messages Guide* describes how the operator can respond to the three preceding messages.

## Library Space

After SEU creates a source or procedure member, the new member requires space in the library specified by the SEU sign-on procedure.



After SEU changes an existing member, the member may require additional space in the library from which it was copied. The member may require additional library space either because the size of the member increased, or because another program was referring to the library at the time the SEU job ended. If another program is referring to the library, the system places the changed member in a new location in the library. By placing the modified member in a new location, the system prevents SEU from interfering with any program that refers to the original member at the time the SEU job ends. System pointers to the original member are deleted after the modified member is copied to the library.



If enough space for a member created or changed by SEU does not exist in the library, SEU displays a message stating that there is not enough room in the library to replace the member. The possible responses to the message are described in the *Displayed Messages Guide*.

## Printer

SEU does not require a printer for sign-on. SEU tries to acquire a printer if:

- The print option is on when the operator enters, updates, deletes, or includes a statement
- The operator requests a listing at SEU end of job

If a printer is available to the display station or if print spooling is active for the system printer, the system allocates a printer to SEU the first time printing is requested by SEU. Once a printer has been allocated, it is not released until the end of the SEU job. If a printer is not available and print spooling is not active for the system printer when SEU requests printing, SEU displays an error message. For a description of print spooling, see the *System Support Reference Manual*.

On all output printed by SEU, the first line of the first page contains the program date for the SEU job and the time of day when the operator entered the SEU procedure command.

**Note:** If you want to direct printed output from a particular SEU job to a specific printer, you must specify #SEUPRNT as the name of the printer file. The name of the printer file is specified in a PRINTER OCL statement, which is described in the *System Support Reference Manual*. The PRINTER statement must be entered between the LOAD and RUN OCL statements in the series of OCL statements you use to call SEU for the particular job: unless you modify the SEU procedure to include a PRINTER statement, you cannot use the SEU command to call SEU for a job for which printed output is to be directed to a particular printer. The OCL in the procedure provided with SEU is described in Chapter 5 under *SEU OCL*.

## Print Option

The print option is initially off after SEU sign-on. The operator can turn the print option on by pressing the Alter Print command function key. Position 45 in the SEU status line reflects the current status of the print option: P if it is on, blank if it is off. Whenever the option is on, SEU prints:

- Each statement the operator enters, updates, deletes, or includes.
- Three hyphens (---) after each statement the operator deletes.
- Three asterisks (\*\*\*) after each statement the operator accepts even though the statement contains a known syntax error (the operator enters or changes—under control of an RPG II or auto report display screen format provided with SEU—an RPG II or auto report specification with the syntax checking option on, then presses the Accept With Error command function key if SEU discovers a syntax error in the specification). SEU also prints an asterisk beneath a field that is related to the error, and prints the SEU identifier and an MIC (message identification code) so the programmer or operator can find a description of the error in Appendix B of this manual after signing off.

### ***End-of-Job Options***

If the operator selects either of the following options at SEU end of job, SEU requests a printer whether the print option is on or is off:

- 2 END OF JOB WITH LISTING
- 4 END OF JOB WITH LISTING AND SERIALIZATION

If a printer is not available and print spooling is not active for the system printer at the time of the request, SEU displays an error message.

## Chapter 2. Display Screen Formats for SEU

SEU requires a display screen format for each statement the operator enters or changes while SEU is in the enter/update mode. The display screen format determines what kind of data and how much data SEU accepts for each field in the statement. SEU can select some formats automatically. The operator can always select the format a job requires.

The *System Support Reference Manual* describes how to create and use display screen formats on System/34: see the description of \$SFGR (display screen format generator utility program) in the *System Support Reference Manual*. This chapter describes field definitions used in the display screen formats provided with SEU, shows in detail each format provided with SEU, and lists considerations for creating or changing display screen formats intended for SEU.

### FIELD DEFINITIONS IN SEU DISPLAY SCREEN FORMATS

SEU display screen formats contain a field definition for each field in an entire source or procedure statement. SEU displays headings that number each position in a field definition. The field definitions identify the position and length of each field in a statement, and specify the kind of data that is valid in each field. Display screen formats provided with SEU specify two kinds of data: alphameric and numeric.

*Alphameric Fields:* Any data character on the keyboard is a valid entry for an alphameric field. An alphameric field can be any length up to the length of the statement.

A few alphameric fields are defined in SEU display screen formats as right-adjust fields. That is, the contents of the fields are right-adjusted if the operator presses the Field Exit or Field+ function control key after keying data for the field. Headings for alphameric right-adjust fields are displayed in reverse image in SEU display screen formats.

*Numeric Fields:* Valid entries for a numeric field are the digits 0 through 9 and + (plus sign), - (minus sign), . (decimal point), blank, and , (comma). A numeric field can be any length up to the length of the statement.

Headings for all numeric fields are shown in SEU display screen formats in reverse image.

## Conditioned Fields

The formats provided with SEU condition certain fields as protect, auto skip, or constant.

*Protect Fields:* Protect fields are always skipped. The operator cannot enter data into a protect field.

*Auto Skip Fields:* Auto skip fields are skipped whenever the SEU auto skip option is on. Position 39 of the SEU status line reflects the status of the auto skip option: A if it is on, blank if it is off. The Auto Skip command function key reverses the status of the auto skip option.

*Constant Fields:* Constant fields contain predefined constants. Position 6 in RPG II specifications is an example of a field that SEU conditions as constant. The display screen format for RPG II file description specifications defines position 6 as a constant F; the format for RPG II input specifications defines position 6 as I; and so on. If a constant field is not also conditioned to be an auto skip field, or if the auto skip option is off, the operator can change the content of the field. Constants defined for constant fields are displayed for new statements being entered. When the operator updates a statement, the value displayed in a constant field is the value that exists in the original statement.

## Field Exit

When the operator keys enough data to fill an alphameric field, the cursor advances to the next field in the statement if any fields remain. If the operator does not fill an alphameric field, the operator must press one of the function control keys to advance the cursor to the next field. Numeric fields and alphameric right-adjust fields, in contrast to alphameric fields, always require that the operator press a function control key to advance the cursor to the next field.

	Alphameric Field That Is Not Right-Adjust	Alphameric Right-Adjust Field or Numeric Field
<b>Filled</b>	Cursor automatically advances to next field	Press:  → (Cursor Right), →  (Field Advance), Field Exit, or Field+
<b>Partially Filled</b>	Press:  → (Cursor Right), →  (Field Advance), Field Exit <sup>1</sup> , or Field+ <sup>1</sup>	To right adjust, press:  Field Exit or Field+  No right adjust <sup>2</sup> , press:  → (Cursor Right) or →  (Field Advance)
<p><sup>1</sup>The Field Exit and Field+ keys are destructive exit keys for alphameric fields that are not right-adjust fields. That is, the field positions skipped by the cursor when the Field Exit or Field+ key is pressed are set to blanks if the field is not defined as a right-adjust field. See the <i>System Support Reference Manual</i> for a description of how to define a right-adjust field.</p> <p><sup>2</sup>A partially filled numeric field is not right-adjusted and padded to the left with blanks. The unchanged positions of the field retain the values they had before the operator keyed new data into part of the field.</p>		

## DISPLAY SCREEN FORMATS PROVIDED WITH SEU

This section contains a figure for each display screen format provided with SEU. The figures show how the formats reflect related coding forms. The figures also show what the format headings look like on the display screen.

Headings for field definitions are separated by a blank. For example,

```
  1  1  
89012 3456
```

shows two fields, one in positions 8 through 12 and one in positions 13 through 16.

Boxed headings in the following figures indicate numeric fields or alphanumeric right-adjust fields. In an actual display, headings for numeric fields and alphanumeric right-adjust fields are shown in reverse image—dark numerals against a light background. Headings for protect fields are underscored, both in the following figures and on the display screen. Headings for auto skip fields are underscored if the auto skip option is on. If you turn the auto skip option off, the underscore is removed from headings for auto skip fields, and you can move the cursor to positions within the auto skip fields.

Each figure shows the cursor. The cursor is at the first location where the operator is expected to enter data.

### Free Form

SEU provides two free-form display screen formats, Z and Z-LOWER. Format Z permits entry of only uppercase characters; Z-LOWER permits entry of lowercase and uppercase characters. Z-LOWER requires use of the  (Shift) key for entry of uppercase characters.

Both free-form formats define statements that consist of two alphanumeric fields: the first field is 79 positions long, the second is 41 positions long. The formats can be used to enter and change statements for which unique display screen formats do not exist, such as OCL statements, continuation lines for WSU D or display screen format field specifications, and text for message members. Statements entered and changed under control of the free-form formats can be any length up through 120 characters.

Figure 2-1 shows a sample display of Z. Figure 2-2 shows a sample display of Z-LOWER.

**Note:** Because Z is always selected by SEU when sign-on is complete, the name of Z must not be changed.

```

8      096  Z          096      S  2      ENTER

123456789012345678901234567890123456789012345678901234567890123456789
-
8      9      0      1      2
012345678901234567890123456789012345678901234567890

0001.00  -ENTER/UPDATE STATEMENT NUMBER

```

Figure 2-1. Free-Form Format: Z

```

8      120  Z-LOWER    096      A  S  P  2      ENTER

123456789012345678901234567890123456789012345678901234567890123456789
-
8      9      0      1      2
012345678901234567890123456789012345678901234567890

0001.00  -ENTER/UPDATE STATEMENT NUMBER

```

Figure 2-2. Free-Form Format: Z-LOWER

## RPG II and Auto Report

The following RPG II and auto report display screen formats are provided for entering and updating RPG II and auto report specifications. If the original names of the formats are not changed, SEU can optionally check the syntax of each RPG II and auto report specification entered or changed under control of the formats.

<b>Format Name</b>	<b>Specification</b>
H	RPG II control specification
U	Option format used by RPG II auto report
F	File description specification
G	File description continuation
E	File extension specification
L	Line counter specification
T	Telecommunications specification
I	Input specification (record identification)
J	Input specification for columns 43 through 96 (field description)
C	Calculation specification
O	Output specification (file identification and control)
P	Output specifications for columns 23 through 96 (field description)
K	Copy specification used by RPG II auto report
A	Any statement with an * in position 7

Each format for RPG II and auto report is 96 positions long. The formats are shown in Figures 2-3 through 2-16.



RPG AUTO REPORT SPECIFICATIONS

GX21-9139 UM/050\*  
Printed in U.S.A.

<b>IBM</b> International Business Machines Corporation		Program		Punching Instruction		Graphic		Card Electro Number		Page 1 2 of		Program Identification 75 76 77 78 79 80	
Programmer		Date		Punch		Punch		Punch		Punch		Punch	

Line	Form Type	Source (P/C/B)	Source Member Reference	Work Files (1-9)	Data Suppress (N)	# Suppress (N)	Labels (U)	List Options (B/P)	Reserved
01	U								

Annotations: A, S, C, S, A, S, A, S, A, P, P, A, A, A

Data values: 12345 6 7 89012345678 9012345 6 7 8 9 0 12345678901234567890123456789 01234 567890 1234567890123456

Sample Display of U

- A = Alphameric
- C = Constant
- P = Protect
- S = Auto skip

```

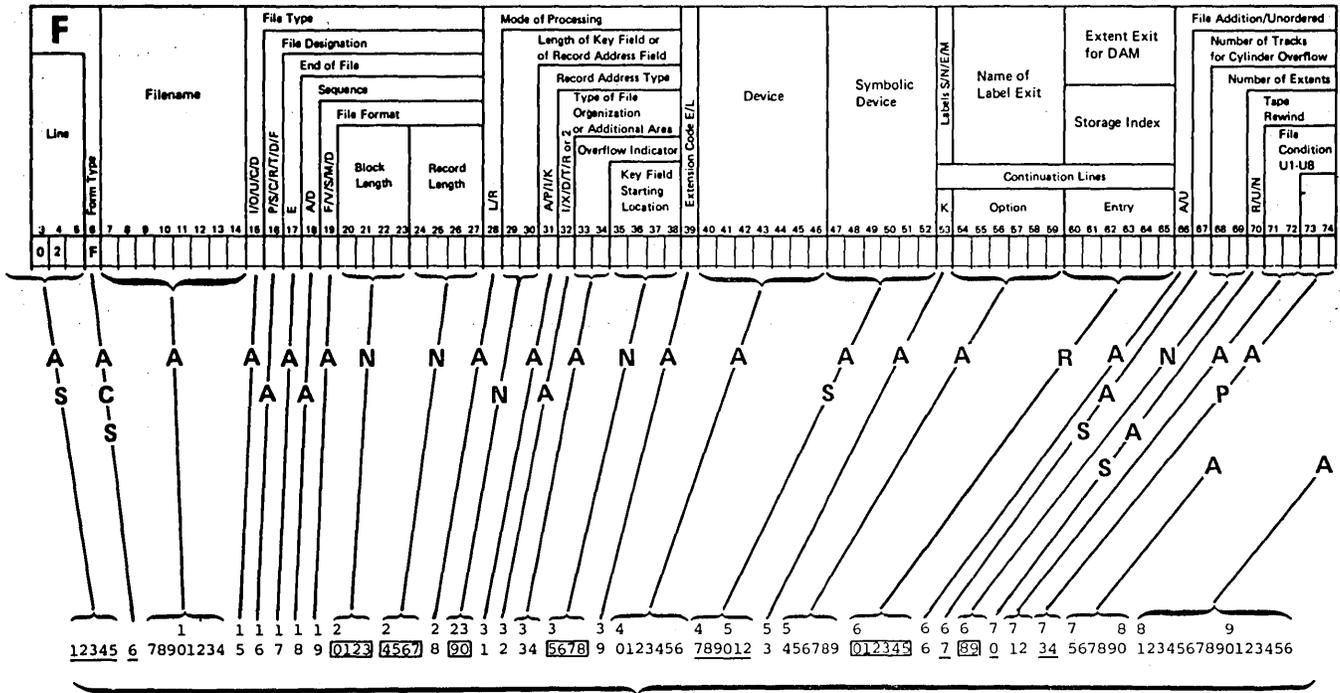
8      096  U          096      A S P 2      ENTER

      1      12      2 2 2 2 3 3      4      5      6
12345 6 7 89012345678 9012345 6 7 8 9 0 12345678901234567890123456789
U
7      7      8 8      9
01234 567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-4. RPG II and Auto Report Format: U, Auto Report Option Specification

### File Description Specifications



Sample Display of F

- A = Alphameric
- C = Constant
- N = Numeric
- P = Protect
- R = Alphameric, right adjust
- S = Auto skip

```

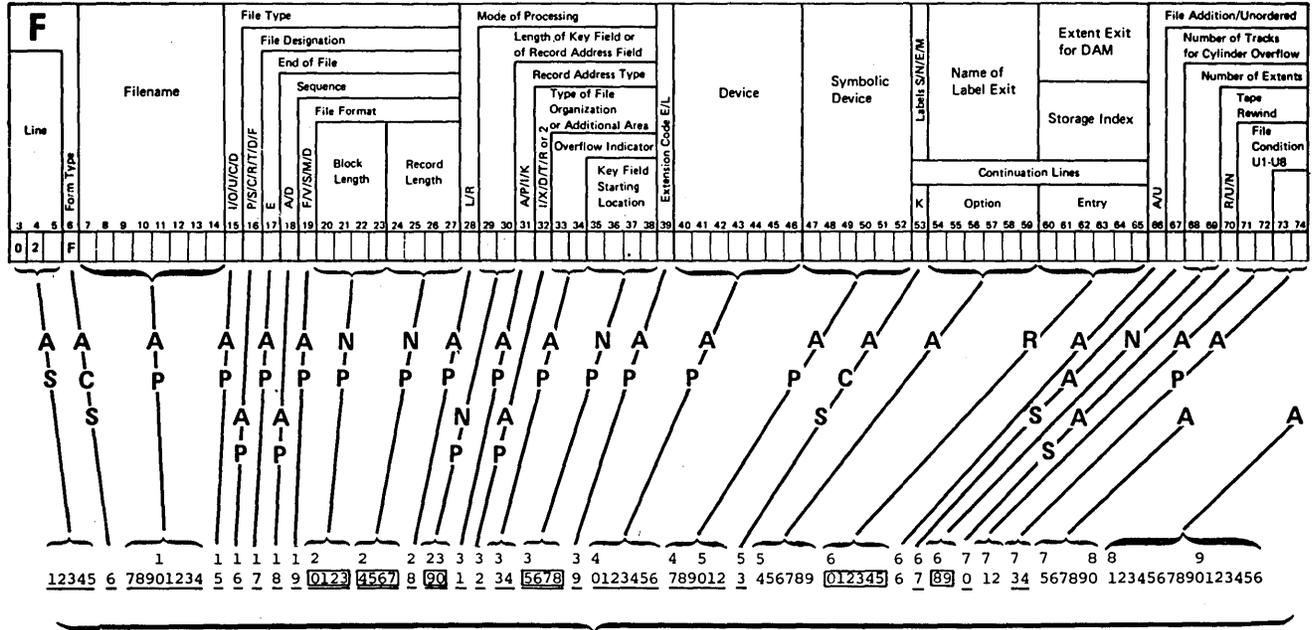
8      096  F          096      A S P 2      ENTER

12345 6 78901234 5 6 7 8 9 0123 4567 8 90 1 2 34 5678 9 0123456 789012 3 456789
F -
6 7 8 9 0 12 34 567890 1234567890123456
012345 6 7 8 9 0 12 34 567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-5. RPG II and Auto Report Format: F, File Description Specification

### File Description Specifications



#### Sample Display of G

- A = Alphameric
- C = Constant
- N = Numeric
- P = Protect
- R = Alphameric, right adjust
- S = Auto skip

```

8      096  G          096  A S P 2  ENTER

12345 6 78901234 5 6 7 8 9 0123 4567 8 90 1 2 34 5678 9 0123456 789012 3 456789
      F
6      6 6 6 7 7 7 7 8 8 9
012345 6 7 89 0 12 34 567890 1234567890123456
      K

0001.00  -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-6. RPG II and Auto Report Format: G, File Description Continuation

RPG EXTENSION AND LINE COUNTER SPECIFICATIONS

Form X21-0081  
Printed in U.S.A.

**IBM** International Business Machine Corporation

Program	Punching Instruction	Graphic	Card Electro Number
Programmer	Date	Punch	

Page 1 2 of Program Identification 75 76 77 78 79 80

### Extension Specifications

Line	Form Type	Record Sequence of the Chaining File		To Filename	Table or Array Name	Number of Entries Per Record	Number of Entries Per Table or Array	Length of Entry	P/B/L/R	Decimal Positions	Table or Array Name (Alternating Format)	Length of Entry	P/B/L/R	Decimal Positions	Comments	
		From Filename	Number of the Chaining Field													
01	E															

Annotations: A S A C S A S A S A N N N A A A N A A A A A

Line Counter: 12345 6 7890 12345678 90123456 789012 345 6789 012 3 4 5 678901 234 5 6 7 89012345678901234 567890 1234567890123456

Sample Display of E

- A = Alphameric
- C = Constant
- N = Numeric
- S = Auto skip

```

8      096  E          096      A S P 2      ENTER

      1 1      12      2 3 3 3 4 4 4 4 5 5 5 5
12345 6 7890 12345678 90123456 789012 345 6789 012 3 4 5 678901 234 5 6 7
E
5 6      7      8 8      9
89012345678901234 567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-7. RPG II and Auto Report Format: E, File Extension Specification

Line Counter Specifications

L			Filename																							
Line	Form Type		1		2		3		4		5		6		7		8		9		10		11		12	
3	4	5	Line Number	FL or Channel Number	Line Number	OL or Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number	Line Number	Channel Number
1	L		12345	6	78901234	567	89	012	34	56789012345678901234567890123456789012345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234	567890	12345678901234

FL and OL, entered by SEU

Sample Display of L

- A = Alphameric
- C = Constant
- N = Numeric
- S = Auto skip

```

8      096  L           096      A S P 2      ENTER

12345 6 78901234 567 89 012 34
L  _          FL  OL

2      3      4      5      6      7      7      8 8      9
5678901234567890123456789012345678901234 567890 1234567890123456

0001.00  -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-8. RPG II and Auto Report Format: L, Line Counter Specification

















## Sort

The following sort display screen formats are provided with SEU. They can be used to enter and update sort sequence specifications.

<b>Format Description Name</b>	<b>Specification</b>
SORTH	Header
SORTRC	Record type constant specification
SORTRF	Record type field specification
SORTF	Field specification

Comments for sort can be entered and changed under control of the RPG II and auto report comment format, A, which is shown in Figure 2-16.

Each sort display screen format is 96 positions long. The formats are shown in Figures 2-17 through 2-20.









## Work Station Utility

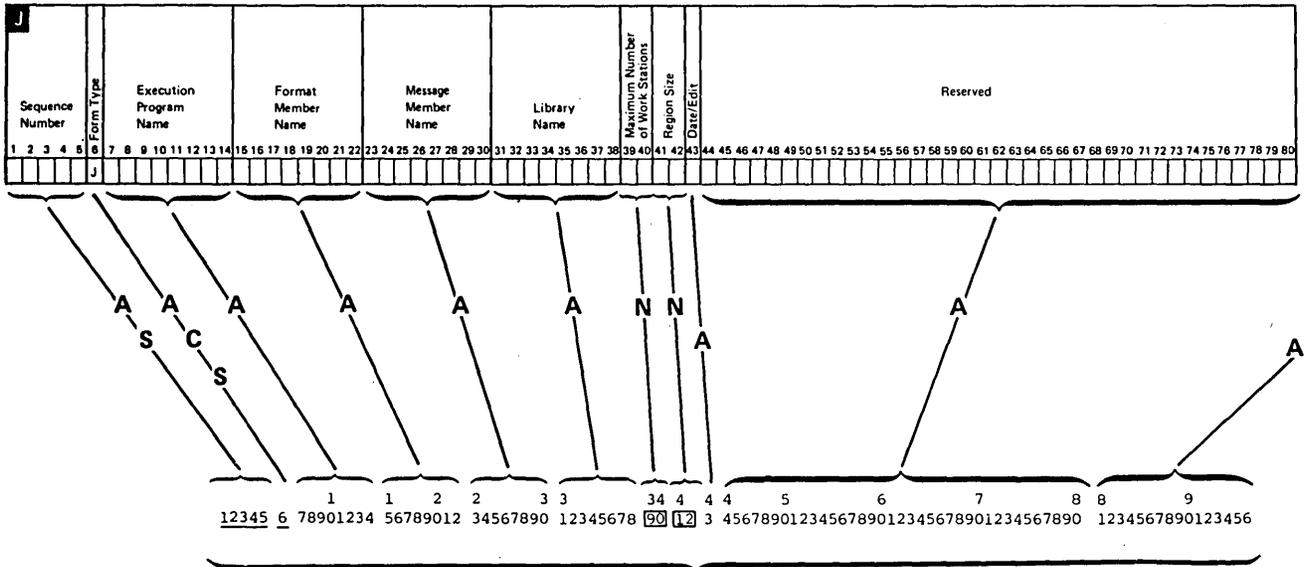
SEU provides display screen formats for entering and changing work station utility J, T, M, S, D, and C specifications. Comments for the work station utility can be entered or changed under control of the RPG II and auto report comment format, A, which is shown in Figure 2-16.

Each work station utility format is 96 positions long. The display screen formats are shown in Figures 2-21 through 2-26.

**Note:** The formats supplied for entering and changing WSU specifications permit entry of uppercase characters only. If you want to use the format WSU-D (shown in Figure 2-25) to specify lowercase constants in positions 57 through 79 of D specifications for WSU, you must first modify WSU-D: change position 21 in the display control specification for WSU-D from N to Y. For a description of how to use SEU to change an existing display screen format, see *Creating and Changing SEU Display Screen Formats* in this chapter. For a description of the entries in display screen format specifications, see the *System Support Reference Manual*.

# WSU J, T, and M Specifications

GX21-9252-  
Printed in U.S.A.



## Sample Display of WSU-J

- A = Alphanumeric
- C = Constant
- N = Numeric
- S = Auto skip

```

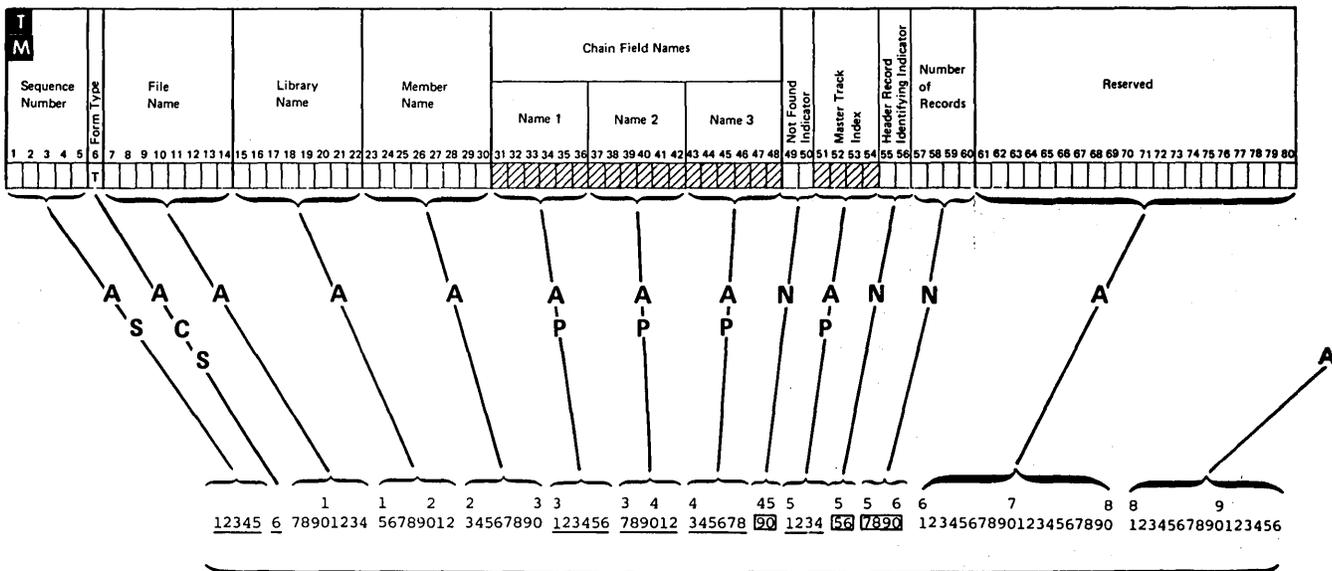
8      096- WSU-J      096      A S P 2      ENTER

12345 6 78901234 56789012 34567890 12345678 90 12 3
-

4      5      6      7      8 8      9
4567890123456789012345678901234567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
  
```

Figure 2-21. Work Station Utility Format: WSU-J



**Sample Display of WSU-T**

- A** = Alphameric
- C** = Constant
- N** = Numeric
- P** = Protect
- S** = Auto skip

```

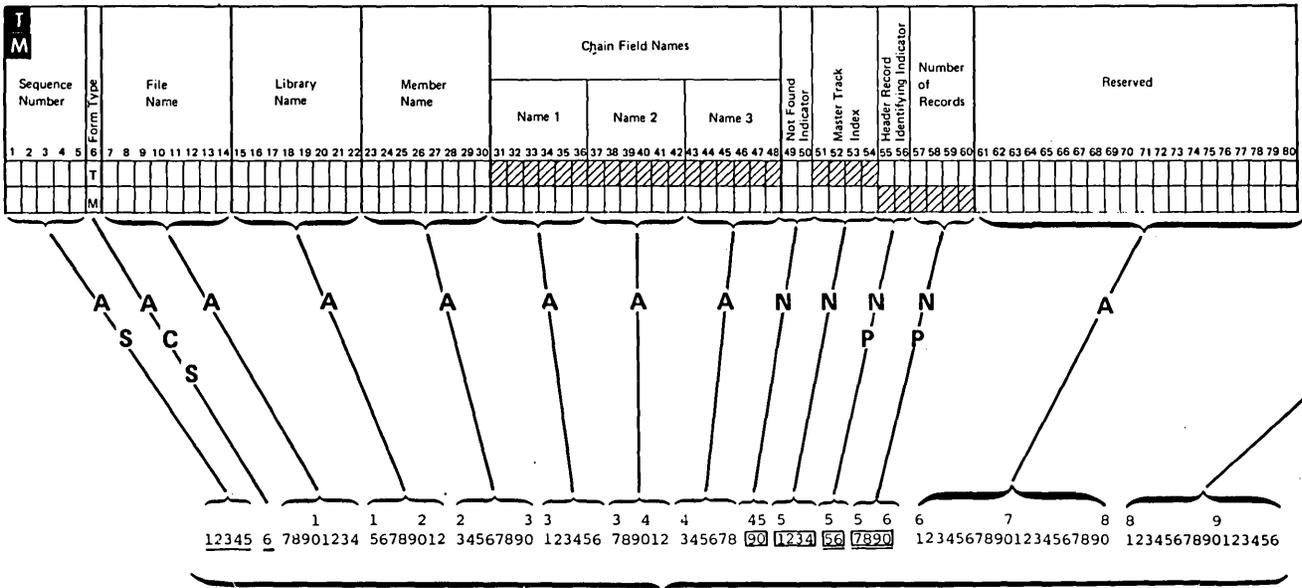
8      096  WSU-T      096      A S P 2      ENTER

      1      1      2      2      3 3      3 4      4      45 5      5 5 6
12345 6 78901234 56789012 34567890 123456 789012 345678 90 1234 56 7890
      |
      6      7      8 8      9
12345678901234567890 1234567890123456

0001.00  -ENTER/UPDATE STATEMENT NUMBER

```

**Figure 2-22. Work Station Utility Format: WSU-T**



**Sample Display of WSU-M**

- A = Alphameric
- C = Constant
- N = Numeric
- P = Protect
- S = Auto skip

```

8      096  WSU-M      096      A S P 2      ENTER

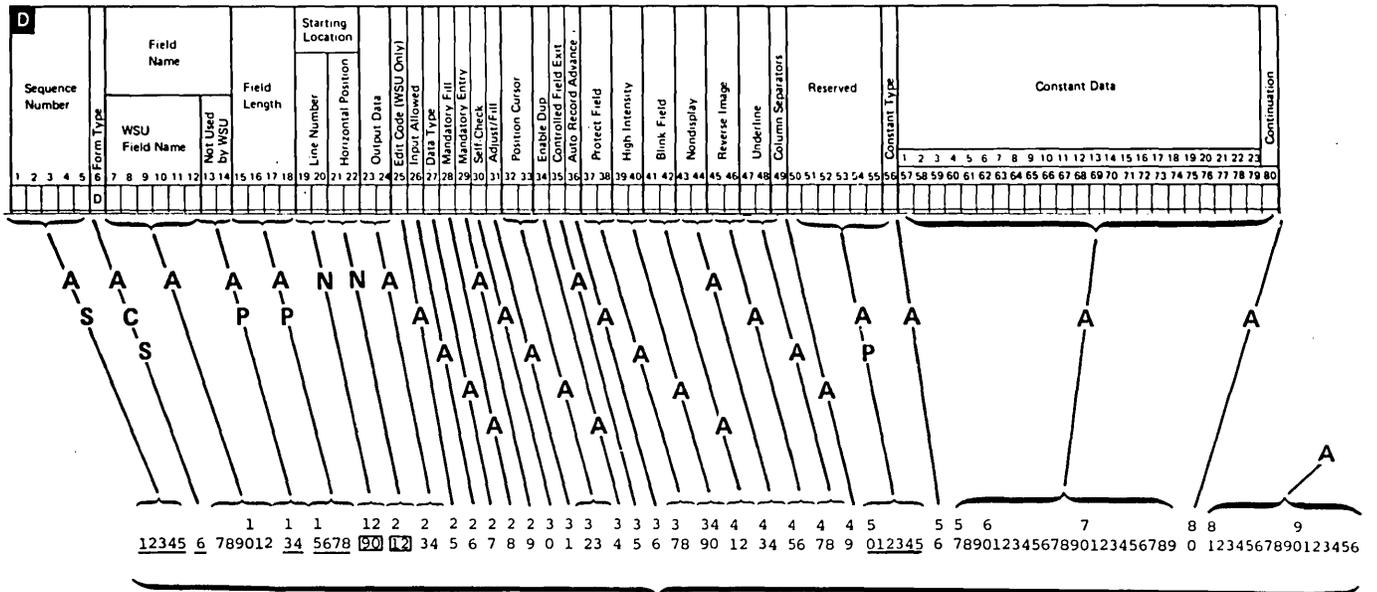
12345 6 78901234 56789012 34567890 123456 789012 345678 90 1234 56 7890
M -

6      7      8 8      9
12345678901234567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
  
```

**Figure 2-23. Work Station Utility Format: WSU-M**





Sample Display of WSU-D

- A = Alphanumeric
- C = Constant
- N = Numeric
- P = Protect
- S = Auto skip

```

8      096  WSU-D      096      A S P 2      ENTER

12345 6 789012 34 5678 90 12 34 5 6 7 8 9 0 1 23 4 5 6 78 90 12 34 56 78 9
D -

5      5 5 6      7      8 8      9
012345 6 78901234567890123456789 0 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
  
```

Figure 2-25. Work Station Utility Format: WSU-D

*Note:* To enter or change continuation statements for WSU-D specifications, use the RPG II and auto report comment format, A, or free-form format Z or Z-LOWER. If you use A, turn the auto skip option off (Auto Skip command function key), and key over the asterisk (\*) in position 7. Format A is shown in Figure 2-16. The free-form formats are shown in Figures 2-1 and 2-2.



## Assembler

SEU provides a display screen format for entering and changing basic assembler language statements. Comments for assembler programs can be entered and changed under control of the assembler format if the auto skip option is off (press the Auto Skip command function key).

The assembler format is 96 positions long. It is shown in Figure 2-27.

IBM GX21-9279-  
Printed in U.S.A.

IBM System/34 Basic Assembler Coding Form

PROGRAM										KEYING		GRAPHIC		PAGE		OF																																																																															
PROGRAMMER										DATE		INSTRUCTIONS		CHARACTER		CARD ELECTRO NUMBER																																																																															
STATEMENT										REMARKS		IDENTIFICATION																																																																																			
Name	Operation	Operand														Remarks	Identification		Sequence																																																																												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

A A A S S A A P A A

1 1 2 3 4 5 5 6 7 8 8 89  
 12345678 9 01234 5 67890123456789012345678901234 56789012345678901234567 8 90123456

### Sample Display of ASSEM

- A = Alphameric
- P = Protect
- S = Auto skip

```

8      096  ASSEM      096      A S P 2      ENTER

12345678 9 01234 5 6789012345678901234567890123456789012345678901234
-
5 6 7 8 8 89
567890123456789012345678901234567 8 90123456

0001.00  -ENTER/UPDATE STATEMENT NUMBER
  
```

Figure 2-27. Assembler Format: ASSEM

## **Magnetic Character Reader**

Two display screen formats are provided with SEU for entering and changing specifications for the IBM 1255 Magnetic Character Reader. The display screen formats describe system specifications and stacker specifications for the reader.

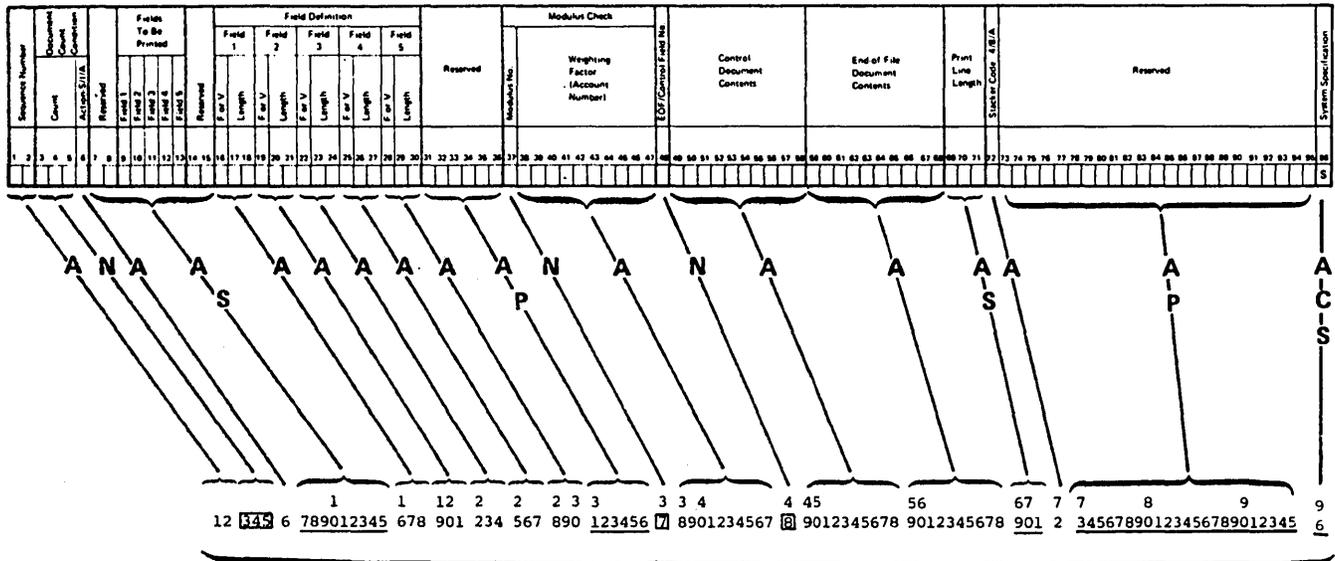
Both formats are 96 positions long. The formats are shown in Figures 2-28 and 2-29.

Date \_\_\_\_\_  
 Program \_\_\_\_\_  
 Programmer \_\_\_\_\_

Punching Instructions	Graphic								
	Punch								

Sheet \_\_\_\_\_ of \_\_\_\_\_

System Specification



Sample Display of MICRSYS

- A = Alphameric
- C = Constant
- N = Numeric
- P = Protect
- S = Auto skip

```

8      096 MICRSYS      096      A S P 2      ENTER
      1      1      12 2      2      2 3 3      3 3 4      4 4 5
12 345 6 789012345 678 901 234 567 890 123456 7 8901234567 8 9012345678
-
56      67 7 7      8      9      9
9012345678 901 2 34567890123456789012345 6 5

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-28. Magnetic Character Reader Format: MICRSYS, System Specification



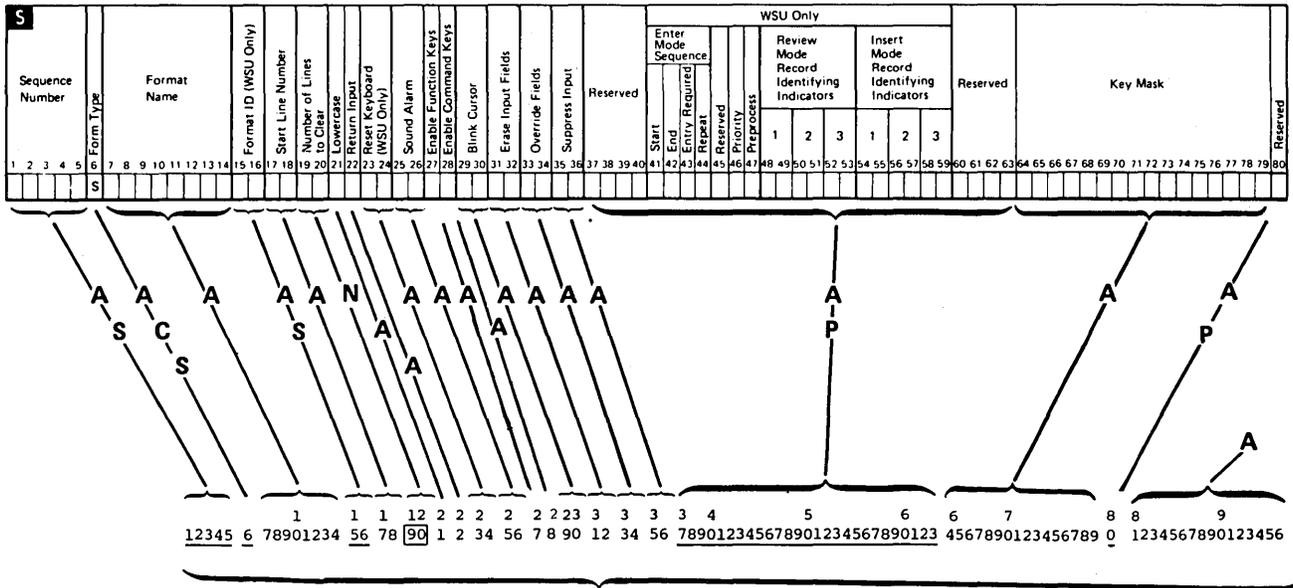
## Display Screen Format

SEU provides two display screen formats for entering and changing display screen format specifications. The formats describe display control specifications and field definition specifications for the \$SFGR utility program. Comments for display screen format specifications can be entered and changed under control of the RPG II and auto report comment format, A, which is shown in Figure 2-16.

The formats for display screen format specifications are 96 positions long. The formats are shown in Figures 2-30 and 2-31.

*Note:* The formats supplied for entering and changing display screen format specifications permit entry of uppercase characters only. If you want to use the format SFGR-D (shown in Figure 2-31) to specify lowercase constants in positions 57 through 79 of field definition specifications, you must first modify SFGR-D: change position 21 in the display control specification for SFGR-D from N to Y. For a description of how to use SEU to change an existing display screen format, see *Creating and Changing SEU Display Screen Formats* in this chapter. For a description of the entries in display screen format specifications, see the *System Support Reference Manual*.

System/34 Display Screen Format Specifications



Sample Display of SFGR-S

- A = Alphanumeric
- C = Constant
- N = Numeric
- P = Protect
- S = Auto skip

```

8      080  SFGR-S      096      A S P 2      ENTER

12345 6 78901234 56 78 90 1 2 34 56 7 8 90 12 34 56
  S -

3 4      5      6      7      8 8      9
789012345678901234567890123 4567890123456789 0 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

Figure 2-30. Display Screen Format Specification Format: SFGR-S, Display Control Specification



## FORTRAN IV

SEU provides a display screen format for entering and changing FORTRAN IV statements. Comment statements for FORTRAN IV programs can be entered and changed under control of the FORTRAN IV format if the auto skip option is off (press the Auto Skip command function key).

The FORTRAN IV format is 96 positions long. It is shown in Figure 2-32.

**IBM** GX28-7327- U/M060  
Printed in U.S.A.

**FORTRAN Coding Form**

PROGRAM										PUNCHING INSTRUCTIONS										GRAPHIC PUNCH										PAGE OF CARD ELECTRO NUMBER*									
PROGRAMMER										DATE																													

STATEMENT NUMBER	FORTRAN STATEMENT	IDENTIFICATION SEQUENCE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80		

A
A S
A
A
A

12345 6 78901234567890123456789012345678901234567890123456789012 34567890 1234567890123456

### Sample Display of FORTRAN

A = Alphanumeric  
S = Auto skip

```

8      096  FORTRAN      096      A S P 2      ENTER

12345 6 789012345678901234567890123456789012345678901234567890123456789012
-
7      8 8      9
34567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
    
```

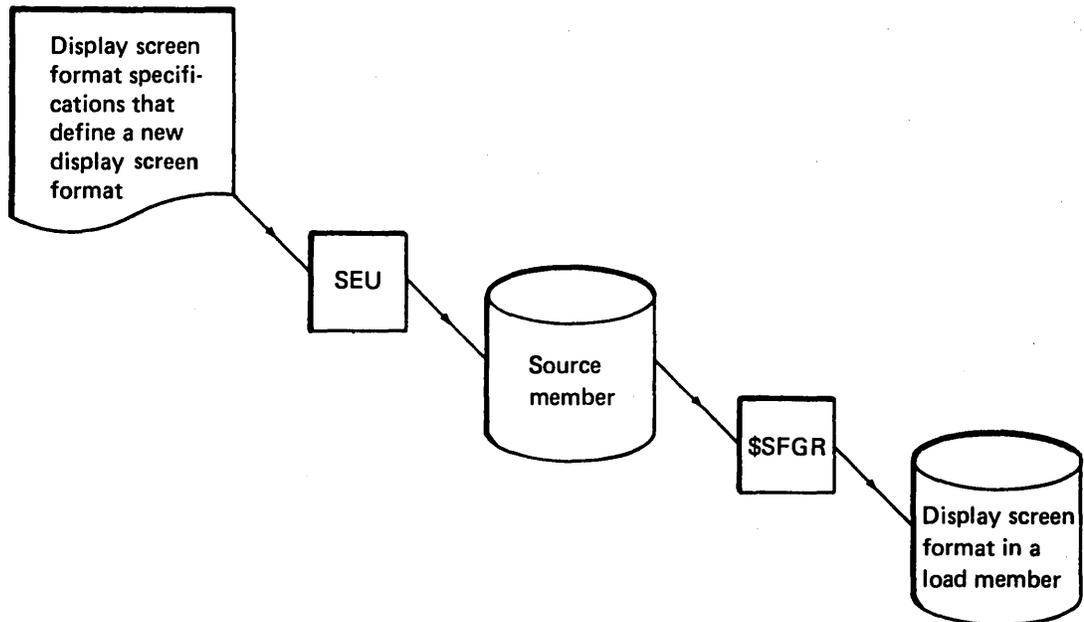
Figure 2-32. FORTRAN IV Format: FORTRAN



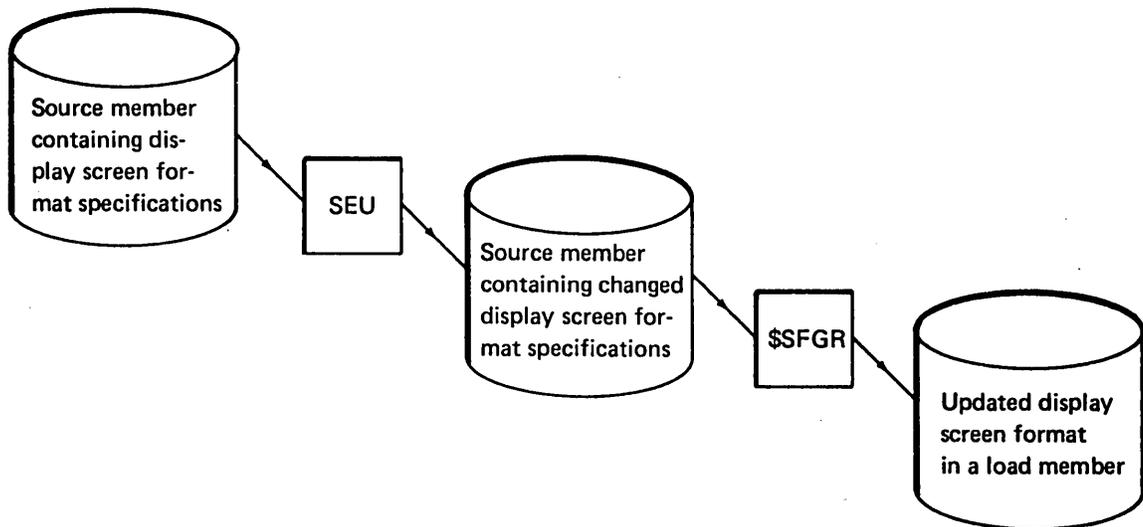
## CREATING AND CHANGING SEU DISPLAY SCREEN FORMATS

This section describes how to use SEU to create and change display screen formats. Because SDA (screen design aid) is also available for creating and changing formats, you may want to compare SEU to SDA after reading this section. SDA is described in the *IBM System/34 Screen Design Aid Programmer's Guide and Reference Manual*, SC21-7716.

All display screen formats exist originally as a sequence of display screen format specifications. Display screen format specifications become display screen formats only after they are entered into a source member, then converted into a load member by the display screen format generator utility program (\$SFGR). SEU can create the original source member.



SEU can also change display screen format specifications that already exist in a source member. Changing the display screen format specifications that define a display screen format is the first step in changing the format itself.



A complete description of how to design display screen formats, code display screen format specifications, and run \$SFGR is given in the *System Support Reference Manual*. An example of how to change a display screen format provided with SEU is given in this chapter under *An Example of How to Change a Display Screen Format*.

Before you create or change an SEU display screen format, however, you should be familiar with the conventions SEU follows in recognizing auto skip, protect, and constant fields. You must also know the restrictions imposed by SEU on the contents of a format intended for SEU.

## **Auto Skip, Protect, and Constant Fields**

Display screen formats reflect the entries specified in display screen format specifications. Use the *System Support Reference Manual* and the information in the following paragraphs to define auto skip, protect, and constant fields for SEU formats.

### **Auto Skip**

An auto skip field is skipped by the display screen cursor whenever the SEU auto skip option is on. An example of an auto skip field in SEU display screen formats is positions 1 through 5, page and line number, in all RPG II specifications.

To define an auto skip field in a format, enter 01 in columns 37 and 38 of the field definition specification.

### **Protect**

A protect field is always skipped by the cursor. An example of a protect field in an SEU display screen format is positions 23 through 39 in the sort field specification.

To define a protect field, enter Y in column 37 of the field definition specification.

### **Constant**

Constants for a statement can be provided in the display screen format for the statement. An example of a constant field in an SEU format is the F in position 6 of the RPG II file description specifications.

To define a constant field, enter 02 in columns 23 and 24 of the field definition specification. You must also enter the content of the field in columns 57 through 79.

Constants are displayed in the assigned positions when the operator enters a new statement. If 02 is coded in positions 23 and 24 of the field definition specification for the display screen format selected for updating a statement, constants are not displayed when the operator updates the statement. Instead, the contents of the field are displayed.

## Restrictions

Review the following restrictions before you enter display screen format specifications that create or change an SEU display screen format:

- A display screen format you define for SEU must describe only lines 1 through 7 of the display screen. SEU places the seven lines properly on the display screen. SEU requires the other lines for displaying status information, prompts, and messages. Although each of lines 1 through 7 need not be defined, defining a line other than 1 through 7 causes an error condition.
- The start line number, columns 17 and 18 of the display screen control specification, must be variable. Enter V in column 17. In addition, enter 00 in columns 19 and 20, number of lines to clear.
- If command key or function key masking is specified in columns 27, 28, and 64 through 79 of the display screen control specification, the masking will be ignored by SEU.
- The display screen cursor can be positioned by a display screen format only once. If more than one cursor position is defined in an SEU display screen format, the last position defined is used. Cursor positions are specified in columns 32 and 33 of field definition specifications.
- An MIC cannot be used to define the heading information displayed in lines 6, 7, 10, and 11. A user message member cannot be called by SEU.
- Fields to contain heading information must be defined as output fields. Enter Y in column 23 of the field definition specification.
- Fields to contain data must be defined as output/input fields. Enter Y in columns 23 and 26 of the field definition specification. By defining data fields both as output and as input, you permit SEU to display data in the fields after the operator enters data into the fields.

### *Size of Display Screen Format*

- A display screen format can define a maximum of 80 input or output/input fields.
- The total length of the output/input fields defined in a display screen format used by SEU must be at least one but not more than 120 positions.

## Names

- The name of the free-form display screen format Z must not be changed, and Z must not be deleted. Z is the format selected by SEU after sign-on. If SEU cannot locate Z, SEU displays an error message.
- The names of the RPG II and auto report display screen formats must not be changed, and the formats must not be deleted, if you want SEU to:
  - Select formats automatically
  - Check for syntax errors in RPG II and auto report statements

The way in which SEU selects display screen formats is described in this chapter under *Selection by SEU*. The way in which SEU checks for syntax errors is described in this chapter under *Syntax Checking of RPG II and Auto Report Statements*.

- The load member name #SE@FORM must not be changed, and the load member #SE@FORM must not be deleted. #SE@FORM contains some of the display screen formats provided with SEU. *Members that Contain Supplied Display Screen Formats* in this chapter identifies the formats stored in #SE@FORM.
- The format name you create must not be the same as any name in #SE@FORM or #SE@XTRA. *Members that Contain Supplied Display Screen Formats* in this chapter lists the formats stored in #SE@FORM and #SE@XTRA.

## Members

- The maximum number of display screen formats that can be stored in one source or load member is 32.
- The load member #SE@FORM and any other load member that contains formats required by an SEU job, including #SE@XTRA, must reside in the active user library or in #LIBRARY (system library). The SEU program load members must also reside in the active user library or in #LIBRARY.

Load members required for execution that have names beginning with #SE must all reside in either the active user library or in #LIBRARY. Load members that contain formats (#SE@FORM, #SE@XTRA, or a user format member) required by an SEU job can reside either in the active user library or in the system library, or in both. If format members reside in both, then SEU will use the member residing in the active user library. In order to use the member in #LIBRARY, a user library should not be specified when signing on to the display station.

The names of SEU program members begin with the characters #SE. You can use the LISTLIBR procedure to determine whether or not all required load members are stored in the same library. If you create a load member that contains display screen formats, specify the correct library in the LIBRARY OCL statement before running \$SFGR. LISTLIBR and LIBRARY are described in the *System Support Reference Manual*.

- Do not use the name of a member that already exists in a library as the name of a display screen format member you add to the library.

## How to Create a Display Screen Format

The procedure for creating a display screen format is outlined in Figure 2-34.

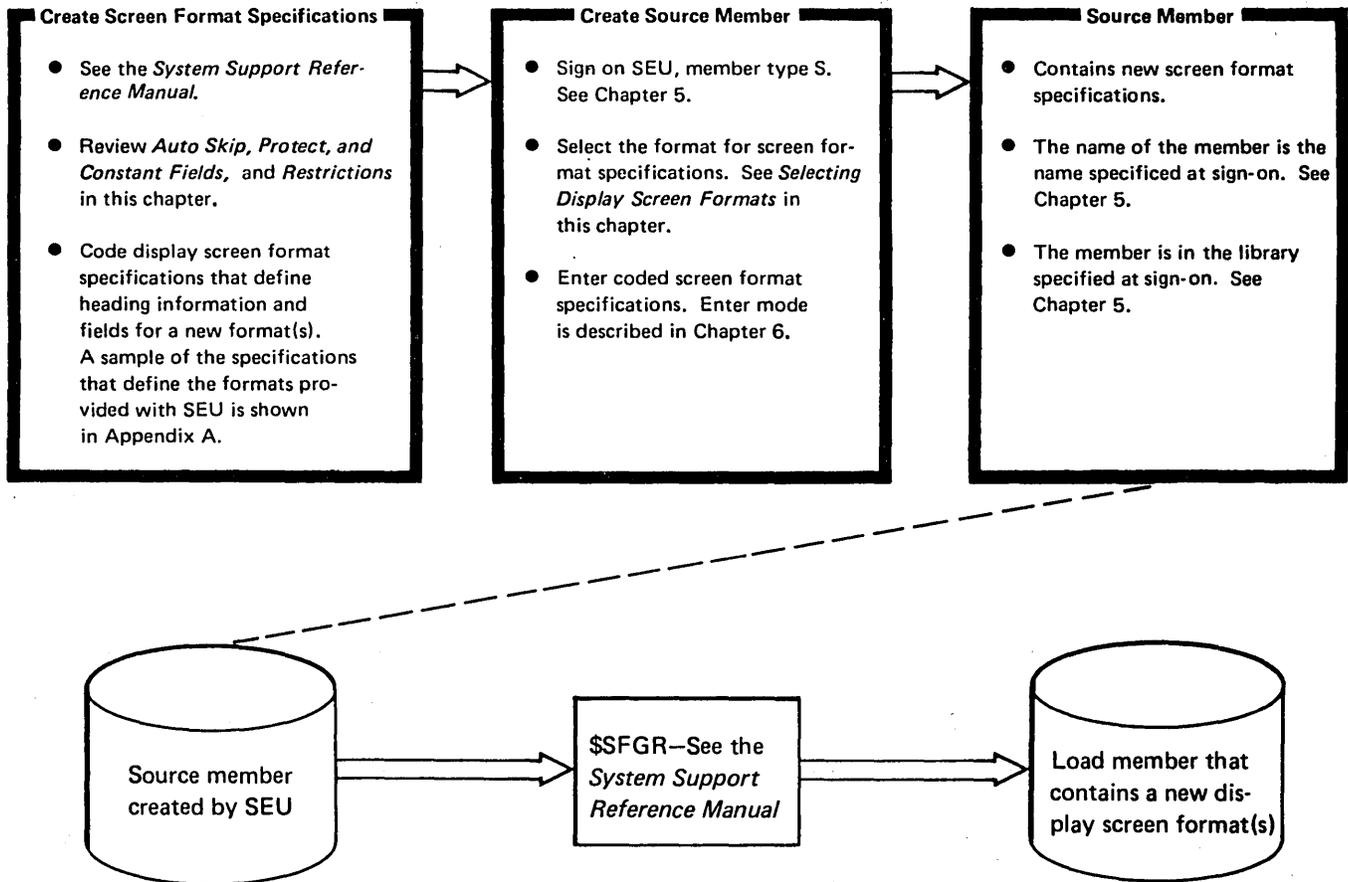


Figure 2-34. Procedure for Creating a Display Screen Format

## How to Change a Display Screen Format

The procedure for changing a display screen format is outlined in Figure 2-35.

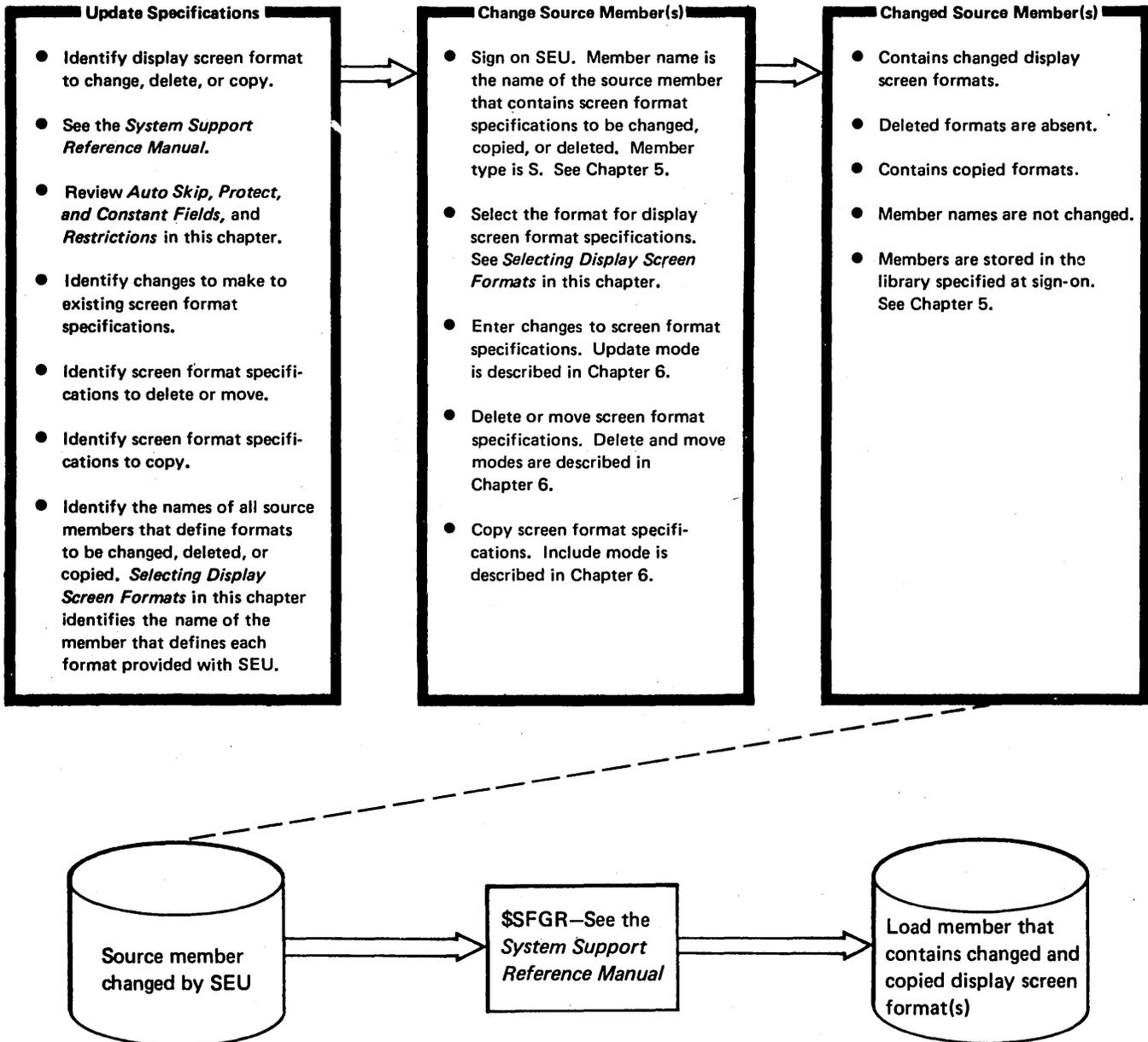


Figure 2-35. Procedure for Changing a Display Screen Format

## An Example of How to Change a Display Screen Format

Figure 2-36 shows a sample display of the display screen format provided for entering and changing RPG II control specifications.

```

8      096  H              096      A S P 2      ENTER

12345 6 789 1 1 1 1 1 1 1 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 4 4 4 4 4 4
H      -  5 6 7 8 9 0 1 2 345 6 7890 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6

4 4 4 5 5 5 5 6 7 7 8 8 9
7 8 9 0 1 2 3 45678901234 567890 1234567890123456

0001.00      -ENTER/UPDATE STATEMENT NUMBER
  
```

Figure 2-36. Sample Display of RPG II and Auto Report Format: H, Control Specification

Note that the headings for the first three fields defined by the format are underscored: the first three fields are defined by the format as auto skip fields, and the auto skip option is on. Also note that the cursor is positioned by the format in position 10.

Suppose you want to change format H so that you can enter data in positions 1 through 9 whether the auto skip option is on or off. Call SEU to change the format H display screen format specifications as they exist in the source member #SE@FORM. The format of the SEU command you would enter is shown in Chapter 5 under *Sample SEU Commands*. Select display screen format SFGR-D to enter changes to the display screen format specifications. Then run \$SFGR to create a new format from the changed specifications.

Figure 2-37 shows a partial listing of the screen format specifications that define H. The listing is marked to indicate the changes required to position the cursor in position 1.

Column Number

1.....0.....0.....0.....0.....0.....0.....0.....0.....0.....0

Code	1	2	3	4	5	6	7	8
<u>00750DHD2COL1</u>	5	202Y			01	12345		
<u>00760DHD2COL6</u>	1	208Y			01	6		
<u>00770DHD2COL7</u>	3	210Y			01	789		
00780DHD2COL10	3	214Y				0 1		
00790DHD2COL12	3	218Y				234		
00800DHD2COL15	1	222Y		Y		5		
00810DHD2COL16	1	224Y			01	6		
00820DHD2COL17	1	226Y			01	7		
00830DHD2COL18	1	228Y			01	8		
00840DHD2COL19	1	230Y				9		
00850DHD2COL20	1	232Y				0		
00860DHD2COL21	1	234Y				1		
00870DHD2COL22	1	236Y			01	2		
00880DHD2COL23	3	238Y			01	345		
00890DHD2COL26	1	242Y				6		
00900DHD2COL27	4	244Y			01	7890		
00910DHD2COL31	1	249Y			01	1		
00920DHD2COL32	1	251Y			01	2		
00930DHD2COL33	1	253Y			01	3		
00940DHD2COL34	1	255Y			01	4		
00950DHD2COL35	1	257Y			01	5		
00960DHD2COL36	1	259Y			01	6		
00970DHD2COL37	1	261Y				7		
00980DHD2COL38	1	263Y			01	8		
00990DHD2COL39	1	265Y			01	9		
01000DHD2COL40	1	267Y			01	0		
01010DHD2COL41	1	269Y		Y		1		
01020DHD2COL42	1	271Y			01	2		
01030DHD2COL43	1	273Y				3		
01040DHD2COL44	1	275Y			01	4		
01050DHD2COL45	1	277Y				5		
01060DHD2COL46	1	279Y			01	6		
<u>01070DDA1COL1</u>	5	302Y	Y	Y	01			
01080	*****							
01090	* THE H IN COLUMN 6 IS A FORCED CONSTANT AND SHOULD NOT *							
01100	* BE CHANGED. *							
01110	*****							
<u>01120DDA1COL6</u>	1	30802	Y	Y	01	H		
<u>01130DDA1COL7</u>	3	310Y	Y	Y	01			
<u>01140DDA1COL10</u>	1	314Y	Y	Y	Y			
01150DDA1COL11	1	316Y	Y	Y	Y			
01160DDA1COL12	3	318Y	Y	Y	Y			
01170DDA1COL15	1	322Y	YN	B	Y	Y		

Figure 2-37. Sample Changes for the Display Screen Format Specifications that Define Format H



## SELECTING DISPLAY SCREEN FORMATS

Display screen formats are selected from load members. SEU selects the free-form format Z for the first display shown after sign-on. The operator can select a different format, can continue to change formats during a job, and can let SEU select formats automatically. A selected display screen format controls the entering and changing of statements even if the length of the statements is different from the length of the display screen format.

### Members that Contain Supplied Display Screen Formats

Display screen formats provided with SEU reside in two load members: #SE@FORM and #SE@XTRA.

#SE@FORM	#SE@XTRA
Free-form formats (Z and Z-LOWER)	Sort formats (SORTH, SORTRC, SORTRF, and SORTF)
RPG II and auto report formats (H, U, F, G, E, L, T, I, J, C, O, P, K, and A)	Assembler format (ASSEM) Magnetic character reader formats (MICRSYS and MICRSTCK)
Work station utility formats (WSU-J, WSU-T, WSU-M, WSU-S, WSU-D, and WSU-C)	FORTRAN IV format (FORTRAN) COBOL format (COBOL)
Display screen format specification formats (SFGR-S and SFGR-D)	

The display screen formats stored in #SE@FORM are available for every SEU job. The formats stored in #SE@XTRA are available only if #SE@XTRA is specified as the format member in the SEU command. The SEU command is described in Chapter 5.

Screen format specifications that define the supplied display screen formats can be copied to different source members and deleted from the original source members. Formats you create are stored in the member you specify when you create them. See *How to Create a Display Screen Format* and *How to Change a Display Screen Format* in this chapter for an outline of how to create, delete, move, and copy formats.

### Selection by the Operator

Immediately after SEU sign-on, SEU displays the free-form format Z. The operator can select a different format by:

1. Pressing the Select Format command function key, reviewing the format names listed on the display screen
2. Keying the number of a format name
3. Pressing the Enter/Rec Adv key

Pressing the Select Format command function key causes SEU to list the names of all the display screen formats contained in #SE@FORM, and the names of all formats contained in the format member specified at sign-on if a format member was specified. Figure 2-39 is an example that shows the names of formats contained in #SE@FORM and #SE@XTRA.

In the following example, formats in #SE@XTRA are named because the SEU command for sign-on contained #SE@XTRA as the third parameter. (The SEU command is described in Chapter 5.)

```

SELECT DISPLAY SCREEN FORMAT MENU
 1 Z          17 WSU-J      33 COBOL      49
 2 Z-LOWER   18 WSU-T      34            50
 3 H          19 WSU-M      35            51
 4 U          20 WSU-S      36            52
 5 F          21 WSU-D      37            53
 6 G          22 WSU-C      38            54
 7 E          23 SFGR-S     39            55
 8 L          24 SFGR-D     40            56
 9 T          25 SORTH      41            57
10 I          26 SORTRC     42            58
11 J          27 SORTRF     43            59
12 C          28 SORTF      44            60
13 O          29 ASSEM      45            61
14 P          30 MICRSYS    46            62
15 K          31 MICRSTCK   47            63
16 A          32 FORTRAN    48            64

-          -ENTER NUMBER OF DISPLAY SCREEN FORMAT DESIRED

```

Figure 2-39. Sample Contents of #SE@FORM and #SE@XTRA

After the operator selects a display screen format, the length of the format is shown in positions 10 through 12 of the status line, and the name of the format is shown in positions 16 through 23.

When the operator selects a display screen format to update a statement, SEU displays the preceding statement in the member, if the statement exists, below the status line. SEU displays the statement to be changed below the format headings. When the operator selects a format to enter a new statement, SEU displays the preceding statement in the member, if the statement exists, below the status line. Constants defined for the new statement, if any, are displayed below the format headings.

Whenever the operator selects a display screen format, the cursor is positioned at the first location where the operator is expected to enter data. If the operator selects free-form format Z or a format other than an RPG II or auto report format supplied with SEU, that format controls all statements entered or updated until the operator selects a different display screen format. If the operator selects an RPG II or auto report format as supplied with SEU and the member type specified in the SEU command is A (auto report) or R (RPG II), SEU begins to select formats automatically. If the member type is S (source) or P (procedure), the operator must select all formats.

## Selection by SEU

SEU automatically selects a display screen format if the following conditions exist at the time a statement is chosen for entry or update:

- The operator is processing RPG II or auto report statements, and the member type specified in the SEU command was R or A (see *SEU Command* in Chapter 5.)
- The preceding display screen format was an RPG II or auto report format, or the preceding format was Z and Z was selected by SEU.

SEU selects a display screen format after the operator enters a statement number in response to a prompt. If the operator is entering a statement, the preceding statement in the member determines which format SEU selects. If the operator is updating a statement, the content of that statement determines which format SEU selects.

*Enter:* If a new statement is being entered, SEU determines the format of the statement that precedes the statement being entered, then selects the same format. If SEU cannot determine that the preceding statement is an RPG II or auto report specification, or if the statement being entered is the first statement in a member, SEU selects the free-form format Z. Figure 2-40 shows the entries in a statement that determine the format selected for the next statement entered.

After SEU selects a display screen format, the length of the format is shown in positions 10 through 12 of the status line, the name of the format is shown in positions 16 through 23, and the cursor is moved to the first location where the operator is expected to enter data. The preceding statement in the member, if the statement exists, is displayed below the status line. Constants defined for the new statement, if any, are displayed below the format headings.

RPG II and Auto Report Entries that Determine Display Screen Format Name	Display Screen Format Name
H in position 6.	H      RPG II control specification
U in position 6.	U      Option format used by RPG II auto report
F in position 6.	F      File description specification
F in position 6 and K in position 53.	G      File description continuation
E in position 6.	E      File extension specification
L in position 6.	L      Line counter specification
T in position 6.	T      Telecommunications specification
I in position 6 and nonblank character in position 15.	I      Input specification (record identification)
I in position 6 and blank in position 15.	J      Input specification for columns 43 through 96 (field description)
C in position 6.	C      Calculation specification
O in position 6 and nonblank character in position 15.	O      Output specification (file identification and control)
O in position 6 and blank in position 15.	P      Output specifications for columns 23 through 96 (field description)
/COPY in positions 7 through 11. <sup>1</sup>	K      Copy specification used by RPG II auto report
During update, an asterisk in position 7 indicates a comment statement in RPG II or auto report. The entry in position 6 is ignored.	A      RPG II comment
When a new statement is entered, an asterisk in position 7 of the previous statement causes SEU to select a format based on the entry in position 6.	
Free form is chosen when none of the above entries are present.	Z      Free form
<sup>1</sup> If positions 7 through 11 contain /COPY, the K format is selected regardless of the entry in position 6.	

Figure 2-40. Entries that Determine Display Screen Formats Selected by SEU

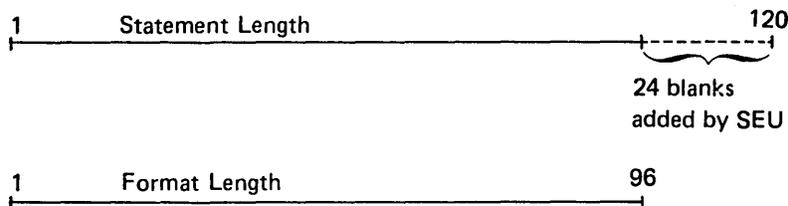
**Update:** If a statement is being updated, SEU determines the display screen format of the statement, and, if the statement is an RPG II or auto report specification, selects the same format. If SEU cannot determine that the statement being updated is an RPG II or auto report specification, SEU selects the free-form format Z. Figure 2-40 shows the positions and values in an original statement that determine the format selected for the updated statement.

After SEU selects a display screen format, the length of the format is shown in positions 10 through 12 of the status line, the name of the format is shown in positions 16 through 23, and the cursor is moved to the first location where the operator is expected to enter data. The preceding statement in the member, if the statement exists, is displayed below the status line. The statement to be updated is displayed below the format headings.

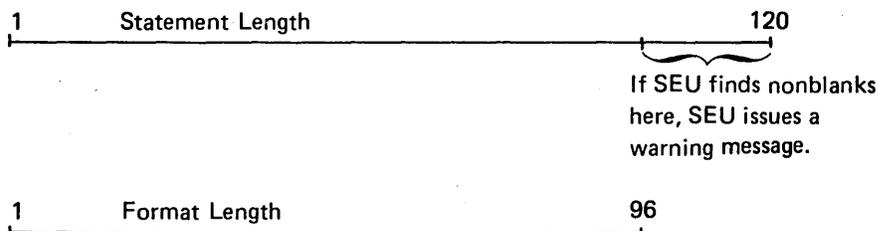
### Format Length

The operator can enter and update statements that do not have the same length as that of the selected display screen format.

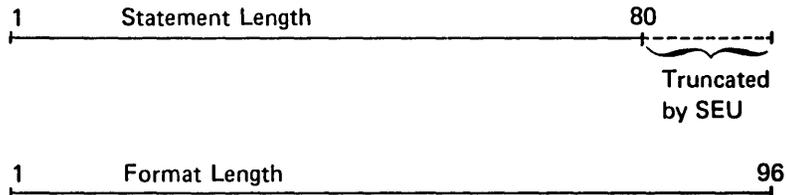
If the statement length of a new statement being entered is greater than the length of the selected format, SEU permits the operator to enter data in the positions defined by the format, then adds enough blanks to the statement to extend it to the specified statement length. For example, if the statement length is 120 and the format length is 96, SEU accepts 96 characters of data and adds 24 blanks.



If the length of a statement selected for update is greater than the length of the selected format, and if SEU discovers nonblank characters in positions in the statement that are beyond the positions defined by the format, SEU displays a warning message. The operator can then select a longer format to avoid losing data, or can press the Enter/Rec Adv key to enter blanks over the characters.



If the statement length of a statement being entered or updated is less than the length of the selected format, SEU permits the operator to enter data only within the limits of the statement length. If the operator tries to enter data beyond the specified statement length, SEU truncates the statement at the statement length, displays an error message, and displays the truncated statement. The operator can press the Enter/Rec Adv key to enter the statement as it is displayed.



### CHECKING SYNTAX OF RPG II AND AUTO REPORT STATEMENTS

If you do not change the original names of the RPG II and auto report display screen formats provided with SEU, SEU can check the syntax of RPG II and auto report statements that are entered into members specified as member type A or R. Member type is specified in the SEU command. The command is described in Chapter 5.

SEU offers the option of limited syntax checking to help eliminate compile time errors. SEU can diagnose many coding or keying errors that would result in a terminal compilation error, but SEU cannot diagnose all errors detected by the RPG II compiler. For example, SEU does not detect errors that result from a conflict between entries in two or more statements.

Position 42 of the SEU status line reflects the status of the syntax checking option: S if it is on, blank if it is off. The syntax checking option is on after SEU sign-on. If it is later turned off, the operator can turn it on again by pressing the Alter Syntax command function key.

### Error Detection

If the syntax checking option is on and the format displayed on the display screen is an RPG II or auto report format, SEU checks the syntax of each statement keyed. SEU checks the syntax when the operator presses the Enter/Rec Adv key to enter the statement. SEU can diagnose only one error each time it checks the syntax of a statement, even though a statement may contain several errors.

If SEU finds a syntax error in a statement, SEU displays a diagnostic message. So that the operator can correct the error, SEU displays the statement again. When the operator presses the Enter/Rec Adv key after correcting the error, SEU again checks the syntax of the statement.

If the operator presses the Accept With Error command function key after a syntax error is found, SEU checks the syntax of the displayed statement again and writes the statement to the work file whether or not an error still exists in the statement. If the print option is on and a syntax error is present, SEU prints the statement, followed by \*\*\*. SEU also prints an asterisk (\*) beneath a field that is related to the error, and prints the MIC of the appropriate SEU diagnostic message after the asterisk so that the message can be found in Appendix B of this manual.

If the print option is on but the operator corrected all syntax errors in a statement before pressing the Accept With Error command function key, SEU prints only the statement.

### **Auto Report Restrictions**

The SEU syntax checker allows auto report entries on all statements using F, I, J, O, and P display screen formats. Auto report functions are allowed on all output specifications. However, because the RPG II and auto report formats provided with SEU require numeric entries in certain fields, restrictions apply to the use of ampersands (&) in file description specifications and in input specifications.

- A blank entry is allowed for every field other than filename (positions 7 through 14) in file descriptions. In the F format provided with SEU, an & is valid wherever a blank is valid, except in:
  - Block length (positions 20 through 23)
  - Record length (positions 24 through 27)
  - Length of key field (positions 29 and 30)
  - Key field start location (positions 35 through 38)
  - Number of extents (positions 68 and 69)
  
- A blank entry is allowed for every field other than field name (positions 53 through 58) in input specification field description. In the J format provided with SEU, an & is valid wherever a blank is valid except in:
  - From (positions 44 through 47)
  - To (positions 48 through 51)

A blank entry in a statement in an auto report member is not necessarily a blank entry after RPG II compilation: it may be modified by a statement being copied. Therefore, the level of syntax checking performed on auto report specifications is limited to the level of syntax checking performed on RPG II specifications.

## Chapter 3. Statement Numbering

Whenever SEU processes a library member, SEU assigns each statement in the member a unique statement number. SEU also requests a number for each new statement entered. By assigning a number to each statement, SEU provides an efficient way to identify statements to enter, change, delete, move, or include. The operator can identify each statement in a member by entering the associated statement number.

Statement numbers assigned by SEU are temporary: they last only for the duration of the job. Statement numbers do not become part of the statement or part of the member. Do not confuse the statement numbers assigned by SEU with sequence numbers that may be part of the records in a source member; they are not the same thing.

### Description

The form of the statement number is xxxx.xx. If the operator enters the decimal positions, the operator must also enter the decimal point. If the decimal positions are not entered, SEU assumes zeros for the positions. Leading zeros are not required. For example, the following numbers are all equated to statement number 5: 5, 5.0, 5.00, and 0005.00.

When SEU processes an existing member, the first statement in the member is assigned number 1.00, the second 2.00, the third 3.00, and so on, to as high as 9999.00. The maximum number of statements SEU allows in a member is 9999. If the operator tries to enter another statement, SEU displays an error message. If the SEU print option is on, SEU prints the statement keyed, but does not store the statement.

By entering, moving, or including statements, the operator can place statements after the last statement present in a member. By entering, moving, or including statements, the operator can also insert statements between other statements in a member. Added or inserted statements are assigned the numbers entered by the operator.

If the operator enters a statement number higher than the highest existing statement number in the member, the statement number cannot be greater than the next highest whole number plus 0.99. For example, if the highest statement number is 0004.00, a higher statement number can be any number from 0004.01 through 0005.99; if the highest statement number is 0006.98, a higher number can be any number from 0006.99 through 0007.99.

The operator can insert up to 99 statements between any two existing statements. For example, the operator can insert 1.01 through 1.99 between statements 1.00 and 2.00.

Whether statements are added, deleted, or moved by a job, the next time SEU processes the member all statements are assigned numbers 1.00, 2.00, 3.00, and so on. Statements that were added the last time SEU processed the member are numbered as though all statements were entered in sequence.

**Example**

Assume that the following statements exist in a member, and that when SEU is run to change the member, the statements are assigned the following statement numbers:

0001.00 CHICAGO  
0002.00 LISBON  
0003.00 NEW YORK  
0004.00 ROME  
0005.00 SAN FRANCISCO  
0006.00 TOKYO

The operator adds the following statements to the member:

0001.10 COPENHAGEN  
0002.10 LONDON  
0002.20 LOS ANGELES  
0003.10 PARIS  
0007.00 WASHINGTON

The next time SEU is called to process the member, SEU assigns statement numbers as follows:

0001.00 CHICAGO  
0002.00 COPENHAGEN  
0003.00 LISBON  
0004.00 LONDON  
0005.00 LOS ANGELES  
0006.00 NEW YORK  
0007.00 PARIS  
0008.00 ROME  
0009.00 SAN FRANCISCO  
0010.00 TOKYO  
0011.00 WASHINGTON

## How to Insert More than 99 Statements

The following example shows you how to insert more than 99 statements between two existing statements in a member. The following statement numbers already exist:

0213.00  
0214.00  
0215.00  
0216.00

Assume that the operator wants to insert (by entering, moving, or including) 150 statements after statement number 214.00. The operator can select move mode and move 214.00 to 213.01 by responding to move mode prompts as follows:

MOVING TO STATEMENT NUMBER: 213.01  
MOVING FROM STATEMENT NUMBER: 214

After the operator presses the Enter/Rec Adv key to move the statements, the statement numbers are:

0213.00  
0213.01  
0215.00  
0216.00

A total of 198 statements can now be inserted after statement number 0213.01.



## Chapter 4. Considerations for the User

Whether you define SEU jobs for someone else or run the jobs yourself, the following considerations can help you use SEU efficiently.

### PROGRAMMING CONSIDERATIONS

#### SEU on a Multiprogramming System

In multiple program mode, System/34 permits several programs to run at once. The system provides a copy of SEU for each display station that calls SEU. As with any other program, the performance of SEU may be noticeably affected if an SEU job and several other jobs are running at the same time. See the *System Support Reference Manual* for additional multiprogramming considerations.

#### Library Space

You can create space in your libraries by reducing the size of the source and load members #SE@FORM and #SE@XTRA. The source members named #SE@FORM and #SE@XTRA contain the display screen format specifications that define the display screen formats provided with SEU. The load members named #SE@FORM and #SE@XTRA contain the provided display screen formats.

Reduce the size of the source members #SE@FORM and #SE@XTRA by deleting specifications for formats that you do not need. Then reduce the size of the load members #SE@FORM and #SE@XTRA by using \$SFGR to create new load members from the modified source members. For the procedure to follow, see *How to Change a Display Screen Format* in Chapter 2.

If you do not intend to change the display screen formats contained in the load members #SE@FORM and #SE@XTRA, you can create space in your libraries by deleting the source members #SE@FORM and #SE@XTRA entirely. You can also delete the load member #SE@XTRA as follows: (1) delete unnecessary formats from #SE@FORM, (2) include in #SE@FORM any formats you need from #SE@XTRA, (3) delete #SE@XTRA. You must not, however, delete the load member #SE@FORM from the library. For information on including from members and deleting members, see *How to Include from a Member* and *How to Delete a Member* in this chapter.

**Note:** To preserve modifications you make to #SE@FORM and #SE@XTRA in a system where SEU is removed after SEU jobs are run, use the SEUSAVE procedure to copy the modified members and the other SEU members to a diskette, then use the TOLIBR procedure to load SEU from that diskette whenever you put SEU back on the system. If you install a new version of SEU on your system, incorporate the modifications by modifying the new version of #SE@FORM and #SE@XTRA. For a description of SEUSAVE and of how to install new versions of your system, see the *Program Product Installation and Modification Reference Manual*. For a description of TOLIBR, see the *System Support Reference Manual*.

### **Size of Library Member**

The amount of time required to perform certain SEU operations depends on the number of statements in the member being processed. The SEU operations affected by the size of a library member are:

- Sign-on
- Sign-off
- Multiple statement delete, move, or include
- Search End Of Source (command function key 9) of an include member (a member from which statements are being copied by the include mode)
- Search of an include member for the statement numbers entered in response to INCLUDING FROM STATEMENT NUMBER and ENDING STATEMENT NUMBER
- Scan of a member for statements containing a given sequence of characters

### **How to Include from a Member**

You can use SEU include mode to copy statements from one member to another. You can also use include to copy statements from one location in a member to another location in the same member, but not during the job in which the original statements are entered. If you include statements from a member currently being changed at a different display station, the statements you copy do not reflect changes made at the other display station: include copies statements as they exist in a library. Statements copied by the include mode are not deleted.

### **How to Delete a Member**

If you delete all statements from a member and take one of SEU end-of-job options 1 through 4, which are described in Chapter 5, the member is removed from the library. However, calling the REMOVE procedure is faster than signing on SEU to delete a member. REMOVE is described in the *System Support Reference Manual*.

## How to Enter Data in Auto Skip Fields

If the auto skip option is off, you can enter data in auto skip fields. Use the Auto Skip command function key to turn the option off or on anytime during an SEU job. Position 39 of the SEU status line shows the status of the auto skip option: A if it is on, blank if it is off.

## Canceling an SEU Job

If you end an SEU job in any way other than by pressing the EOJ command function key and selecting an SEU end-of-job option, the additions and changes you made during the job are not stored in a library.

The SEU work file, which contains the additions and changes you make until your SEU job ends, is treated by the system as a temporary file. If you choose option 2 in response to a system inquiry request or in response to any error message, the file is saved. If you choose option 3 in response to a system inquiry request or in response to any error message other than an SEU error message, the work file is deleted and the data it contains is lost. System inquiry requests are described in Chapter 2 of the *System/34 Operator's Guide*.

**Note:** If the work file is not deleted at the end of a job, or if you choose option 2 in response to a system inquiry request, the SEU recovery prompts appear the next time an operator signs on SEU at the display station.

## OPERATING CONSIDERATIONS

### Function Control Keys

All the System/34 function control keys are described in the *IBM 5251 Display Station Operator's Guide*. However, some of the field exit keys and the Enter/Rec Adv, Home, Dup, Roll↑ (Roll Up), and Roll↓ (Roll Down) keys have special applications in SEU jobs.

*Field exit* is described in Chapter 2. The field exit function control keys are summarized for the enter/update mode in Chapter 6. The Enter/Rec Adv, Home, Dup, Roll↑, and Roll↓ keys are described in the following paragraphs and also summarized in Chapter 6 for each SEU mode.





The Roll↑ key causes SEU to display statements that are closer to the end of the member than those currently on the display screen. If you press the Roll↑ key when no statements exist in the member, SEU issues an error message.

The roll factor determines which statements are displayed after you press the Roll↑ key. Where  $n$  is the roll factor, the first statement displayed is the statement that is  $n$  statements beyond the one currently shown first on the display screen.

For example, assume that all current statement numbers for a member are integers, two lines are reserved for the display of each statement, and the roll factor is 8. If statements 9.00 through 16.00 are being displayed when you press the Roll↑ key, SEU displays statements 17.00 through 24.00. Assume that the roll factor is 16. If statements 9.00 through 16.00 are being displayed when you press the Roll↑ key, SEU displays statements 25.00 through 32.00.

Positions 2 and 3 of the SEU status line show the current roll factor. You can change the roll factor by pressing the Change Roll Factor command function key and entering a new factor. The roll factor can be any value from 1 through 99.

Wraparound occurs after SEU displays the last statement in the member. That is, if the last statement is being displayed when you press the Roll↑ key, SEU displays statements from the beginning of the member. However, the last statement must be displayed before SEU can display from the beginning of the member in response to the Roll↑ key, even if the roll factor specifies that the last statement be excluded from a display. After displaying the last statement in the member, SEU displays the first and following statements in the member the next time you press the Roll↑ key.

For example, assume that all the current statement numbers for a member are integers, the member contains 43 statements, two lines are reserved for the display of each statement, and the roll factor is 16. If statements 33.00 through 40.00 are being displayed when you press the Roll↑ key, SEU displays statement 43.00. If you press the Roll↑ key again, SEU displays statements 1.00 through 8.00.

Except for the restriction of wraparound, the roll factor always determines which sequence of statements is displayed after you press the Roll↑ key. However, the status of the lines per statement option determines how many statements are displayed: a maximum of 8 if the lines per statement is 2; a maximum of 16 if the lines per statement is 1. Position 48 of the SEU status line shows the status of the lines per statement option. You can change the option by pressing the Alter Lines Per Stmt command function key.

*Enter/Update:* In the enter/update mode, the Roll↑ key is valid when:

- The prompt ENTER/UPDATE STATEMENT NUMBER is being displayed. If you press the Roll↑ key, SEU displays:
  - The statements determined by the roll factor
  - The prompt ENTER/UPDATE STATEMENT NUMBER
- A statement is being entered or updated. If you press the Roll↑ key, SEU:
  - Ignores any data you keyed for the statement being entered or updated
  - Displays the statements determined by the roll factor
  - Displays the prompt ENTER/UPDATE STATEMENT NUMBER

*Delete, Move, and Include:* In the delete, move, and include modes, the Roll↑ key is valid when:

- One or more prompts are being displayed without responses. If you press the Roll↑ key, SEU displays:
  - The statements determined by the roll factor
  - The prompts being displayed when you pressed the Roll↑ key
  - The responses you keyed
- All prompts are being displayed with a response. If you press the Roll↑ key, SEU:
  - Displays the statements determined by the roll factor
  - Displays the prompts being displayed when you pressed the Roll↑ key
  - Displays the responses being displayed when you pressed the Roll↑ key
  - Blanks the response to ENDING STATEMENT NUMBER if you entered one (you pressed the Enter/Rec Adv key)

*Scan:* If you press the Roll↑ key in the scan mode, SEU displays:

- The statements determined by the roll factor
- The prompts being displayed when you pressed the Roll↑ key
- The responses you entered (you pressed the Enter/Rec Adv key after keying the responses)



The Roll↓ key causes SEU to display statements that are closer to the beginning of the member than those currently on the display screen. If you press the Roll↓ key when no statements exist in the member, SEU issues an error message.

The roll factor determines which statements are displayed after you press the Roll↓ key. Where  $n$  is the roll factor, the first statement displayed is the statement that is  $n$  statements preceding the one currently shown first on the display screen.

For example, assume that all the current statement numbers for a member are integers, two lines are reserved for the display of each statement, and the roll factor is 8. If statements 25.00 through 32.00 are being displayed when you press the Roll↓ key, SEU displays statements 17.00 through 24.00. Assume that the roll factor is 16. If statements 25.00 through 32.00 are being displayed when you press the Roll↓ key, SEU displays statements 9.00 through 16.00.

Positions 2 and 3 of the SEU status line show the current roll factor. You can change the roll factor by pressing the Change Roll Factor command function key and entering a new factor. The roll factor can be any value from 1 through 99.

Wraparound occurs after SEU displays the first statement in the member. That is, if the first statement is being displayed when you press the Roll↓ key, SEU displays statements from the end of the member. However, the first statement must be displayed before SEU can display from the end of the member in response to the Roll↓ key, even if the roll factor specifies that the first statement be excluded from a display. After displaying the first statement in the member, SEU displays the last and preceding statements in the member the next time you press the Roll↓ key.

For example, assume that all the current statement numbers for a member are integers, the member contains 43 statements, two lines are reserved for the display of each statement, and the roll factor is 16. If statements 4.00 through 11.00 are being displayed when you press the Roll↓ key, SEU displays statements 1.00 through 8.00. If you press the Roll↓ key again, SEU displays statements 36.00 through 43.00.

Except for the restriction of wraparound, the roll factor always determines which sequence of statements is displayed after you press the Roll↓ key. However, the status of the lines per statement option determines how many statements are displayed: a maximum of 8 if the lines per statement is 2; a maximum of 16 if the lines per statement is 1. Position 48 of the SEU status line shows the status of the lines per statement option. You can change the option by pressing the Alter Lines Per Stmt command function key.

*Enter/Update:* In the enter/update mode, the Roll+ key is valid when:

- The prompt ENTER/UPDATE STATEMENT NUMBER is being displayed. If you press the Roll+ key, SEU displays:
  - The statements determined by the roll factor
  - The prompt ENTER/UPDATE STATEMENT NUMBER
- A statement is being entered or updated. If you press the Roll+ key, SEU:
  - Ignores any data you keyed for the statement being entered or updated
  - Displays the statements determined by the roll factor
  - Displays the prompt ENTER/UPDATE STATEMENT NUMBER

*Delete, Move, and Include:* The Roll+ key is valid in the delete, move, and include modes when:

- Statements are not being displayed from an include member
- One or more prompts are being displayed without responses. If you press the Roll+ key, SEU displays:
  - The statements determined by the roll factor
  - The prompts being displayed when you pressed the Roll+ key
  - The responses you keyed
- All prompts are being displayed with a response. If you press the Roll+ key, SEU:
  - Displays the statements determined by the roll factor
  - Displays the prompts being displayed when you pressed the Roll+ key
  - Displays the responses being displayed when you pressed the Roll+ key
  - Blanks the response to ENDING STATEMENT NUMBER if you entered one (you pressed the Enter/Rec Adv key)

*Scan:* If you press the Roll+ key in the scan mode, SEU displays:

- The statements determined by the roll factor
- The prompts being displayed when you pressed the Roll+ key
- The responses you entered (you pressed the Enter/Rec Adv key after keying the responses)

## How to Find a Statement

If you know the statement number of a statement you want displayed, enter the number in response to the appropriate prompt. If you do not know the statement number, use one of the following two methods to find the statement.

- Enter a statement number you think is close to the one you want, then use the Roll↑ or Roll↓ key to locate the statement. After you find the statement, enter the number in response to the appropriate prompt.
- If you know that the statement contains unique characters, such as a filename in an RPG II file description specification, select the scan mode (press the Scan command function key). Enter the unique characters in response to the prompt SCAN CHARACTERS. After scan locates the statement, select the mode you want and enter the statement number in response to the appropriate prompt. (If the first statement located by scan is not the statement you are looking for, repeat the scan by pressing the Enter/Rec Adv function control key or the Scan To Update command function key.)

## How to Change a Response after It Is Entered

When you key a response and press the Enter/Rec Adv key, SEU accepts the response. When you key a response to ENDING STATEMENT NUMBER and press the Enter/Rec Adv key, SEU accepts that response and all responses that precede it on the display screen. However, in every mode except the scan mode, you can change each response after it is entered.

**Scan Mode:** If you are in the scan mode, SEU begins to scan for the specified scan characters as soon as you press the Enter/Rec Adv key or the Scan To Update command function key. If you have not pressed the Enter/Rec Adv key or the Scan To Update command function key, you can change a response keyed for a scan prompt by:

- Moving the cursor to the response you want to change
- Keying a different response
- Pressing the Enter/Rec Adv key or the Scan To Update command function key

**Response to ENDING STATEMENT NUMBER Not Entered:** If you have not entered a response to ENDING STATEMENT NUMBER, you can change the response to every prompt except INCLUDE LIBRARY NAME and INCLUDE MEMBER NAME by:

- Moving the cursor to the response you want to change
- Keying a different response
- Pressing the Enter/Rec Adv key

To change a response to INCLUDE LIBRARY NAME or INCLUDE MEMBER NAME, press the Include command function key twice: SEU displays the include prompts, but removes all former responses. You can then enter new responses.

In every mode but include and scan, you can remove all responses by pressing the command function key for the mode once. For example, to display the move prompts without the responses you entered, press the Move command function key.

*Response to ENDING STATEMENT NUMBER Is Entered:* If you have entered a response to ENDING STATEMENT NUMBER, remove the response by pressing the Roll↑ or Roll↓ key, or by pressing the command function key Search End of Source. You can remove all the responses to statement number prompts by pressing one of the following command function keys: Enter/Update, Delete, Move, Include, or Scan.

To remove responses to INCLUDE LIBRARY NAME or INCLUDE MEMBER NAME, press the Include command function key twice.

After responses are removed, enter new responses.

#### **How to Record Syntax Errors**

SEU prints RPG II and auto report statements that contain diagnosed syntax errors only if the SEU print option is on when you press the Accept With Error command function key. To create a printed record of each statement accepted with an error, with the MIC of the appropriate SEU diagnostic message printed beneath the statement, turn the print option on (Alter Print command function key) before you press the Accept With Error command function key.

After you end an SEU job during which syntax errors were accepted, you can use the printed list of statements and MICs to refer to the diagnostic messages in Appendix B. The messages will help you correct any syntax errors you didn't correct during the job.

## Chapter 5. Sign-On, Recovery, and End of Job

### SIGN-ON

The operator can sign on SEU by entering the SEU command. The OCL statements required for SEU sign-on are in the procedure called by the SEU command. Conventions for coding procedure commands and OCL statements are described in the *System Support Reference Manual* under *Conventions Used for Describing Statement Formats*. The following paragraphs describe the SEU command and SEU OCL.

### SEU Command

The SEU command can be entered by keying SEU and the required parameters or by entering only SEU and then keying responses to the parameter prompts that will be displayed. See *Displays During Sign-On* in this chapter for further explanation.

The format of the SEU command is:

$$\text{SEU member name, } \left\{ \begin{array}{c} \text{A} \\ \text{P} \\ \text{R} \\ \text{S} \end{array} \right\} , [\text{format member name}], [\text{statement length}],$$

**[library name]**  
**#LIBRARY**

**Member Name:** Specifies the name of the member to be created or changed. This parameter is required. If it is not entered, the system prompts the operator for a member name. The name can be 1 to 8 characters long (see the *System Support Reference Manual* for characters that are valid in library member names). If the name identifies an existing member in the specified library (library name parameter), SEU assumes that the member is to be changed. If the name does not identify an existing member, SEU assumes that the member is to be created.

A  
P : Specifies the member type of the member to be created or changed.  
R  
S

Type	Contents of Member
A	Auto report specifications (syntax checking available)
P	Procedure
R	RPG II specifications (syntax checking available)
S	Source statements, such as RPG II or auto report specifications, sort sequence specifications, work station utility specifications, display screen format specifications, or statements for a message source member (syntax checking not available)

Member type is required. If it is not entered, the system displays the prompt ENTER MEMBER TYPE.

*Format Member Name:* Specifies the name of a load member containing display screen formats that this job uses in addition to the formats in #SE@FORM. This parameter is not required. If it is not entered, SEU assumes that the formats in #SE@FORM are sufficient for this job. If the formats supplied in #SE@XTRA are to be used, #SE@XTRA must be entered as the format member name. (#SE@FORM and #SE@FMT must not be entered as format member names.)

The name can be 1 to 8 characters long. If it is entered, the system searches the active user library for the member if an active user library exists. If the member is not found in the active user library, or if an active user library does not exist, the system searches the system library (#LIBRARY). If the member is not found in the active user library or in the system library, SEU displays an error message. (For a description of how to specify an active user library, see the *System Support Reference Manual*.)

*Statement Length:* Specifies the length of the statements to be entered or changed. Statement length is not required. If it is not entered, or if an invalid length is entered, SEU supplies a default value.

Member Type	Valid Statement Length	Default Length
A	80-96 <sup>1</sup>	96 <sup>1</sup>
P	40-120	120
R	80-96 <sup>1</sup>	96 <sup>1</sup>
S	40-120 <sup>1</sup>	96 <sup>1</sup>

<sup>1</sup>If the actual statement length of a member is 80, but a statement length of 96 is specified or assumed in the SEU command, SEU automatically changes the physical statement length of the member from 80 to 96. If the actual statement length of a member is neither 80 nor 96, but 96 is specified or assumed in the SEU command, SEU displays an error message.

For a description of the relationship between statement length and display screen format length, see *Format Length* in Chapter 2.

*Library Name:* Specifies the name of the library that contains the member to be changed, or that will contain the member to be created. If the library is not found, SEU displays an error message. Library name is not required. If it is not entered, SEU assumes the name to be #LIBRARY, the name of the system library. Library name can be 1 to 8 characters long (see the *System Support Reference Manual* for characters that are valid in library names).

## SEU OCL

The SEU command generates the following OCL statements:

```
// MEMBER USER1-#SE#M1
// MEMBER USER2-#SE#M2
// MEMBER PROGRAM1-#SE#M1
// MEMBER PROGRAM2-#SE#M2
// LOAD #SEU
// WORKSTN RESTORE-YES,UNIT-display station ID
// RUN
// SEU NAME-member name,TYPE-member type,
      FORMAT-format member name,LENGTH-statement length,
      LIBRARY-library name
// END
```

## Sample SEU Commands

Assume that (1) an SEU job is to create a source member named RPGRUN, (2) the member will contain RPG II specifications, (3) the job will use the display screen formats in the format load member #SE@FORM, (4) the statement length for the member is 96, the default length, and (5) the member will reside in #LIBRARY, the default library name. The sign-on command for the job is:

```
SEU RPGRUN,R
```

Assume that (1) an SEU job is to change the source member named SORTA, (2) the member contains sort sequence specifications, (3) the sort formats are in the format load member #SE@XTRA, (4) the statement length for the member is 96, the default length, and (5) the member resides in the library named USERLIB1. The sign-on command for the job is:

```
SEU SORTA,S,#SE@XTRA,,USERLIB1
```

Assume that (1) an SEU job is to create a procedure member named PROCM, (2) the display screen formats created especially for this kind of job reside in the format load member named MRTFORM, (3) the statement length for the procedure member is 96, and (4) the new procedure member will reside in the library named USERLIB2. The sign-on command for the job is:

```
SEU PROCM,P,MRTFORM,96,USERLIB2
```

The SEU command you would enter to sign on SEU for the sample job described in Chapter 2 under *An Example of How to Change a Display Screen Format* is:

```
SEU #SE@FORM,S,,80
```

- The member being changed is the source member #SE@FORM, which contains the display screen format specifications that define the RPG II and auto report control specification display screen format (H).
- Format member name is not required because the display screen format SFGR-D, which you would use to enter changes for #SE@FORM, is in the format load member #SE@FORM.
- The length of the statements in the source member #SE@FORM is 80.
- Library name is not required because the source member being changed, #SE@FORM, is in #LIBRARY, the system library.

## Sample Sign-On Displays

### Displays During Sign-On

Figure 5-1 shows the kind of display that appears after the operator enters the SEU command if member name or member type (parameters 1 and 2) is not entered. Any parameters that are entered on the initial command appear to the right of the corresponding prompts on this screen. The default value of #LIBRARY appears if nothing is entered for the library parameter.

The operator should key parameters that should be added, key over any displayed parameters that should be changed, and then press the Enter/Rec Adv key to enter these parameters. If the member name or member type still are not entered, the system will prompt for them again.

#### SEU COMMAND PROMPTS

```
THE NAME OF THE MEMBER IS.....  
THE MEMBER TYPE IS (A,R,S, OR P).....  
THE NAME OF THE FORMAT MEMBER TO BE USED IS.....  
THE LENGTH OF THE STATEMENTS IS.....  
THE NAME OF THE LIBRARY CONTAINING THE MEMBER IS.. #LIBRARY
```

This display appears if the operator entered the SEU command but did not enter both member name and member type.

**Figure 5-1. Sample Sign-On Prompt Display**



## RECOVERY

SEU provides a way to recover from error conditions and system failures. If an error condition exists, such as the required disk space for the work file is not available, or if a system failure such as power failure occurs, the operator can later recover data from the SEU work file by:

- Signing on at the display station being used at the time the error condition or failure occurred
- Entering the same SEU command that was entered for the original job

After the SEU command is entered, SEU determines whether or not data can be recovered from the work file and displays the appropriate messages. The operator can continue the job if recovery is possible, although some of the entries made just prior to the failure may have to be repeated.

If the SEU command entered for recovery is not the same as the command that was entered for the original job, SEU displays an error message. One of the options available as a response to the message causes SEU to display the parameters in the original SEU command.

A second command display station can request an SEU work file at the time a display station is running SEU. Each display station running SEU has a work file assigned to it. Although no job other than the SEU job using the work file should refer to the work file, some system utility programs are able to refer to SEU work files. If a different program is using the SEU work file at the time SEU goes to end of job, SEU does not delete the work file at SEU end of job. Consequently, when SEU is signed on again at the display station, the prompts and displays that appear are the same as those displayed during SEU recovery.

*Note:* SEU cannot recover from permanent disk errors.

## END OF JOB

SEU begins to perform end-of-job operations after the operator presses the EOJ command function key. After the operator presses EOJ, SEU displays the list of options shown in Figure 5-4.

```
END OF JOB OPTION MENU
0 RETURN TO PROCESSING
1 END OF JOB WITH NO ADDITIONAL OPTIONS
2 END OF JOB WITH A LISTING
3 END OF JOB WITH SERIALIZATION
4 END OF JOB WITH SERIALIZATION AND LISTING
5 END OF JOB--NO REPLACE
```

-END OF JOB OPTION

**Figure 5-4. SEU End-of-Job Options**

The operator must respond to the prompt END OF JOB OPTION by entering one of the displayed option numbers.

## End-of-Job Options

- 0 RETURN TO PROCESSING returns control to the operation being performed when the operator pressed the EOJ command function key. If the operator selects option 0, the job continues as though EOJ had not been pressed, except that the cursor is returned to the first cursor position defined by the display screen format selected last. Option 0 is not valid if the SEU work file is full or if a terminal error exists for the display station.
- 1 END OF JOB WITH NO ADDITIONAL OPTIONS causes SEU to copy the source or procedure member from the work file to a library.
- 2 END OF JOB WITH A LISTING causes SEU to copy the source or procedure member from the work file to a library, and then to list the member on the printer currently assigned to the display station.
- 3 END OF JOB WITH SERIALIZATION can cause SEU to display two additional prompts.

PROGRAM NAME DUPLICATION DESIRED. This prompt is displayed if the member type specified in the SEU command is A, R, or S, and the statement length specified in the command is 80 or greater. Valid responses are Y for yes and N for no.

If the operator enters Y, SEU locates the value contained in positions 75 through 80 of the first statement in the member, and copies the value into positions 75 through 80 in each of the remaining statements in the member. SEU will copy the value over serial numbers if they exist in positions 75 through 80. If a source member contains compile time data and program name duplication is requested, a serial start position of 1 should be specified to prevent overlaying of compile time data. If serialization is being done in positions 1 through 4 and \*\*blank is found in positions 1 through 3, which indicates the presence of compile time data, program name duplication and serialization are discontinued. (If serialization is chosen at end of job, the operator is always prompted for SERIAL START POSITION.)

If the operator enters N, SEU does not copy the value contained in positions 75 through 80 of the first statement in the member. N is displayed as the response when the prompt PROGRAM NAME DUPLICATION DESIRED is displayed. The operator must press the Enter/Rec Adv key to actually enter N as the response.

If the operator enters any value other than Y or N in response to PROGRAM NAME DUPLICATION DESIRED, SEU displays a message and displays the prompt again.

SERIAL START POSITION. This prompt is always displayed if the operator selects end-of-job option 3. A valid response is any number greater than 0 that is equal to or less than statement length minus 3. The number specifies the position where the serial number will begin in each statement that will contain a serial number.

If the member type is A or R, SEU supplies a default value of 1 in response to SERIAL START POSITION. The operator can enter a different valid response instead of 1. If the member type is P or S, the operator must respond to SERIAL START POSITION. If the operator enters an invalid response for any member type, SEU displays an error message.

If RPG II or auto report statements are being processed and the member contains compile time tables, the operator should specify a serial start position of 1 to prevent the serial numbers from overlaying compile time data. If the operator specifies a serial start position of 1, serialization stops if SEU finds \*\*blank in positions 1 through 3.

After the operator enters a valid response to SERIAL START POSITION, SEU serializes statements in the member. Statements are serialized with four-digit numbers beginning with 0001.

4 END OF JOB WITH SERIALIZATION AND LISTING is a combination of options 2 and 3. The member is serialized, copied from the work file to a library, and listed on a printer.

5 END OF JOB-NO REPLACE causes SEU to end the job by deleting the SEU work file. All data entered during the job is lost. If it exists, the source or procedure member named in the SEU command remains in the library unchanged.

#### Procedure Members at SEU End of Job

If an SEU job creates or updates a procedure member, SEU displays additional end-of-job prompts if the operator selects end-of-job option 1, 2, 3, or 4.

```
END OF JOB OPTION MENU 2

Y
N
N
- SERIAL START POSITION
- LOG THE PROCEDURE STATEMENTS
- MULTIPLE REQUESTOR TERMINAL PROCEDURE
- PROGRAM DATA IN INCLUDE STATEMENTS
```

**SERIAL START POSITION:** If the operator selected end-of-job option 3 or 4, SEU prompts for a serial start position. A valid response is any number greater than 0 that is equal to or less than statement length minus 3.

**LOG THE PROCEDURE STATEMENTS:** If you want the system to log the procedure statements to the system history file each time the procedure is called, the response must be Y for yes. If you do not want the procedure statements logged, the response must be N for no. The default value for a new member is Y.

**MULTIPLE REQUESTOR TERMINAL PROCEDURE:** If the procedure is a multiple requestor terminal procedure, the response must be Y for yes. If the procedure is not a multiple requestor terminal procedure, the response must be N for no. The default value for a new member is N. For a description of multiple requestor terminal procedures, see the *System Support Reference Manual*.

**PROGRAM DATA IN INCLUDE STATEMENTS:** INCLUDE OCL statements for procedures that call single requestor terminal programs may contain program data instead of parameters. (INCLUDE OCL statements in multiple requestor terminal procedures always contain data instead of parameters.) If INCLUDE statements in the procedure created or changed during the job contain program data instead of parameters, the response must be Y for yes. (Y for this prompt is the same as PDATA=YES for the \$MAINT Library Maintenance Utility Program.) If INCLUDE statements do not contain program data, the response must be N for no. The default value for a new member is N. INCLUDE statements and \$MAINT are described in the *System Support Reference Manual*.

If the SEU job that is ending did not create the procedure, but updated it, SEU displays in the response positions the current status of the options. The operator can change the options.

Although SEU can change statements in an existing procedure, SEU cannot change SSP procedures to user procedures, or user procedures to SSP procedures.

## End-of-Job Considerations

**Options 2 and 4:** If the operator selects end-of-job option 2 or 4, SEU copies the source or procedure member from the SEU work file to a library before it lists the member on a printer. If a system failure occurs during the listing of a member, no SEU recovery action is required: the member is already in a library.

**Serialization:** The operator should not specify a serial start position that could cause SEU to overlay data. If RPG II or auto report specifications are to be serialized, the operator should select end-of-job option 3 with the default of 1 as the serial start position. SEU will then serialize the statements in positions 1 through 4, but will end serialization if **\*\*blank** is found in positions 1 through 3. Ending serialization at **\*\*blank** prevents SEU from overlaying data in compile-time tables.

Serialization of procedures is not recommended. Because serial numbers in a procedure may appear to be parameters, serialization of a procedure may cause errors when the procedure is called.

**Duplicate Member Names at EOJ:** After an operator signs on SEU to create a member, a different operator at a different display station may create a member of the same name for the same library. Consequently, SEU checks for duplicate member names at the end of each SEU job that creates a new member. If SEU determines that the name of a new member already exists in the specified library, SEU displays the message **NAME OF NEW MEMBER FOUND IN LIBRARY AT EOJ-RENAME**. SEU also displays the prompt **NEW NAME FOR MEMBER**. To place the new member in the specified library, the operator must enter a valid member name in response to the prompt. The name entered must not already exist in the specified library.

## Chapter 6. SEU Operating Summary

This chapter presents SEU operating information. It tells you when to use each SEU mode, and briefly describes the prompts, command function keys, and function control keys for each mode. A sample SEU job sheet is shown at the end of the chapter.

For a detailed description of how to operate SEU in each mode, see the *System/34 Operator's Guide*.

### ENTER/UPDATE MODE

Use the enter/update mode to create a new source or procedure member, add statements to an existing member, or change statements in an existing member. SEU selects the enter/update mode after sign-on. If you want to select enter/update after using a different mode, press the Enter/Update command function key.

#### Enter/Update Prompt

The enter/update prompt is:

-ENTER/UPDATE STATEMENT NUMBER

To enter a new statement, enter a new statement number in response to the prompt. Statement numbers are described in Chapter 3. To update an existing statement, enter an existing statement number in response to the prompt.

Figures 6-1 and 6-2 show sample responses to the enter/update prompt.

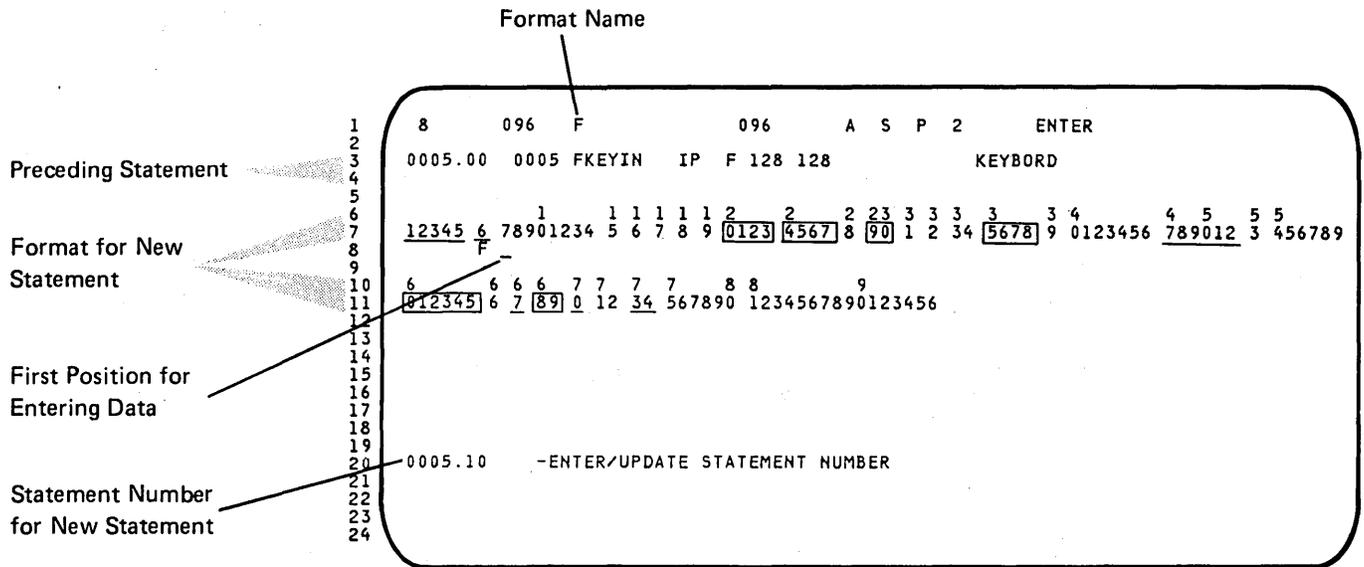


Figure 6-1. Sample Display for Entering a New Statement

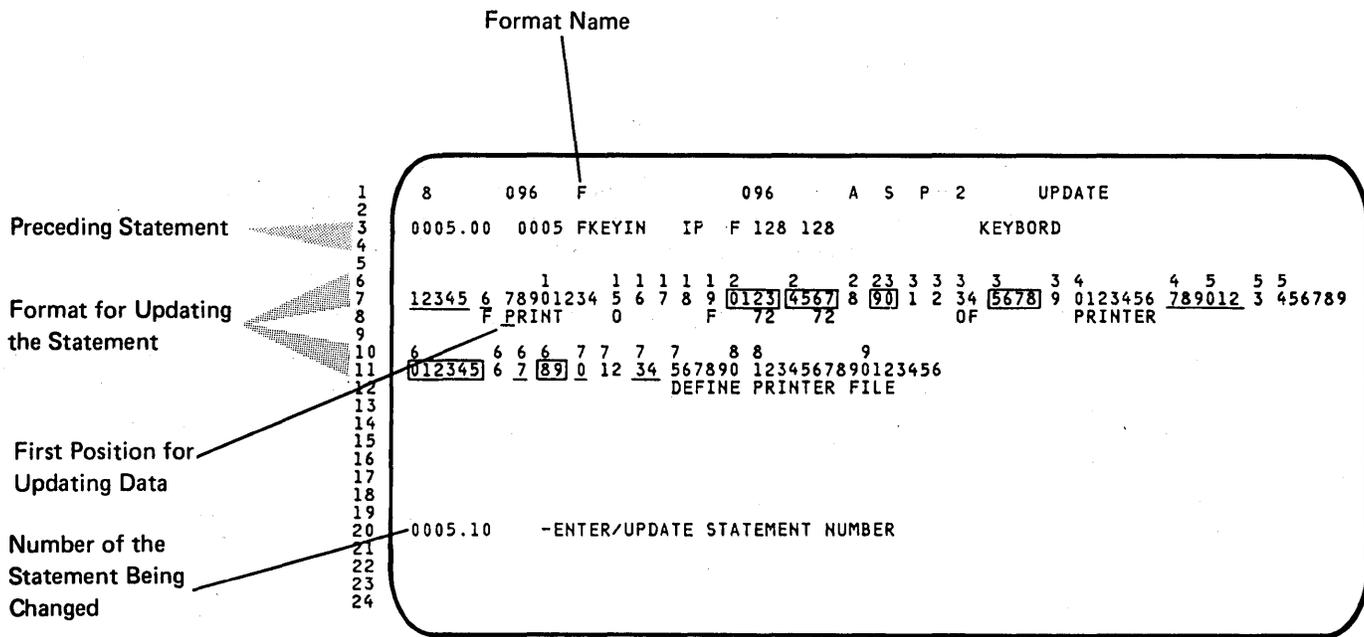


Figure 6-2. Sample Display for Updating a Statement

### Enter/Update Command Function Keys

Figure 6-3 is a summary of SEU command function keys in the enter/update mode.

Command Function Key	When Prompted with ENTER/UPDATE STATEMENT NUMBER	When Statement is Being Entered or Updated
Auto Skip	Reverses status of auto skip option and auto skip indicator.	
Scan	Changes mode to scan mode.	Ignores data keyed for displayed statement and changes mode to scan mode. The Scan key is invalid if no statements exist in the member.
Select Format	Allows you to select a different display screen format.	
Delete	Changes mode to delete mode.	Ignores data keyed for displayed statement and changes mode to delete mode. The Delete key is invalid if no statements exist in the member.
Enter/Update	Repeats prompt ENTER/UPDATE STATEMENT NUMBER.	Ignores data keyed for displayed statement and repeats prompt ENTER/UPDATE STATEMENT NUMBER.
Alter Print	Reverses status of print option and print indicator.	
EOJ	Displays end-of-job options.	
Alter Syntax	Reverses status of syntax checking option and syntax checking indicator.	
Search End Of Source	Displays last statement in member.	Ignores data keyed for displayed statement and displays last statement in member. The Search End Of Source key is invalid if no statements exist in the member.
Move	Changes mode to move mode.	Ignores data keyed for displayed statement and changes mode to move mode. The Move key is invalid if no statements exist in the member.
Include	Changes mode to include mode.	Ignores data keyed for displayed statement and changes mode to include mode.
Accept With Error	Not allowed.	Allowed only if syntax checking option is on and error exists in an RPG II or auto report statement. Places statement with error into member.
Cmd Key Display	Displays keyboard keys used as SEU command function keys and displays a brief description of each key.	
Scan To Update	Scans for a statement and displays it in enter/update mode. Changes mode to scan mode if statement not found or error occurs.	The Scan To Update key is invalid if no statements exist in the member.
Change Roll Factor	Allows you to change the roll factor.	Not allowed.
Alter Lines Per Stmt	Changes the number of lines reserved for the display of each statement.	Not allowed.

Figure 6-3. Command Function Key Summary for Enter/Update Mode

## Enter/Update Function Control Keys

Figure 6-4 is a summary of function control keys in the enter/update mode.

Function Control Key	When Prompted with ENTER/UPDATE STATEMENT NUMBER	When Statement is Being Entered or Updated
Enter/Rec Adv	Indicates that you have finished keying a response. Causes SEU to display the selected statement.	Causes the displayed statement to be placed in the member.
Home	Cursor is moved to the first cursor position as defined by the current display screen format.	When cursor is in first position for a statement, displays preceding statement. Cursor is positioned at first position where operator can enter data.
Dup	Not allowed.	Fills a field or part of a field with data copied from corresponding positions in another statement. If a new statement is being entered, the data is copied from the preceding statement; if an existing statement is being updated, data is copied from the original statement.
Roll ↑	Displays next statements as determined by the roll factor. Redisplays the enter/update prompt.	Ignores data keyed for the displayed statement, displays next statements as determined by the roll factor, and redisplays the enter/update prompt. The Roll ↑ key is invalid if no statements exist in the member.
Roll ↓	Displays preceding statements as determined by the roll factor. Redisplays the enter/update prompt.	Ignores data keyed for the displayed statement, displays preceding statements as determined by the roll factor, and redisplays the enter/update prompt. The Roll ↓ key is invalid if no statements exist in the member.

**Figure 6-4 (Part 1 of 2). Function Control Key Summary for Enter/Update Mode**

## Field Exit Function Control Keys

	Alphameric Field That Is Not Right-Adjust	Alphameric Right-Adjust Field or Numeric Field
<b>Filled</b>	Cursor automatically advances to next field	Press:  → (Cursor Right), →  (Field Advance), Field Exit, or Field+
<b>Partially Filled</b>	Press:  → (Cursor Right), →  (Field Advance), Field Exit <sup>1</sup> , or Field+ <sup>1</sup>	To right adjust, press:  Field Exit or Field+  No right adjust <sup>2</sup> , press:  → (Cursor Right) or →  (Field Advance)
<p><sup>1</sup>The Field Exit and Field+ keys are destructive-exit keys for alphameric fields that are not right-adjust fields. That is, the field positions skipped by the cursor when the Field Exit or Field+ key is pressed are set to blanks if the field is not defined as a right-adjust field. See the <i>System Support Reference Manual</i> for a description of how to define a right-adjust field.</p> <p><sup>2</sup>A partially filled numeric field is not right-adjusted and padded to the left with blanks. The unchanged positions of the field retain the values they had before the operator keyed new data into part of the field.</p>		

Figure 6-4 (Part 2 of 2). Function Control Key Summary for Enter/Update Mode

## DELETE MODE

Use the delete mode to delete statements from a source or procedure member. You can delete one statement at a time or several consecutive statements at once. Select the delete mode by pressing the Delete command function key.

## **Delete Prompts**

The delete prompts are:

- DELETING STATEMENT NUMBER
- ENDING STATEMENT NUMBER

To delete a single statement, respond only to the first prompt. To delete a series of consecutive statements, respond to both prompts. Responses are:

- -DELETING STATEMENT NUMBER: Enter the statement number of the single statement you want to delete, or enter the statement number of the first statement in the series you want to delete.
- -ENDING STATEMENT NUMBER: Enter the statement number of the last statement in the series you want to delete.

After you enter the necessary response(s), press the Enter/Rec Adv key again to cause SEU to delete the statement(s).

Figures 6-5 and 6-6 show sample responses to the delete prompts.

Statement 6.00  
is to be deleted.

```
8
0006.00 0006 FFILENAMEIP F 80 80 A S P 2 KEYBOARD
0007.00 0007 FOUTPUT OP AF 200 100 29AI 72 DISK
          DEFINE OUTPUT FILE
0008.00 0008 ITRAN AA 01 1 CA
0009.00 0009 I OR 02 1 CB
0010.00 0010 I OR 03 1 CC
0011.00 0011 I 2 6 KEY
0012.00 0012 I 7 100AMT
0013.00 0013 IMASTER AB 04 1 CM

0006.00 -DELETING STATEMENT NUMBER
- -ENDING STATEMENT NUMBER
```

Statement 6.00  
is deleted.

```
8
0005.10 FPRINT F 72 72 A S P 2 OF PRINTER
          DEFINE PRINTER FILE
0007.00 0007 FOUTPUT OP AF 200 100 29AI 72 DISK
          DEFINE OUTPUT FILE
0008.00 0008 ITRAN AA 01 1 CA
0009.00 0009 I OR 02 1 CB
0010.00 0010 I OR 03 1 CC
0011.00 0011 I 2 6 KEY
0012.00 0012 I 7 100AMT
0013.00 0013 IMASTER AB 04 1 CM

-DELETING STATEMENT NUMBER
-ENDING STATEMENT NUMBER
```

Enter another  
statement number  
to delete another  
statement.

Figure 6-5. Sample Displays for Deleting a Single Statement

The number of statements being deleted.

Statements 13.00 through 23.00 are to be deleted.

```
8
0013.00 0013 IMASTER AB 04 096 1 CM A S P 2 0011
0023.00 0023 I 2 3 NOM
0013.00 -DELETING STATEMENT NUMBER
0023.00 -ENDING STATEMENT NUMBER
```

Statements 13.00 through 23.00 are deleted.

Enter another statement number to delete more statements.

```
8
0012.00 0012 I 096 A S P 2 7 100AMT
0024.00 0024 IFIRSTSECAB 03 1 CS 2 Z1
0025.00 0025 I BC 04 1 CS 2NZ1
0026.00 0026 ISECSEC AC 05 1 CT 1 Z1
0027.00 0027 I BD 06 1 CT 2NZ1
0028.00 0028 C 01 VALUEA ADD VALUEB CALC 50
0029.00 0029 C 01 CALC SUB VALUEC CALC 22
0030.00 0030 C 01 TOTA ADD VALUEA TOTA 50
-DELETING STATEMENT NUMBER
-ENDING STATEMENT NUMBER
```

Figure 6-6. Sample Displays for Deleting Several Consecutive Statements

## Delete Command Function Keys

Figure 6-7 is a summary of SEU command function keys in the delete mode.

Command Function Key	When Prompted with DELETING STATEMENT NUMBER and ENDING STATEMENT NUMBER	When Statement(s) Are Ready to Be Deleted
Auto Skip	Not allowed.	
Scan	Changes mode to scan mode. No statements are deleted.	
Select Format	Not allowed.	
Delete	Repeats prompts DELETING STATEMENT NUMBER and ENDING STATEMENT NUMBER. No statements are deleted.	
Enter/Update	Changes mode to enter/update mode. No statements are deleted.	
Alter Print	Reverses status of print option and print indicator.	
EOJ	Displays end-of-job options.	
Alter Syntax	Not allowed.	
Search End Of Source	Displays last statement in member.	Displays last statement in member and repeats prompt ENDING STATEMENT NUMBER. No statements are deleted.
Move	Changes mode to move mode. No statements are deleted.	
Include	Changes mode to include mode. No statements are deleted.	
Accept With Error	Not allowed.	
Cmd Key Display	Displays keyboard keys used as SEU command function keys and displays a brief description of each key.	
Scan To Update	Not allowed.	
Change Roll Factor	Allows you to change the roll factor.	
Alter Lines Per Stmt	Changes the number of lines reserved for the display of each statement.	

**Figure 6-7. Command Function Key Summary for Delete Mode**

### Delete Function Control Keys

Figure 6-8 is a summary of function control keys in the delete mode.

Function Control Key	When Prompted with DELETING STATEMENT NUMBER and ENDING STATEMENT NUMBER	When Statement(s) Are Ready to Be Deleted
Enter/Rec Adv	Indicates that you have finished keying one or both of the responses.	Causes the selected statement(s) to be deleted.
Home	Not allowed.	
Dup	Not allowed.	
Roll↑	Displays next statements as determined by the roll factor. Redisplays the delete prompts and the responses keyed.	Displays next statements as determined by the roll factor, redisplays the delete prompts, displays the first response if it was entered, but blanks the response to ENDING STATEMENT NUMBER if it was entered.
Roll↓	Displays preceding statements as determined by the roll factor. Redisplays the delete prompts and the responses keyed.	Displays the preceding statements as determined by the roll factor, redisplays the delete prompts, displays the first response if it was entered, but blanks the response to ENDING STATEMENT NUMBER if it was entered.

**Figure 6-8. Function Control Key Summary for Delete Mode**

## **MOVE MODE**

Use the move mode to move statements from one location in a source or procedure member to another location in the same member. You can move one statement at a time or several consecutive statements at once. Select the move mode by pressing the Move command function key.

### **Move Prompts**

The move prompts are:

- MOVING TO STATEMENT NUMBER
- MOVING FROM STATEMENT NUMBER
- ENDING STATEMENT NUMBER

To move a single statement, respond only to the first two prompts. To move a series of consecutive statements, respond to all three prompts. Responses are:

- **-MOVING TO STATEMENT NUMBER:** Enter the statement number that identifies the new location for the single statement you want to move, or that identifies the new location for the first statement in the series of statements you want to move. The statement number you enter must not already exist in the member.
- **-MOVING FROM STATEMENT NUMBER:** Enter the statement number that identifies the statement you want to move, or that identifies the first statement in the series of statements you want to move.
- **-ENDING STATEMENT NUMBER:** Enter the statement number that identifies the last statement in the series of statements you want to move.

After you enter the necessary responses, press the Enter/Rec Adv key again to cause SEU to move the statement(s).

Figures 6-9 and 6-10 show sample responses to the move prompts.



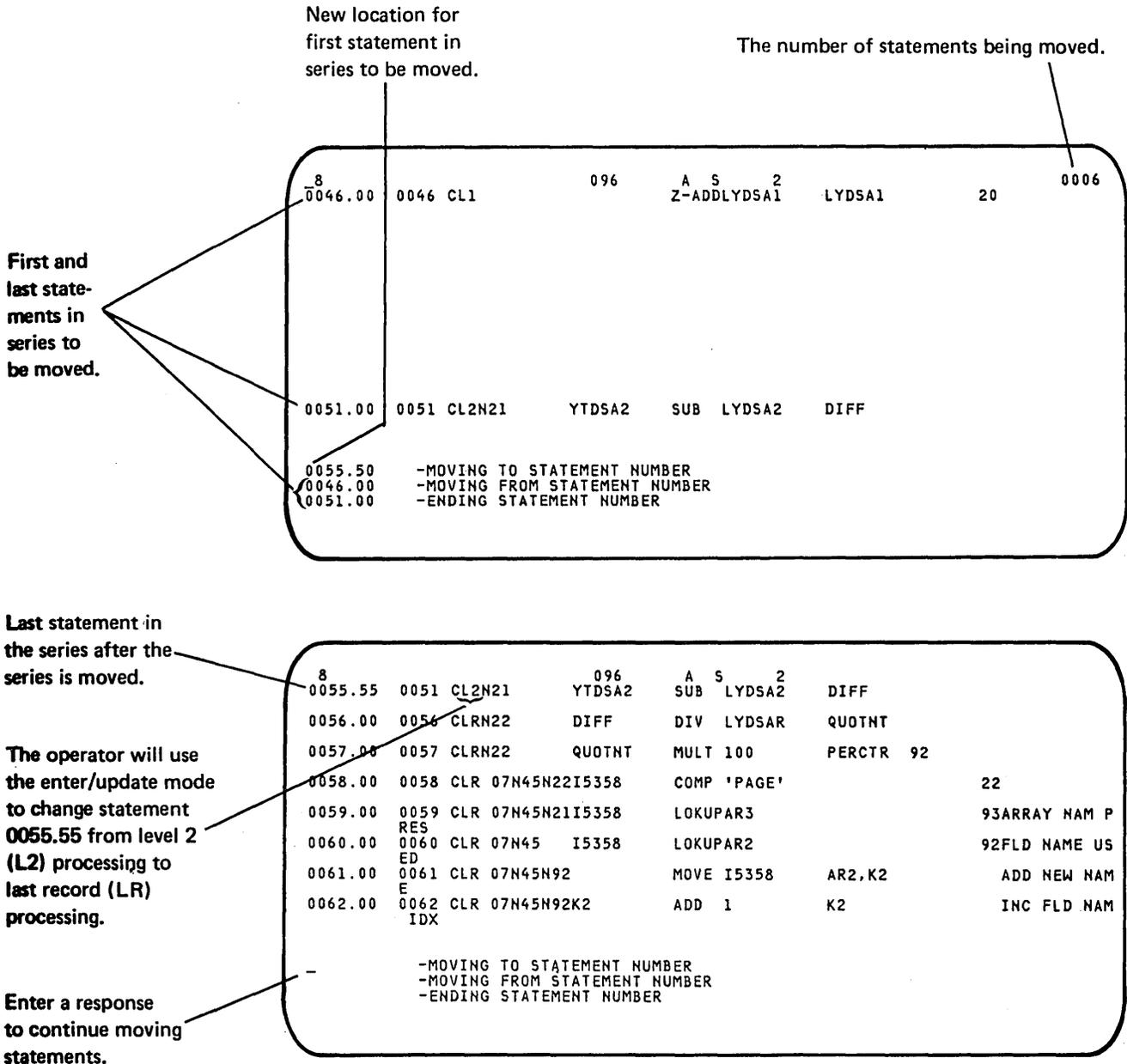


Figure 6-10. Sample Displays for Moving a Series of Statements

### Move Command Function Keys

Figure 6-11 is a summary of SEU command function keys in the move mode.

Command Function Key	When Prompted with MOVING TO STATEMENT NUMBER, MOVING FROM STATEMENT NUMBER, and ENDING STATEMENT NUMBER	When Statement(s) Are Ready to Be Moved
Auto Skip	Not allowed.	
Scan	Changes mode to scan mode. No statements are moved.	
Select Format	Not allowed.	
Delete	Changes mode to delete mode. No statements are moved.	
Enter/Update	Changes mode to enter/update mode. No statements are moved.	
Alter Print	Reverses status of print option and print indicator.	
EOJ	Displays end-of-job options.	
Alter Syntax	Not allowed.	
Search End Of Source	Displays last statement in member.	Displays last statement in member and repeats last prompt. No statements are moved.
Move	Repeats prompt MOVING TO STATEMENT NUMBER. No statements are moved.	
Include	Changes mode to include mode. No statements are moved.	
Accept With Error	Not allowed.	
Cmd Key Display	Displays keyboard keys used as SEU command function keys and displays a brief description of each key.	
Scan To Update	Not allowed.	
Change Roll Factor	Allows you to change the roll factor.	
Alter Lines Per Stmt	Changes the number of lines reserved for the display of each statement.	

Figure 6-11. Command Function Key Summary for Move Mode

### Move Function Control Keys

Figure 6-12 is a summary of function control keys in the move mode.

Function Control Key	When Prompted with <b>MOVING TO STATEMENT NUMBER, MOVING FROM STATEMENT NUMBER, and ENDING STATEMENT NUMBER</b>	When Statement(s) Are Ready to Be Moved
Enter/Rec Adv	Indicates that you have finished keying one or more of the responses.	Causes the selected statement(s) to be moved and the original statement number(s) to be deleted.
Home	Not allowed.	
Dup	Not allowed.	
Roll ↑	Displays next statements as determined by the roll factor. Redisplays the move prompts and the responses keyed.	Displays next statements as determined by the roll factor, redisplays the move prompts, displays any responses that were entered, but blanks the response to <b>ENDING STATEMENT NUMBER</b> if it was entered.
Roll ↓	Displays preceding statements as determined by the roll factor. Redisplays the move prompts and the responses keyed.	Displays preceding statements as determined by the roll factor, redisplays the move prompts, displays any responses that were entered, but blanks the response to <b>ENDING STATEMENT NUMBER</b> if it was entered.

Figure 6-12. Function Control Key Summary for Move Mode

## INCLUDE MODE

Use the include mode to copy statements from one source or procedure member to another, or to copy statements in a source or procedure member to another location in the same member. You can copy one statement at a time or copy several consecutive statements at once. Statements copied by the include mode are not deleted from their original location. Select the include mode by pressing the Include command function key.

### Include Prompts

The include prompts are:

- INCLUDE LIBRARY NAME
- INCLUDE MEMBER NAME
- INCLUDING AT STATEMENT NUMBER
- INCLUDING FROM STATEMENT NUMBER
- ENDING STATEMENT NUMBER

To include a single statement, respond to the first four prompts. To include a series of consecutive statements, respond to all five prompts. Responses are:

- **-INCLUDE LIBRARY NAME:** Enter the name of the library that contains the member from which you want to include one or more statements. Default values are: the library specified in the last parameter of the SEU command, which is described in Chapter 5; or, if you did not name a library in the SEU command, #LIBRARY, the system library.
- **-INCLUDE MEMBER NAME:** Enter the name of the member that contains one or more statements you want to include. If the include member is a procedure member, enter *name,P*, where *name* is the member name. *P* identifies the member as a procedure member.
- **-INCLUDING AT STATEMENT NUMBER:** Enter the statement number that identifies the location for the copy of the statement you want to include, or that identifies the location for the copy of the first statement in the series of statements you want to include.
- **-INCLUDING FROM STATEMENT NUMBER:** Enter the statement number that identifies the statement you want to include, or that identifies the first statement in the series of statements you want to include.
- **-ENDING STATEMENT NUMBER:** Enter the statement number of the last statement in the series of statements you want to include.

After you enter the necessary responses, press the Enter/Rec Adv key again to cause SEU to include the statement(s).

Figures 6-13 and 6-14 show sample responses to the include prompts.

Statements from the include member are displayed after a response to the third prompt is entered.

Indicates the statement is from an include member.

Statement to be copied (included).

Location for the copy of statement 37.00.

```

      8
0037.00* 0037 C  10 02      096      A S P 2
GOTO REPEAT
0038.00* 0038 CLRN55      Z-ADD1      X
0039.00* 0039 CLR      LOOP      TAG
0040.00* 0040 CLR      EXCPT
0041.00* 0041 CLR      GOTO OUT
0042.00* 0042 CLR      1      ADD X      X
0043.00* 0043 CLR      X      COMP PQUES      1111
0044.00* 0044 CLR 11      GOTO LOOP

SEULIB      -INCLUDE LIBRARY NAME
MEMBER01    -INCLUDE MEMBER NAME
0038.50     -INCLUDING AT STATEMENT NUMBER
0037.00     -INCLUDING FROM STATEMENT NUMBER
-          -ENDING STATEMENT NUMBER
  
```

Copy of statement.

Enter a response to continue copying statements from the same member.

```

      8
0038.50 0037 C  10 02      096      A S P 2
GOTO REPEAT
0039.00 0039 C      SECTOR  DIV 8      WORDS  30
0040.00 0040 C      BYTES   DIV 256     SECTRS  50
0041.00 0041 C      STMTLEN MULT NUMSTMT  TOTBYT  150
0042.00 0042 C      TOTBYT  DIV 256     TOTSEC  150
0043.00 0043 C      TOTSEC  DIV 10      TOTBLK  100
0044.00 0044 C      TOTBLK  ADD BUFF   TOTBLK  100
0045.00 0045 C      DATAFD  ADD 1      DATAFD

SEULIB      -INCLUDE LIBRARY NAME
MEMBER01    -INCLUDE MEMBER NAME
-          -INCLUDING AT STATEMENT NUMBER
-          -INCLUDING FROM STATEMENT NUMBER
-          -ENDING STATEMENT NUMBER
  
```

Figure 6-13. Sample Displays for Including a Single Statement

The first and last statements in the series to be copied are displayed after all responses are entered.

Indicates the statement is from an include member.

The number of statements being included.

First and last statements in the series being copied.

Location for the first statement in the copy.

```

8
0014.00* 0014 C          096   A S P 2          0015
          RESULT A      VARA   MULT VARB      RESA  120    CALCULATE R

0028.00* 0028 C          VARO   MULT VARP      RESO  120    CALCULATE R
SEULIB   -INCLUDE LIBRARY NAME
MEMBER01 -INCLUDE MEMBE NAME
0029.10  -INCLUDING AT STATEMENT NUMBER
0014.00  -INCLUDING FROM STATEMENT NUMBER
0028.00  -ENDING STATEMENT NUMBER
  
```

Last statement in the copy.

Enter a response to continue copying statements from the same member.

```

8
0029.24 0028 C          VARO   MULT VARP      RESO  120    CALCULATE R
          RESULT O
0030.00 0030 C  01     TOTA   ADD VALUEA  TOTA   50
0031.00 0031 C  01     TOTB   ADD VALUEB  TOTB   50
0032.00 0032 C  01     TOTC   ADD VALUEC  TOTC   50
0033.00 0033 C  01     TOTAL  ADD CALC    TOTCAL  50
0034.00 0034 C          DATAA  ADD DATAB  ENDA   130
0035.00 0035 C          RATE    MULT INTEREST PRINP  83
0036.00 0036 C          TIME    MULT SPD   DISTAN  30
SEULIB   -INCLUDE LIBRARY NAME
MEMBER01 -INCLUDE MEMBER NAME
          -INCLUDING AT STATEMENT NUMBER
          -INCLUDING FROM STATEMENT NUMBER
          -ENDING STATEMENT NUMBER
  
```

Figure 6-14. Sample Displays for Including a Series of Statements

### Include Command Function Keys

Figure 6-15 is a summary of SEU command keys in the include mode.

Command Function Key	When Prompted with INCLUDE LIBRARY NAME, INCLUDE MEMBER NAME, or INCLUDING AT STATEMENT NUMBER	When Prompted with INCLUDING FROM STATEMENT NUMBER and ENDING STATEMENT NUMBER	When Statement(s) Are Ready to Be Included
Auto Skip	Not allowed.		
Scan	Changes mode to scan mode. No statements are included. The Scan key is invalid if no statements exist in the member.		
Select Format	Not allowed.		
Delete	Changes mode to delete mode. No statements are included. The Delete key is invalid if no statements exist in the member.		
Enter/Update	Changes mode to enter/update mode. No statements are included.		
Alter Print	Reverses status of print option and print indicator.		
EOJ	Displays end-of-job options.		
Alter Syntax	Not allowed.		
Search End Of Source	Displays last statement in signed-on member. The Search End Of Source key is invalid if no statements exist in the member.	Displays last statement in include member.	Displays last statement in include member and repeats last prompt. No statements are included.
Move	Changes mode to move mode. No statements are included. The Move key is invalid if no statements exist in the member.		
Include	Repeats prompt INCLUDE LIBRARY NAME.	Repeats prompt INCLUDING AT STATEMENT NUMBER. No statements are included.	
Accept With Error	Not allowed.		
Cmd Key Display	Displays keyboard keys used as SEU command function keys and displays a brief description of each key.		
Scan To Update	Not allowed.		
Change Roll Factor	Allows you to change the roll factor.		
Alter Lines Per Stmt	Changes the number of lines reserved for the display of each statement.		

Figure 6-15. Command Function Key Summary for Include Mode

**Include Function Control Keys**

Figure 6-16 is a summary of function control keys in the include mode.

<b>Function Control Key</b>	<b>When Prompted with INCLUDE LIBRARY NAME, INCLUDE MEMBER NAME, INCLUDING AT STATEMENT NUMBER, INCLUDING FROM STATEMENT NUMBER, and ENDING STATEMENT NUMBER</b>	<b>When Statement(s) Are Ready to Be Included</b>
Enter/Rec Adv	Indicates that you have finished keying one or more responses.	Causes the selected statement(s) to be included in the signed-on member.
Home	Not allowed.	
Dup	Not allowed.	
Roll↑	Displays next statements as determined by the roll factor. Redisplays the include prompts and the responses keyed. The Roll↑ key is invalid if no statements exist in the member.	Displays the next statements as determined by the roll factor, redisplays the include prompts, displays any responses that were entered, and blanks the response to ENDING STATEMENT NUMBER if it was entered.
Roll↓	If statements from the include member are not being displayed, displays preceding statements as determined by the roll factor, and redisplays the include prompts and the responses entered. If the include member is being displayed, the Roll↓ key is ignored. The Roll↓ key is invalid if no statements exist in the member.	Not allowed.

**Figure 6-16. Function Control Key Summary for Include Mode**

## SCAN MODE

If a statement you want to display contains a string of characters that is unique or uncommon within the member, use the scan mode to search for the statement. You can scan statements for a string that is 1 to 25 characters long. Select the scan mode by pressing the Scan command function key.

### Scan Prompts

The scan prompts are:

- SCAN CHARACTERS
- STARTING POSITION
- NUMBER OF SCAN CHARACTERS

You must respond to at least the first prompt or the last prompt. If you respond to only the last prompt, SEU scans for a string of blanks. The number of blanks in the string is equal to the number keyed in response to the last scan prompt: NUMBER OF SCAN CHARACTERS. Responses for the scan prompts are:

- -SCAN CHARACTERS: Key the character string you want to locate. (SEU cannot scan for lowercase alphabetic characters.) Blanks are valid in any position. If the character string includes one or more trailing blanks, you must respond to the third scan prompt.
- -STARTING POSITION: Key the position at which the scan characters begin in the statement you are searching for. No response—blank—means the starting position is variable or unknown, and causes SEU to scan each statement in its entirety for the specified scan characters. If a starting position is specified, SEU scans the area delimited in each statement by the specified starting position and NUMBER OF SCAN CHARACTERS.
- -NUMBER OF SCAN CHARACTERS: Key the number of characters, including blanks, contained in the string of scan characters. If the number you key is less than the number of characters keyed in response to SCAN CHARACTERS, SEU assumes the number is correct, and truncates the string of scan characters to that length. No response to NUMBER OF SCAN CHARACTERS—you leave the response position blank—indicates the string of scan characters contains no trailing blanks, and causes SEU to count the number of characters in the string.

After you key a response for each prompt you intend to answer, press the Enter/Rec Adv function control key or the Scan To Update command function key. Both keys cause SEU to begin the scan and to display the first statement found. However, Scan To Update causes SEU to display the statement in the enter/update mode so that you can update the statement.

If the first statement SEU locates is not the statement you want, press Enter/Rec Adv or Scan To Update again to continue the scan.

Figure 6-17 shows sample responses to the scan prompts.

Scan begins with this statement.

```

8
0055.55 0051 CL2N21      096  A S 2  YTDSA2  DIFF
0056.00 0056 CLRN22      DIFF  DIV LYDSAR  QUOTNT
0057.00 0057 CLRN22      QUOTNT  MULT 100  PERCTR 92
0058.00 0058 CLR 07N45N22I5358  COMP 'PAGE'  22
0059.00 0059 CLR 07N45N21I5358  LOKUPAR3  93ARRAY NAM P
0060.00 0060 CLR 07N45  I5358  LOKUPAR2  92FLD NAME US
0061.00 0061 CLR 07N45N92  MOVE I5358  AR2,K2  ADD NEW NAM
0062.00 0062 CLR 07N45N92K2  ADD 1  K2  INC FLD NAM
      ED
      RES
      E
      IDX

```

Character string being scanned for.

```

SCAN CHARACTERS..... SPD_
STARTING POSITION.....
NUMBER OF SCAN CHARACTERS.

```

First statement found that contains SPD.

```

8
0036.00 0036 C          096  A S 2  TIME  MULT SPD  DISTAN 30
0037.00 0037 C          LENGTH  MULT WIDTH  AREA  150
0038.00 0038 C          AREA  MULT HEIGHT  VOLUME 150
0038.50 0037 C  10 02  GOTO REPEAT
0039.00 0039 C          SECTOR  DIV 8  WORDS  30
0040.00 0040 C          BYTES  DIV 256  SECTRS  50
0041.00 0041 C          STMTLEN  MULT NUMSTMT  TOTBYT 150
0042.00 0042 C          TOTBYT  DIV 256  TOTSEC 150

```

Scan determined the number of scan characters.

The starting position of SPD is 33 in statement 0036.00.

```

SCAN CHARACTERS..... SPD
STARTING POSITION.....
NUMBER OF SCAN CHARACTERS. 3
SEU-0569
033 IS THE POSITION OF THE SCAN CHARACTERS

```

Figure 6-17. Sample Displays for Scan

## **Scan and Update**

Use a combination of the enter/update or scan mode and the Scan To Update command function key to find a statement and then display the statement in the enter/update mode:

1. Press the Scan command function key to select the scan mode. (See the following note.)
2. Key a response to one or more of the scan prompts, but do not press the Enter/Rec Adv key to enter any scan response. (See the following note.)
3. Press the Scan To Update command function key.

**Note:** If you are already in the scan or enter/update mode and you want to use the same scan responses you entered last during the job, you can skip steps 1 and 2.

## Scan Command Function Keys

Figure 6-18 is a summary of SEU command function keys in the scan mode.

<b>Command Function Key</b>	<b>When Prompted with SCAN CHARACTERS, STARTING POSITION, and NUMBER OF SCAN CHARACTERS</b>
Auto Skip	Not allowed.
Scan	Repeats scan prompts. No scan is performed.
Select Format	Not allowed.
Delete	Changes mode to delete mode. No scan is performed.
Enter/Update	Changes mode to enter/update mode. No scan is performed.
Alter Print	Reverses the status of print option and print indicator.
EOJ	Displays end-of-job options.
Alter Syntax	Not allowed.
Search End Of Source	Displays last statement in member and redisplay the scan prompts and responses.
Move	Changes mode to move mode. No scan is performed.
Include	Changes mode to include mode. No scan is performed.
Accept With Error	Not allowed.
Cmd Key Display	Displays keyboard keys used as SEU command function keys and displays a brief description of each key.
Scan To Update	Alternative to the Enter/Rec Adv key. Changes to enter/update mode so that you can update the statement located by scan.
Change Roll Factor	Allows you to change the roll factor.
Alter Lines Per Stmt	Changes the number of lines reserved for the display of each statement.

Figure 6-18. Command Function Key Summary for Scan Mode

## Scan Function Control Keys

Figure 6-19 is a summary of function control keys in the scan mode.

<b>Function Control Key</b>	<b>When Prompted with SCAN CHARACTERS, STARTING POSITION, and NUMBER OF SCAN CHARACTERS</b>
Enter/Rec Adv	Indicates you have keyed at least a response to SCAN CHARACTERS or NUMBER OF SCAN CHARACTERS and you want the scan to begin.
Home	Not allowed.
Dup	Not allowed.
Roll↑	Displays next statements as determined by the roll factor, redisplay the scan prompts, and displays any responses that were entered.
Roll↓	Displays the preceding statements as determined by the roll factor, redisplay the scan prompts, and displays any responses that were entered.

**Figure 6-19. Function Control Key Summary for Scan Mode**

## SEU JOB SHEET

You may want to design an SEU job sheet to simplify SEU instructions for the operator. An example of such a sheet is shown in Figure 6-20. The example contains sample entries from the programmer.

SEU Job Sheet						
Date submitted	<u>1-31-78</u>					
Programmer	<u>LF B</u>					
Job number	<u>J 1516</u>					
SEU Command:						
SEU	<u>RPGRUN</u>	<u>R</u>				
	member name	member type	format	member name	statement length	library name
Mode:	<u>ENTER/UPDATE</u>					
Select format:	<u>C, O, P</u>					
SEU options required:	<u>AUTO SKIP, SYNTAX CHECK, PRINT, EOJ 4</u>					
Coding forms attached:	YES	<input checked="" type="radio"/> NO				
Listing attached:	<input checked="" type="radio"/> YES	NO				
Comments:						
- UPDATE calc and output specs as marked.						
- USE FROMLIBR to copy changes to a diskette.						

Figure 6-20. Sample SEU Job Sheet

# Appendix A. Display Screen Format Specifications for the Display Screen Formats Provided with SEU

To get a listing of the display screen format specifications that define the display screen formats supplied with SEU, use the LISTLIBR procedure to list the contents of the source members #SE@FORM and #SE@XTRA. The LISTLIBR procedure is described in the *System Support Reference Manual*.

So that you can relate a listing of display screen format specifications to the specification coding form, this appendix contains a listing of the display screen format specifications for the free-form format Z, and contains the specifications (excluding comments) as they would be coded on a display screen format specifications coding form.

## A Listing of Free-Form Format Z Specifications

Column Number	1	2	3	4	5	6	7	8
1.....0.....0.....0.....0.....0.....0.....0.....0.....0								
00090SZ		V 00						
00100	*****							
00110	*	FREE FORM FORMAT	'Z	'				*
00120	*****							
00130DHD1COL10	1	111Y				1		
00140DHD1COL20	1	121Y				2		
00150DHD1COL30	1	131Y				3		
00160DHD1COL40	1	141Y				4		
00170DHD1COL50	1	151Y				5		
00180DHD1COL60	1	161Y				6		
00190DHD1COL70	1	171Y				7		
00200DHD1LINE2	79	202Y					12345678901234567890123X	
00210D	45678901234567890123456789012345678901234567890123456789							
00220DDATALIN1	79	302Y	Y	Y	Y			
00230DHD2COL80	1	502Y				8		
00240DHD2COL90	1	512Y				9		
00250DHD2CL100	1	522Y				0		
00260DHD2CL110	1	532Y				1		
00270DHD2CL120	1	542Y				2		
00280DHD2LINE2	41	602Y					01234567890123456789012X	
00290D	345678901234567890							
00300DDATALIN2	41	702Y	Y	Y	Y			

Coded Free-Form Format Z Specifications



GX21-9253- U/M 060\*  
Printed in U.S.A.

System/34 Display Screen Format Specifications

Sequence Number	Form Type	Format Name	Format ID (WSU Only)	Start Line Number	Number of Lines to Clear	Lowercase	Return Input	Rt. At Keyboard (WSU Only)	Sound Alarm	Enable Function Keys	Enable Command Keys	Blink Cursor	Erase Input Fields	Override Fields	Suppress Input	Reserved	WSU Only						Reserved	Key Mask	Reserved
																	Enter Mode Sequence	Review Mode Record Identifying Indicators	Insert Mode Record Identifying Indicators						
00090	S	Z		1	00													1	2	3	1	2	3		

Sequence Number	Form Type	Field Name	Field Length	Starting Location		Output Data	Edit Code-WSU Only (J,Y)	Input Allowed	Data Type	Mandatory Fill	Mandatory Entry	Self-Check (T,E)	Adjust/Fill (Z,B,N)	Position Cursor	Enable Dup	Controlled Field Exit	Auto Record Advance	Protect Field	High Intensity	Blink Field	Nondisplay	Reverse Image	Underline	Column Separator	Reserved	Constant Type	Constant Data	Continuation	
				Line Number	Horizontal Position																								
00130	D	HD1COL10	1	1	1	Y																			1				
00140	D	HD1COL20	1	1	2	Y																				2			
00150	D	HD1COL30	1	1	3	Y																				3			
00160	D	HD1COL40	1	1	4	Y																				4			
00170	D	HD1COL50	1	1	5	Y																				5			
00180	D	HD1COL60	1	1	6	Y																				6			
00190	D	HD1COL70	1	1	7	Y																				7			
00200	D	HD1LINE2	79	2	02Y																					12345678901234567890123X			
00210	D	45678901234567890	1234567890	1	234567890	1234567890																				123456789			
00220	D	DATALINI	79	3	02Y																					8			
00230	D	HD2COL80	1	5	02Y																					9			
00240	D	HD2COL90	1	5	12Y																					0			
00250	D	HD2CL100	1	5	22Y																					1			
00260	D	HD2CL110	1	5	32Y																					2			
00270	D	HD2CL120	1	5	42Y																					3			
00280	D	HD2LINE2	41	6	02Y																					01234567890123456789012X			
00290	D	345678901234567890	1234567890	1	234567890																								
00300	D	DATALINI2	41	7	02Y																								

## Appendix B. Diagnostic Messages

If SEU detects an error in an RPG II or auto report specification, SEU displays a diagnostic message that describes the error. This appendix contains a list of all diagnostic messages issued by SEU. If an error requires more explanation than the related message gives, an explanation is included in the list with the message.

An eight-character identifier precedes each message in the list. The identifier is in the form SEU-xxxx, where xxxx is the four-digit MIC associated with the message.

When SEU displays a diagnostic message, the statement being entered or changed is redisplayed so that the operator can correct the error.

If the operator presses the Accept With Error command function key after a syntax error is found, SEU checks the syntax of the displayed statement again and writes the statement to the work file whether or not an error still exists in the statement. If the print option is on and a syntax error is present, SEU prints the statement, followed by \*\*\*. SEU also prints an asterisk (\*) beneath a field that is related to the error, and prints the MIC of the appropriate SEU diagnostic message after the asterisk so that you can find the message in this appendix.

If the print option is on but the operator corrected all syntax errors in a statement before pressing the Accept With Error command function key, SEU prints only the statement.

For detailed information about coding RPG II and auto report specifications, see the *IBM System/34 RPG II Reference Manual*, SC21-7667.

*Note:* Although the messages listed here are displayed, they are not the same as the SEU messages described in the *Displayed Messages Guide*. The messages in the *Displayed Messages Guide* are intended for operators. The messages in this appendix are intended for programmers who may have to correct errors in coded RPG II and auto report specifications.

**SEU-1001** FORM TYPE (POS 6) IS INVALID OR DOES NOT AGREE WITH THE FORMAT DESCRIPTION. POSITION 6 MUST CONTAIN H, U, F, E, L, I, C, O, OR T.

**SEU-1002** FILENAME (POS 7-14) IS INVALID OR SPECIFIED IMPROPERLY.

- SEU-1009** K DISPLAY SCREEN FORMAT USED BUT POSITION 7-12 DOES NOT CONTAIN /COPY , /SPACE, OR /EJECT; OR POSITION 7 IS A SLASH (/) AND POSITION 8-12 IS NOT SPACE OR EJECT.
- SEU-1081** THE LIBRARY NAME OR THE MEMBER NAME (POS 13-29) IS NOT SPECIFIED CORRECTLY.
- SEU-1101** FILE TYPE (POS 15) DOES NOT CONTAIN I, O, U, OR C OR IS NOT VALID FOR THE DEVICE SPECIFIED IN POSITIONS 40-46.
- SEU-1102** BLOCK LENGTH (POS 20-23) IS NOT BLANK, OR DOES NOT CONTAIN A NUMBER FROM 1 TO 9999, OR IS NOT A MULTIPLE OF THE DISK FILE RECORD LENGTH.
- SEU-1103** RECORD LENGTH (POS 24-27) DOES NOT CONTAIN A NUMBER FROM 1-4096 FOR A DISK FILE.
- SEU-1104** FILE DESIGNATION (POS 16) FOR THE FILE ASSIGNED TO THE KEYBOARD MUST BE P OR D.
- SEU-1105** FILE DESIGNATION (POS 16) MUST BE R FOR ADDRUT FILES.
- SEU-1106** MODE OF PROCESSING (POS 28) MUST BE L, R, OR BLANK.
- SEU-1107** MODE OF PROCESSING (POS 28) MUST BE BLANK FOR FILES THAT ARE NOT PRIMARY, SECONDARY, DEMAND, OR CHAINED DISK FILES.
- SEU-1108** LENGTH OF KEY FIELD (POS 29-30) INVALID OR INCORRECTLY SPECIFIED. THE ENTRY MUST BE 29 OR LESS (UNPACKED KEYS) OR 8 OR LESS (PACKED KEYS).

- SEU-1109** RECORD ADDRESS TYPE (POS 31) MUST BE A, P, I, OR BLANK.
- SEU-1110** RECORD ADDRESS TYPE (POS 31) MUST BE A BLANK FOR A NON-DISK FILE.
- SEU-1111** TYPE OF FILE ORGANIZATION (POS 32) MUST BE I FOR INDEXED FILES.
- SEU-1112** OVERFLOW INDICATOR (POS 33-34) MUST BE OA-OG, OV, OR BLANK.
- SEU-1113** KEY FIELD START LOCATION (POS 35-38) IS INVALID FOR THIS FILE TYPE OR IS BLANK; OR LENGTH OF FIELD (POS 29-30) PLUS START LOCATION EXCEEDS RECORD LENGTH.
- SEU-1114** DEVICE NAME (POS 40-46) IS INVALID. VALID NAMES ARE: DISK, PRINTER, CONSOLE, KEYBOARD, CRT, WORKSTN, SPECIAL, AND BSCA. (AMPERSAND (&)) IS VALID FOR AUTO REPORT.)
- SEU-1115** NAME OF LABEL EXIT (POS 54-59) IS NOT SUBRXX OR SRXXXX, OR DEVICE NAME IS NOT SPECIAL, OR TABLE OR ARRAY NAME NOT SPECIFIED ON CONTINUATION SPECIFICATION.
- SEU-1116** FILE ADDITION/UNORDERED (POS 66) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors was detected:

- Position 66 is not A, U, or blank (ampersand (&)) is also valid when auto report specifications are being processed).
- U is specified in position 66, but the file is not an output file.
- A nonblank entry is specified in position 66, but the file is not a disk file.

- SEU-1117** NUMBER OF EXTENTS (POS 68-69) IS NOT 01 OR BLANK, OR AN ENTRY IS SPECIFIED FOR A NON-DISK DEVICE.
- SEU-1118** FILE CONDITION (POS 71-72) MUST BE U1-U8 OR BLANK.
- SEU-1120** FILE DESIGNATION (POS 16) MUST BE P (PRIMARY), D (DEMAND), OR BLANK FOR FILES ASSIGNED TO THE KEYBOARD.
- SEU-1121** FILE DESIGNATION (POS 16) MUST BE R OR BLANK FOR ADDROUT FILES.
- SEU-1122** MODE OF PROCESSING (POS 28) IS NOT L, R, BLANK, OR AMPERSAND (&).
- SEU-1123** MODE OF PROCESSING (POS 28) IS NOT BLANK OR AMPERSAND (&) FOR A FILE THAT IS NOT A PRIMARY, SECONDARY, OR CHAINED DISK FILE.
- SEU-1124** RECORD ADDRESS TYPE (POS 31) IS NOT A, P, I, K, BLANK, OR AMPERSAND (&).
- SEU-1125** RECORD ADDRESS TYPE (POS 31) IS NOT BLANK OR AMPERSAND (&) FOR A FILE THAT IS NOT A DISK FILE.
- SEU-1126** TYPE OF FILE ORGANIZATION (POS 32) IS NOT I OR BLANK FOR AN INDEXED FILE.
- SEU-1127** OVERFLOW INDICATOR (POS 33-34) IS NOT OA-OG, OV, BLANK, OR AMPERSAND (&).
- SEU-1128** FILE CONDITION (POS 71-72) IS NOT U1-U8, BLANK, OR AMPERSAND (&).

- SEU-1129** POSITIONS 28-39 ARE NOT BLANK WHEN DEVICE (POS 40-46) IS WORKSTN.
- SEU-1130** POSITIONS 47-70 ARE NOT BLANK WHEN DEVICE (POS 40-46) IS WORKSTN.
- SEU-1132** STORAGE INDEX (POS 60-65) IS NOT 1-99 PRECEDED BY BLANKS AND/OR LEADING ZEROS WHEN LABEL EXIT (POS 54-59) IS NUM OR IND.
- SEU-1133** STORAGE INDEX (POS 60-65) IS NOT A VALID RPG NAME WHEN LABEL EXIT (POS 54-59) IS ID, INFDS, INFSR, SAVDS, OR SLN.
- SEU-1201** FROM FILENAME (POS 11-18) IS NOT SPECIFIED PROPERLY.
- SEU-1202** TO FILENAME (POS 19-26) IS SPECIFIED IMPROPERLY, OR IS SPECIFIED WITH AN EXECUTION TIME ARRAY.
- SEU-1203** TABLE OR ARRAY NAME (POS 27-32 OR 46-51) IS INVALID, SPECIFIED IMPROPERLY, OR IS BLANK AND POSITIONS 33-45 OR 52-57 DESCRIBE A TABLE/ARRAY.
- SEU-1204** NUMBER OF ENTRIES PER RECORD (POS 33-35) IS SPECIFIED IMPROPERLY, IS BLANK IN A STATEMENT WITH A FROM FILENAME, OR EXCEEDS THE NUMBER OF ENTRIES PER TABLE/ARRAY.

**SEU-1205** LENGTH OF ENTRY (POS 40-42 OR 52-54) IS INVALID OR BLANK. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

The length of the entry is either incorrect or blank. The entry must not exceed 15 for numeric entries or 256 for execution time alphameric table or array entries. For compile time alphameric table or array entries, this entry must not exceed 96. For binary table or array entries, this entry must be either 4 or 9.

**SEU-1206** DECIMAL POSITIONS (POS 44 OR 56) IS NOT BLANK OR 0-9, OR THE NUMBER ENTERED IS GREATER THAN THE VALUE FOR LENGTH OF ENTRY.

**SEU-1207** SEQUENCE ENTRY (POS 45 OR 57) MUST BE A, D, OR BLANK.

**SEU-1208** POSITIONS 27-32 AND 46-51 MUST BOTH CONTAIN TABLE NAMES OR MUST BOTH CONTAIN ARRAY NAMES.

**SEU-1209** PACKED/BINARY (POS 43 OR 55) MUST BE BLANK FOR ALPHABETIC TABLES OR ARRAYS.

**SEU-1210** NUMBER OF ENTRIES PER TABLE/ARRAY (POS 36-39) IS BLANK OR NOT SPECIFIED CORRECTLY.

**SEU-1251** FORM LENGTH (POS 15-17) IS NOT SPECIFIED CORRECTLY OR IS GREATER THAN 112, THE MAXIMUM ALLOWED.

**SEU-1252** OVERFLOW LINE (POS 20-22) IS NOT SPECIFIED CORRECTLY OR THE NUMBER SPECIFIED IS GREATER THAN THE FORM LENGTH ENTRY.

**SEU-1301** CONFIGURATION (POS 15) MUST BE P, M, S, OR BLANK.

**SEU-1302** TRANSMIT/RECEIVE (POS 16) MUST BE T OR R.

**SEU-1303** AUTOANSWER (POS 20) MUST BE M, A, B, OR BLANK.

**SEU-1305** IDENTIFICATION FOR THIS STATION (POS 33-39) IS INVALID. IF POS 32 CONTAINS AN E, POS 33-39 MUST BE AN IDENTIFICATION SEQUENCE. IF POS 32 IS S, POS 33-39 MUST BE A SYMBOLIC NAME.

**SEU-1306** IDENTIFICATION FOR REMOTE STATION (POS 41-47) IS INVALID WITH THE STATION IDENTIFICATION TYPE IN POS 40.

**SEU-1307** REMOTE TERMINAL (POS 48-51) MUST BE BLANK.

**SEU-1308** PERMANENT ERROR INDICATOR (POS 53-54) MUST BE 01-99, L1-L9, LR, H1-H9, OR BLANK.

**SEU-1309** RECORD AVAILABLE INDICATOR (POS 58-59) MUST BE 01-99, L1-L9, LR, H1-H9, OR BLANK.

**SEU-1310** LAST FILE PROCESSED (POS 60) MUST BE L OR BLANK.

**SEU-1311** POLLING CHARACTERS (POS 61-62) ARE INVALID FOR THE CODE TYPE IN POS 18 OR ARE MISSING.

**SEU-1312** ADDRESSING CHARACTERS (POS 63-64) ARE INVALID FOR THE CODE TYPE IN POS 18 OR ARE MISSING.

**SEU-1313** REMOTE DEVICE (POS 65-70) MUST BE BLANK.

- SEU-1314** TRANSPARENCY (POS 19) IS INVALID FOR AN ADAPTER USING ASCII DATA LINK CHARACTERS (POS 18).
- SEU-1315** AUTOANSWER (POS 20) MUST BE BLANK FOR A NONSWITCHED NETWORK.
- SEU-1316** POSITION 32 AND/OR POSITION 40 IS NOT BLANK FOR A NONSWITCHED NETWORK.
- SEU-1317** AUTOANSWER (POS 20) MUST NOT BE BLANK FOR A SWITCHED NETWORK.
- SEU-1401** POSITION OF RECORD IDENTIFICATION CODES (POS 21-24, 28-31, or 35-38) DOES NOT CONTAIN A NUMBER FROM 1 TO 4096.
- SEU-1402** FROM FIELD LOCATION (POS 44-47) IS GREATER THAN TO FIELD LOCATION (POS 48-51) OR ONE OF THE ENTRIES DOES NOT CONTAIN A NUMBER FROM 1 TO 9999.
- SEU-1403** FIELD NAME (POS 53-58) BEGINS WITH TAB, IS SPECIFIED INCORRECTLY, OR IS MISSING.
- SEU-1404** CONTROL LEVEL INDICATOR (POS 59-60) IS NEITHER L1-L9 NOR BLANK. (AMPERSAND (&) IS VALID FOR AUTO REPORT.)
- SEU-1405** MATCHING FIELDS (POS 61-62) IS NEITHER M1-M9 NOR BLANK. (AMPERSAND (&) IS VALID FOR AUTO REPORT.)
- SEU-1406** RECORD TYPE (POS 7-42) AND FIELD TYPE (POS 43-70) ENTRIES ARE BOTH SPECIFIED IN ONE STATEMENT.

**SEU-1407** NUMBER (POS 17) AND/OR OPTION (POS 18) IS NOT VALID WITH ALPHAMERIC SEQUENCE (POS 15-16).

**SEU-1408** DECIMAL POSITIONS (POS 52) IS NOT 0-9 OR BLANK. (AMPERSAND (&)) IS VALID FOR AUTO REPORT.)

**SEU-1410** POSITIONS 14-16 MUST NOT CONTAIN 'AND' OR 'OR' FOR A LOOK-AHEAD RECORD (\*\* IN POS 19-20).

**SEU-1411** POSITIONS 21-42 MUST BE BLANK FOR A LOOK-AHEAD SPECIFICATION (\*\* IN POS 19-20).

**SEU-1412** PLUS AND MINUS FIELD INDICATORS (POS 65-68) MUST NOT BE SPECIFIED FOR AN ALPHAMERIC FIELD.

**SEU-1413** CONTROL AND MATCH FIELDS (POS 59-62) MUST NOT BE SPECIFIED FOR BINARY FIELDS.

**SEU-1414** SEQUENCE (POS 15-16) MUST NOT BE NUMERIC FOR A LOOK-AHEAD RECORD TYPE (\*\* IN POS 19-20).

**SEU-1415** DECIMAL POSITIONS (POS 52) IS NOT 0-9 OR BLANK, IS GREATER THAN THE LENGTH OF THE FIELD, OR IS PRESENT FOR A RESULT FIELD FOR WHICH NO FIELD LENGTH IS SPECIFIED.

**SEU-1416** RECORD IDENTIFYING INDICATOR (POS 19-20) IS NOT 01-99, H1-H9, L1-L9, LR, OR \*\*

**SEU-1417** POSITIONS 71-74 MUST BE BLANK.

**SEU-1418** FIELD RECORD RELATION INDICATOR (POS 63-64) IS NOT 01-99, L1-L9, MR, U1-U8, OR H1-H9; OR FIELD INDICATORS (POS 65-70) ARE NOT 01-99 OR H1-H9. (AMPERSAND (&)) IS VALID FOR AUTO REPORT.)

**SEU-1419** OPTION (POS 18) IS NOT U OR BLANK WHEN RECORD IDENTIFYING INDICATOR (POS 19-20) IS DS.

**SEU-1420** POSITIONS 21-74 ARE NOT BLANK WHEN RECORD IDENTIFYING INDICATOR (POS 19-20) IS DS.

**SEU-1421** SEQUENCE (POS 15-17) IS NOT BLANK WHEN RECORD IDENTIFYING INDICATOR (POS 19-20) IS DS.

**SEU-1422** POSITIONS 7-43 OR POSITIONS 59-74 ARE NOT BLANK WHEN POSITIONS 44-51 IS A KEYWORD (\*OPCODE , \*RECORD , OR \*STATUS).

**SEU-1423** POSITION 44 CONTAINS AN \* BUT POSITIONS 44-51 DO NOT CONTAIN A KEYWORD (\*OPCODE , \*RECORD , OR \*STATUS).

**SEU-1501** CONTROL LEVEL (POS 7-8) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

Positions 7 and 8 must contain AN, OR, L0-L9, LR, SR, or be blank. If RLABL is specified, positions 7 and 8 must not contain either AN or OR. If BEGSR or ENDSR is specified, positions 7 and 8 must contain SR. If FORCE is specified, positions 7 and 8 must contain L0-L9 or LR.

**SEU-1502** CONDITIONING INDICATOR (POS 9-17) IS INVALID OR IS SPECIFIED WITH TAG, BEGSR, ENDSR, OR RLABL.

**SEU-1503** FACTOR 1 (POS 18-27) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors exists:

- The entry is not a valid symbolic name, array name, or literal.
- An entry was made, but factor 1 is not allowed.
- The entry is an alphameric literal, but a numeric field or literal is required.
- The entry is a numeric literal, but an alphameric field or literal is required.

**SEU-1504** OPERATION CODE (POS 28-32) IS NOT SPECIFIED CORRECTLY, OR THE OPERATION CODE AND CONDITIONING INDICATORS ARE BOTH BLANK.

**SEU-1505** FACTOR 2 (POS 33-42) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors exists:

- The entry is not a valid symbolic name, array name, or literal.
- An entry was made, but factor 2 is not allowed.
- The entry is an alphameric literal, but a numeric field or literal is required.
- The entry is a numeric literal, but an alphameric field or literal is required.
- The entry is not a valid symbolic name for the FORCE, CHAIN, READ, or DEBUG operation.
- The entry is a zero constant and is specified with the DIV operation code.
- The entry is specified with the EXIT operation code, but it does not begin with SUBR.
- The entry is a negative constant and is specified with the SQRT operation code.
- The entry is not 0-7 for mask bits for a BIT operation.

**SEU-1506** RESULT FIELD (POS 43-48) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors exists:

- The entry is not a valid symbolic name.
- An entry was made, but result field is not allowed.
- The entry is the reserved word CONTD.
- The entry is an invalid field type as determined by the field length or decimal positions assigned to it.

**SEU-1507** FIELD LENGTH (POS 49-51) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors exists:

- The entry is not specified correctly.
- The entry is greater than 15 and applies to a numeric field.
- The entry is greater than 40 and applies to a field specified with the KEY operation.
- The entry is not blank or 1 and applies to a TESTB, BITON, or BITOF operation.
- The entry is greater than 256 for an alphameric field.

**SEU-1508** RESULTING INDICATOR (POS 54-59) IS INVALID. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

One of the following errors exists:

- The entry is not a valid indicator.
- A resulting indicator is not allowed for the operation.
- Both high and low indicators are specified for a LOKUP operation.
- The entry is not a command key and applies to the SET operation.

**SEU-1509** MESSAGE IDENTIFICATION CODE (POS 31-32) IS SPECIFIED INCORRECTLY OR IS MISSING AND FACTOR ONE IS BLANK, OR NO FUNCTION IS SPECIFIED FOR THE SET OR KEY OPERATION.

**SEU-1510** DECIMAL POSITIONS (POS 52) IS NOT ZERO WHEN OPERATION (POS 28-32) IS TIME.

**SEU-1511** HALF ADJUST (POS 53) IS NOT BLANK WHEN OPERATION (POS 28-32) IS TIME.

**SEU-1512** THE ALPHAMERIC LITERAL IN FACTOR 1 (POS 18-27) IS NOT A VALID 2-CHARACTER LITERAL WHEN OPERATION (POS 28-32) IS ACQ, REL, OR NEXT.

**SEU-1513** RESULT FIELD (POS 43-48), FIELD LENGTH (POS 49-51), DECIMAL POSITIONS (POS 52), AND HALF ADJUST (POS 53) ARE NOT BLANK WHEN OPERATION (POS 28-32) IS REL OR NEXT.

**SEU-1514** RESULT FIELD (POS 43-48), FIELD LENGTH (POS 49-51), DECIMAL POSITIONS (POS 52), AND HALF ADJUST (POS 53) ARE NOT BLANK WHEN OPERATION (POS 28-32) IS ACQ.

- SEU-1515** FACTOR 1 (POS 18-27), FACTOR 2 (POS 33-42), FIELD LENGTH (POS 49-51), DECIMAL POSITIONS (POS 52), HALF ADJUST (POS 53), AND RESULTING INDICATORS (POS 56-59) ARE NOT BLANK WHEN OPERATION (POS 28-32) IS SHTDN.
- SEU-1601** LINE TYPE (POS 15) DOES NOT CONTAIN H, D, T, OR E; OR POS 14-15 DO NOT CONTAIN 'AN' OR 'OR'.
- SEU-1602** FIELD NAME (POS 32-37) IS MISSING, NOT SPECIFIED CORRECTLY, OR IS BLANK AND POSITION 38 CONTAINS AN EDIT CODE.
- SEU-1603** EDIT CODE (POS 38) IS NOT 1-4, A-D, J-M, X, Y, Z, OR BLANK; IS SPECIFIED WITH A CONSTANT; IS X, Y, OR Z USED WITH \$ OR \*; OR POS 45-47 ARE NOT \$ OR \*
- SEU-1604** BLANK AFTER (POS 39) IS NOT B OR BLANK, OR IF AUTO REPORT SPECIFICATIONS ARE BEING USED, POS 39 IS NOT A, B, C, R, 1-9, OR BLANK.
- SEU-1605** END POSITION IN OUTPUT RECORD (POS 40-43) IS SPECIFIED INCORRECTLY, IS MORE THAN 256 WITH \*PLACE, OR IS TOO SMALL WITH CONSTANT OR EDIT WORD USED.
- SEU-1606** CONSTANT OR EDIT WORD (POS 45-70) IS NOT SPECIFIED CORRECTLY OR THE LITERAL IS MISSING WHEN POS 39 OF AN AUTO REPORT SPECIFICATION IS C OR POS 40-43 IS K1-K9.
- SEU-1607** RECORD TYPE ENTRIES AND FIELD TYPE ENTRIES ARE BOTH PRESENT OR BOTH MISSING ON AN OUTPUT SPECIFICATION. (SEE SEU REFERENCE MANUAL FOR A FURTHER DESCRIPTION OF THIS ERROR.)

An output specification must contain either record description entries or field or constant entries, but not both. If auto report statements are being processed, \*AUTO may be entered as the field name entry of a record description statement.

**SEU-1608** OUTPUT INDICATOR (POS 23-31) IS INVALID, OVERFLOW INDICATOR IS SPECIFIED ON EXCEPTION OUTPUT LINE, OR AN INDICATOR OTHER THAN U1-U8 IS USED ALONG WITH 1P.

**SEU-1609** POSITIONS 23-31, 38, 39, AND 44-70 MUST BE BLANK FOR \*PLACE.

**SEU-1610** ADD IS NOT ALLOWED IN POSITION 16-18 FOR AND/OR LINES.

**SEU-1611** TOTALING (A IN POS 39) IS NOT VALID WITH A TABLE, INDEXED ARRAY, PAGE FIELD, OR A BLANK FIELD NAME ENTRY.

**SEU-1612** INDICATORS (POS 23-31) OR FIELD NAME (POS 32-37) IS NOT BLANK WHEN OUTPUT END POSITION (POS 40-43) IS K1-K8.

This glossary defines terms as they apply to the use of System/34 SEU.

**\$SFGR (display screen format generator utility program):** The SSP utility program that creates display screen formats from display screen format specifications.

**#LIBRARY (system library):** The library that contains the members that are part of the System Support program product.

**#SE@FORM:** The label of one of the two source members that contain display screen format specifications for the display screen formats provided with SEU, and the label of one of the two load members that contain the display screen formats provided with SEU. See also #SE@XTRA.

**#SE@XTRA:** The label of one of the two source members that contain display screen format specifications for the display screen formats provided with SEU, and the label of one of the two load members that contain the display screen formats provided with SEU. See also #SE@FORM.

**#SEUPRNT:** The label of the SEU printer file.

**alphameric field:** A field that contains, or can contain, one or more alphameric characters. Any character that can be entered from the keyboard is valid in an alphameric field.

**assembler instruction statement:** A statement that controls the functions of the basic assembler. Assembler instruction statements are source statements for the Basic Assembler and Macro Processor program product.

**auto report specification:** A specification for the auto report function of the RPG II program product. Auto report specifications are source statements for the RPG II program product.

**auto skip field:** A field in statements displayed by SEU that the cursor skips if the auto skip option is on. An auto skip field is defined as a conditional protect field in SEU display screen formats.

**auto skip option:** The SEU option that, if on, causes the cursor to skip all auto skip fields in statements displayed by SEU.

**Cmd key:** The function control key that, when pressed, causes System/34 to recognize the 14 keys in the top row of the keyboard as command function keys.

**COBOL statement:** A source statement for the COBOL Supplement PRPQ.

**compile-time table:** A table that is compiled with an RPG II source program. The table becomes a permanent part of the object program.

**compress:** To reduce the size of a source or procedure member before copying it from the SEU work file to a library. SEU compresses members by calling the \$MAINT SSP utility program to remove strings of duplicate characters and blanks.

**constant field:** A field that is defined by a display screen format to contain a specific value. The value is specified in the display screen format, and is displayed when the format is used to enter a new statement.

**data key:** Any key on the keyboard that is used to enter a character, blank, or digit.

**default value:** A value automatically chosen by SEU or the system when a value is not specified by the user.

**delete mode:** The SEU mode that is used to delete statements from a source or procedure member.

**diagnostic message:** An SEU message that identifies a syntax error in an RPG II or auto report specification.

**display screen format:** A table that defines a display presented on the display screen. The display screen format generator utility program (\$SFGR) generates display screen formats from display screen format specifications, and places the display screen formats in a library load member. Display screen formats for SEU control the kind of data and the format of data entered or changed by SEU jobs.

**display screen format generator utility program (\$SFGR):** The SSP utility program that creates display screen formats from display screen format specifications.

**display screen format specifications:** Specifications from which the display screen format generator utility program (\$SFGR) creates display screen formats.

**enter:** To press the Enter/Rec Adv key to cause SEU to place displayed statements into the SEU work file, or to cause SEU to act on the operator response to a prompt. See also *key*.

**enter/update mode:** The SEU mode that is used to enter new statements into a source or procedure member, or to change statements that already exist in a source or procedure member.

**extent:** A continuous space on disk or diskette that is occupied by or reserved for a particular file.

**field definition:** Entries in display screen format specifications that identify the characteristics of each field in a statement entered or updated by SEU. Characteristics identified by field definitions include position, length, and type of data. Field definitions also identify protect, auto skip (conditional protect), and constant fields.

**format headings:** The position numbers that appear in each display screen format used in the SEU enter/update mode.

**format length:** The number of statement input positions defined by an SEU display screen format.

**format member:** A load member that contains display screen formats.

**FORTTRAN IV statement:** A source statement for the FORTRAN IV program product.

**free form:** The SEU display screen formats designed for entering and updating statements, such as OCL statements and utility control statements, that do not have a constant and rigid format.

**headings:** See *format headings*.

**include library:** The library that contains the member from which the SEU include mode is to include statements.

**include member:** The source or procedure member from which the SEU include mode is to include statements.

**include mode:** The SEU mode that is used to include in one member statements from another member, or to include in one member statements from the same member if the statements already exist in a library.

**interactive:** Refers to a method of processing in which each operator action causes a response from a system or program.

**key:** To press keyboard data keys to display information on the display screen. Displayed data or responses are entered when the Enter/Rec Adv key is pressed. See also *enter*.

**machine instruction statement:** A statement that represents a machine language instruction on a one-for-one basis. Machine instruction statements are source statements for the Basic Assembler and Macro Processor program product.

**macroinstruction statement:** A statement that represents a sequence of machine and/or assembler instruction statements. Macroinstruction statements are source statements for the Basic Assembler and Macro Processor program product.

**magnetic character reader specification:** A source statement for the IBM 1255 Magnetic Character Reader subroutine (SUBR08).

**move mode:** The SEU mode that is used to move statements from one location in a member to another location in the same member.

**multiple program mode:** A method of operation that permits more than one job to be run concurrently.

**multiple requestor terminal procedure:** A procedure that calls a multiple requestor terminal program.

**multiple requestor terminal program:** A program that can process requests from more than one requesting display station concurrently.

**multiprogramming system:** A system that can operate in a multiple program mode.

**numeric field:** A field that contains, or can contain, one or more numeric characters. Valid numeric characters are the digits 0 through 9 and + (plus sign), - (minus sign), . (decimal point), blank, and , (comma).

**pad:** To fill unused positions in a field with dummy data, usually zeros or blanks.

**POS:** Position(s). POS appears in SEU diagnostic messages.

**prompt:** A message issued by a program that requests either information or an operator action to continue processing.

**protect field:** A field in statements displayed by SEU that the cursor always skips. A field is defined as a protect field by a display screen format.

**right adjust:** To shift the contents of a field so that the last character keyed is in the rightmost position of the field.

**roll factor:** The value that determines which statements are displayed if the Roll↑ (Roll Up) or Roll↓ (Roll Down) key is pressed during an SEU job. The roll factor is displayed in positions 2 and 3 of the SEU status line.

**RPG II specification:** A source statement for the RPG II program product.

**scan mode:** The SEU mode that is used to locate a statement that has a specified string of characters within the statement.

**sequence number:** A number within a statement that identifies the relative position of the statement within a series of statements.

**serial number:** Same as *sequence number*.

**serialize:** To assign sequence numbers to a series of source statements.

**SEU command:** The procedure command that runs the SEU procedure. The SEU procedure calls SEU.

**SEU work file:** A disk work area in which new statements and changes are stored during an SEU job. The statements in the work file are copied to a library at SEU end of job, unless the operator decides to cancel the job or chooses the end-of-job option that deletes the work file (end-of-job option 5).

**sign on:** For SEU, to enter the SEU command so that the operator can begin an SEU job.

**single requestor terminal procedure:** A procedure that calls a single requestor terminal program.

**single requestor terminal program:** A program that can have only one requesting display station at a time.

**sort sequence specification:** A specification that defines the kind of sort to be performed by the sort program. Sort sequence specifications are source statements for the sort program. The sort program is part of the Utilities program product.

**SSP:** System Support program product.

**statement number:** A number assigned by SEU to each statement in a source or procedure member being created or changed by an SEU job. The operator selects statements in a member by entering the statement number assigned by SEU. Statement numbers assigned by SEU are temporary. They do not become part of the statement, but last only for the duration of the SEU job.

**syntax checking option:** The SEU option that, if on, causes SEU to check for syntax errors in each RPG II and auto report specification entered or updated under control of the RPG II display screen formats provided with SEU.

**system library (#LIBRARY):** The library that contains the members that are part of the SSP.

**truncate:** To shorten a statement by reducing it to a predetermined length.

**work station utility specification:** Source statement for the work station utility generator program. The work station utility is part of the utilities program product.

**wraparound:** To press the Roll↑ (Roll Up) key to display the first statement in a source or procedure member after SEU displays the last statement in the member, or to press the Roll↓ (Roll Down) key to display the last statement in a source or procedure member after SEU displays the first statement in the member.

- \$SFGR (display screen format generator utility program) 2-42 to 2-43, C-1
- #LIBRARY (system library) 2-46, 5-2, 5-3, C-1
- #SE@FMT 5-2
- #SE@FORM
  - and library space 4-1 to 4-2
  - contents 2-52 to 2-53
  - definition C-1
  - in SEU command 5-2
  - restrictions 2-46
- #SE@XTRA
  - and library space 4-1 to 4-2
  - contents 2-52 to 2-53
  - definition C-1
  - in SEU command 5-2
  - restrictions 2-46
- #SEUPRNT 1-17, C-1
  
- A, comment format 2-20, 2-52
- Accept With Error command
  - function key 1-11, 1-17, 2-58, 4-10, B-1
  - (see also command function key summaries)
- active user library 2-46
- alphanumeric field 2-1, 2-3, C-1
- alphanumeric right-adjust field 2-1, 2-3, 2-4, 6-5
- Alter Lines Per Stmt command function key 1-8, 1-12
  - (see also command function key summaries)
- Alter Print command function key 1-8, 1-11, 1-17
  - (see also command function key summaries)
- Alter Syntax command function key 1-7, 1-11, 2-57
  - (see also command function key summaries)
- ASSEM, assembler format 1-3, 2-33, 2-52
- assembler format, ASSEM 1-3, 2-33, 2-52
- assembler instruction statement 1-3, C-1
- auto report format 1-3
  - (see also RPG II and auto report formats)
- auto report specification
  - any 1-3, C-1
  - K, copy 2-19
  - U, option 2-8
- auto report syntax restrictions 2-58
- Auto Skip command function key 1-7, 1-11, 2-2, 2-33, 4-3
  - (see also command function key summaries)
- auto skip fields
  - definition C-1
  - description 2-2
  - how to define 2-43, 2-44
  - how to enter data in 4-3
- auto skip option
  - definition C-1
  - for assembler comments 2-33
  - for constant field 2-2
  - in SEU formats 2-44
  - status line indicator 1-6, 1-7
- auto skip, protect, and constant fields 2-44
  
- boxed displays 1-10, 2-4
  
- C, calculation specification format for RPG II
  - and auto report 2-16, 2-52
- calculation specification format, C, for RPG II
  - and auto report 2-16, 2-52
- canceling an SEU job 4-3
- change a display screen format, how to 2-48, 2-49 to 2-51
- change a response after it is entered, how to 4-9 to 4-10
- Change Roll Factor command function key 1-12
  - (see also command function key summaries)
- changes to #SE@FORM and #SE@XTRA, preserving 4-2
- checking syntax of RPG II and auto report statements 2-6, 2-57 to 2-58
- Cmd function control key 1-11, C-1
  - (see also function control key summaries)
- Cmd Key Display command function key 1-12
  - (see also command function key summaries)
- COBOL, COBOL format 1-3, 2-41, 2-52
- COBOL statement 1-3, 2-41, C-1
- coded free-form format specifications A-2
- command function key summaries
  - delete mode 6-9
  - enter/update mode 6-3
  - include mode 6-19
  - move mode 6-14
  - scan mode 6-24
- command function keys
  - (see also command function key summaries)
  - Accept With Error 1-11, 1-17, 2-58, 4-10, B-1
  - Alter Lines Per Stmt 1-8, 1-12
  - Alter Print 1-8, 1-11, 1-17
  - Alter Syntax 1-7, 1-11, 2-57
  - Auto Skip 1-7, 1-11, 2-2, 2-33, 4-3
  - Change Roll Factor 1-12
  - Cmd Key Display 1-12
  - Delete 1-11
  - Enter/Update 1-11
  - EOJ 1-11, 4-3, 5-6
  - Include 1-11
  - Move 1-11

command function keys (continued)  
   overview 1-2  
   Scan 1-11  
   Scan To Update 1-12, 4-9, 6-21, 6-23  
   Search End Of Source 1-11  
   Select Format 1-11, 2-52  
 command, SEU 5-1 to 5-4, C-3  
 comments  
   for assembler programs 2-33  
   for display screen format specifications 2-37  
   for FORTRAN IV programs 2-40  
   for sort sequence specifications 2-21  
   for work station utility specifications 2-26  
   format, A 2-20  
 compile-time data 5-9, 5-10  
 compile-time table 5-9, 5-10, 5-12, C-1  
 compress 1-12 to 1-14, C-1  
 conditioned fields 2-2  
 considerations for the user  
   end of job 5-12  
   operating 4-3 to 4-10  
   programming 4-1 to 4-3  
 constant fields 2-2, 2-26, 2-43, 2-44, C-1  
 continuation statements 2-31, 2-39  
 control specification format, H, for RPG II  
   and auto report 2-7  
 copy specification format, K, for auto report 2-19  
 create a display screen format, how to 2-47  
 creating and changing SEU display  
   screen formats 2-42 to 2-51  
 cursor positioning 2-45  
 Cursor Right function control key 2-3  
   (see also function control key summaries)

data key 1-10, C-1  
 default value  
   definition C-1  
   for end-of-job display 5-11  
   for include mode prompt 6-16  
   for SEU command 5-1 to 5-3  
 Delete command function key 1-11  
   (see also command function key summaries)

delete mode  
   command function key summary 6-9  
   description 1-4, C-1  
   function control key summary 6-10  
   operating summary 6-5 to 6-10  
   prompts 6-6  
   sample displays 6-7, 6-8  
 DELETE procedure 4-3  
 diagnostic message 1-5 (Figure 1-1), 2-57 to 2-58,  
   4-10, B-1, C-1  
 disk work space 1-12 to 1-14  
 display control specification format, SFGR-S,  
   for display screen format specifications 2-38  
 display screen 1-6  
 display screen format generator utility  
   program (\$SFGR) 2-42 to 2-43, C-1

display screen format specification formats  
   description 1-3  
   SFGR-D, field definition specification 2-39, 2-52  
   SFGR-S, display control specification 2-38, 2-52  
 display screen format specifications  
   definition C-2  
   description 2-42 to 2-43, A-1 to A-2  
 display screen formats  
   creating and changing 2-42 to 2-51  
   definition 1-1, 1-3, C-2  
   description 2-1 to 2-58  
   display 1-10  
   display screen lines defined by 2-45  
   how to change 2-48, 2-49 to 2-51  
   how to create 2-47  
   location 2-52  
   name 1-7, 2-46  
   per member 2-46  
   provided with SEU 2-4 to 2-41, 2-52  
     (see also entries for specific kinds of formats)  
   restrictions 2-45 to 2-46  
   selection by SEU 2-54 to 2-56  
   selection by the operator 2-52 to 2-53, 2-56 to 2-57  
 displays, sample (see sample displays)  
 Dup function control key 4-4  
   (see also function control key summaries)  
 duplicate member names 5-12

E, file extension specification format for RPG II  
   and auto report 2-11, 2-52  
 end of job  
   command function key 1-11, 4-3  
     (see also command function key summaries)  
   considerations 5-12  
   description 5-8 to 5-12  
   for a procedure member 5-10 to 5-12  
   options 5-9 to 5-11  
   printing 1-18  
 enter C-2  
 Enter/Rec Adv function control key 4-4  
   (see also function control key summaries)  
 Enter/Update command function key 1-11  
   (see also command function key summaries)  
 enter/update mode  
   command function key summary 6-3  
   description 1-3, C-2  
   function control key summary 6-4, 6-5  
   operating summary 6-1 to 6-5  
   prompt 6-1  
   sample displays 6-2  
 EOJ command function key 1-11, 4-3  
   (see also command function key summaries)  
 error detection, syntax 2-57 to 2-58  
 error message 1-1, 2-57 to 2-58  
 error, system 1-17, 2-57 to 2-58  
 example of how to change a display  
   screen format 2-49 to 2-51  
 example of statement numbering 3-2  
 extent C-2

F, file description specification format for RPG II  
and auto report 2-9, 2-52

field

alphanumeric 2-1, 2-3, C-1  
auto skip 2-2, 2-43, 2-44, 4-3, C-1  
conditioned 2-2  
constant 2-2, 2-26, 2-43, 2-44, C-1  
numeric 2-1, 2-3, C-3  
protect 2-2, 2-43, 2-44, C-3  
right-adjust 2-1, 2-3, 2-4, 6-5

Field Advance function control key 2-3

(see also function control key summaries)

field definition specification format, SFGR-D,  
for display screen format specifications 2-39

field definitions 2-1 to 2-3, C-2

field description (input) format, J, for RPG II  
and auto report 2-15

field description (output) format, P, for RPG II  
and auto report 2-18

field exit 2-3

Field Exit function control key 2-3

field specification format, SORTF, for sort 2-25

Field+ function control key 2-3

file description continuation format, G, for RPG II  
and auto report 2-10

file description specification format, F, for RPG II  
and auto report 2-9

file extension specification format, E, for RPG II  
and auto report 2-11

file identification and control format, O, for RPG II  
and auto report 2-17

find a statement, how to 4-9

format headings 2-1, 2-4, 2-45, C-2

format length 2-56 to 2-57, C-2

format member 2-46 to 2-48, 2-52, 5-2, C-2

format member name 2-46 to 2-48, 5-2

format name 2-46

FORMAT procedure 2-51

FORTRAN FORMAT 1-3, 2-40, 2-52

FORTRAN IV statement 1-3, 2-40, C-2

free-form format, Z

description 1-3, 2-4 to 2-5, C-2

location 2-52

restriction 2-46

specifications for A-1, A-2

free-form format, Z-LOWER

description 1-3, 2-4 to 2-5, C-2

location 2-52

function control key summaries

delete mode 6-10

enter/update mode 6-4 to 6-5

include mode 6-20

move mode 6-15

scan mode 6-25

function control keys

(see also function control key summaries)

Cmd 1-11, C-1

Cursor Right 2-3

Dup 4-4

Enter/Rec Adv 4-4

function control keys (continued)

Field Advance 2-3

Field Exit 2-3

Field+ 2-3

Home 4-4

Roll Down 1-7, 4-7 to 4-8, 4-9, 4-10

Roll Up 1-7, 4-5 to 4-6, 4-9, 4-10

functions of SEU 1-3 to 1-4

G, file description continuation format for RPG II

and auto report 2-10, 2-52

glossary C-1 to C-4

H, control specification format for RPG II

and auto report 2-7, 2-52

header format, SORTH, for sort 2-22

headings (see format headings)

highlighting 1-6

Home function control key 4-4

(see also function control key summaries)

how to change a display screen format 2-48 to 2-51

how to change a response after it is entered 4-9 to 4-10

how to create a display screen format 2-47

how to delete a member 4-2

how to enter data in auto skip fields 4-3

how to find a statement 4-9

how to include from a member 4-2

how to insert more than 99 statements 3-3

how to record syntax errors 4-10

I, input specification, record identification format

for RPG II and auto report 2-14, 2-52

Include command function key 1-11

(see also command function key summaries)

include library 6-16, C-2

include member 1-4, 1-11, 6-16, C-2

include mode

command function key summary 6-19

description 1-4, C-2

function control key summary 6-20

operating summary 6-16 to 6-20

prompts 6-16

sample displays 6-17, 6-18

input fields, length of 1-7, 2-45

input specification, field description format, J,

for RPG II and auto report 2-15

input specification, record identification format, I,

for RPG II and auto report 2-14

inquiry request, system 4-3

inserting more than 99 statements 3-3  
interactive 1-1, 1-4, C-2  
introduction to SEU 1-1 to 1-18

J, input specification, field description format  
for RPG II and auto report 2-15, 2-52  
job sheet, sample SEU 6-26

K, auto report copy specification format 2-19, 2-52  
key C-2  
keyboard 1-10 to 1-12  
keyboard template 1-2  
keys (see command function keys and function control keys)

L, line counter specification format for RPG II  
and auto report 2-12, 2-52  
length  
of format 2-56 to 2-57, C-2  
of input fields 1-6, 1-7, 2-45  
of statement 2-56 to 2-57, 5-2 to 5-3  
library name 5-3  
library space 1-15 to 1-16, 4-1 to 4-2  
line counter specification format, L,  
for RPG II and auto report 2-12, 2-52  
lines defined by display screen formats 2-45  
lines per statements 1-6, 1-8, 1-12  
listing  
end of job 1-17, 5-9, 5-10  
of free-form format Z specifications A-1  
LISTLIBR procedure 2-46  
location of #SE@FORM and #SE@XTRA 2-46  
lowercase 2-4, 2-26, 2-37, 6-21

machine instruction statement C-2  
macroinstruction statement C-2  
magnetic character reader formats  
description 1-3, 2-34 to 2-36  
MICRSTCK, stacker specification 2-36, 2-52  
MICRSYS, system specification 2-35, 2-52  
magnetic character reader  
specifications 1-3, 2-34 to 2-36, C-2  
member name 5-1  
member names, duplicate 5-12  
member type 1-7, 2-53, 2-54, 5-2, 5-9, 5-10  
members that contain supplied display  
screen formats 2-52

message  
diagnostic 1-5 (Figure 1-1), 2-57 to 2-58,  
4-10; B-1, C-1  
error 1-1, 2-57 to 2-58  
regarding library space 1-16  
regarding work space 1-14  
message identification code (MIC) 1-17, 2-45, 2-58  
message source member 5-1  
MIC (message identification code) 1-17, 2-45, 2-58  
MICRSTCK, stacker specification format for  
magnetic character reader 2-36, 2-52  
MICRSYS, system specification format for  
magnetic character reader 2-35, 2-52  
mode  
delete 1-4, 6-5 to 6-10, C-1  
enter/update 1-3, 6-1 to 6-5, C-2  
include 1-4, 6-16 to 6-20, C-2  
move 1-4, 6-11 to 6-15, C-2  
multiple program 4-1, C-3  
scan 1-4, 4-9, 4-10, 6-21 to 6-25, C-3  
modifications to #SE@FORM and #SE@XTRA,  
preserving 4-2  
Move command function key 1-11  
(see also command function key summaries)  
move mode  
command function key summary 6-14  
description 1-4, C-2  
function control key summary 6-15  
operating summary 6-11 to 6-15  
prompts 6-11  
sample displays 6-12, 6-13  
multiple program mode 4-1, C-3  
multiple requestor terminal procedure 5-10, 5-11, C-3  
multiple requestor terminal program C-3  
multiprogramming 4-1, C-3  
  
name  
format member 2-46, 5-2  
library 5-3  
member 5-1  
of display screen format 1-6, 1-7, 2-46  
number of consecutive statements being processed 1-8  
number of display screen formats in a member 2-46  
number of display screen lines  
per statement 1-6, 1-8, 1-12  
number, statement 3-1 to 3-3  
(see also prompts)  
numeric field 2-1, 2-3, C-3

O, output specification, file identification and control  
format for RPG II and auto report 2-17, 2-52  
OCL statements  
entering and changing 1-3  
PRINTER 1-17  
SEU 1-17, 5-3

- operating considerations
  - (see also operating summaries)
  - function control keys 4-3 to 4-8
  - how to change a response after it is entered 4-9 to 4-10
  - how to find a statement 4-9
- operating information 1-4 to 1-5
  - (see also operating summaries)
- operating requirements 1-5
- operating summaries
  - enter/update mode 6-1 to 6-5
  - delete mode 6-5 to 6-10
  - include mode 6-16 to 6-20
  - move mode 6-11 to 6-15
  - scan mode 6-21 to 6-25
- operator selection of display
  - screen formats 2-52 to 2-53
- option
  - auto skip (see auto skip option)
  - end of job 5-9 to 5-11
  - print 1-6, 1-8, 1-17, 1-18
  - syntax checking 1-6, 1-7, 2-57 to 2-58, C-3
- output specification, field description format, P,
  - for RPG II and auto report 2-18, 2-52
- output specification, file identification and control, O,
  - for RPG II and auto report 2-17, 2-52
- output/input fields 2-45

- P, output specification, field description format for
  - RPG II and auto report 2-18, 2-52
- pad 2-3, C-3
- POS C-3
- position cursor 2-45
- print option 1-6, 1-8, 1-17, 1-18
- printer 1-17 to 1-18
- PRINTER OCL statement 1-17
- procedure member
  - as an include member 6-16
  - at SEU end of job 5-10 to 5-11, 5-12
- program data in INCLUDE statements 5-10, 5-11
- program date 1-17
- program name duplication 5-9
- programming considerations
  - canceling an SEU job 4-3
  - how to delete a member 4-2
  - how to enter data in auto skip fields 4-3
  - how to include from a member 4-2
  - library space 4-1 to 4-2
  - multiprogramming system 4-1
  - size of library member 4-2
- prompts
  - delete mode 6-6
  - description 1-1, C-3
  - enter/update mode 6-1
  - include mode 6-16
  - move mode 6-11
  - scan mode 6-21
- protect field 2-2, 2-43 to 2-44, C-3

- record backspace key 4-4
- record identification (input) format, I,
  - for RPG II and auto report 2-14, 2-52
- record type constant specification format,
  - SORTRC, for sort 2-23, 2-52
- record type field specification format, SORTRF,
  - for sort 2-24, 2-52
- recovery 5-7
- REMOVE procedure 4-2
- restrictions
  - auto report syntax 2-58
  - for creating and changing display
    - screen formats 2-45 to 2-46
- result field, WSU 2-32
- right adjust C-3
- right-adjust field 2-1, 2-3, 2-4, 6-5
- Roll Down function control key 1-7, 4-7 to 4-8, 4-9, 4-10
  - (see also function control key summaries)
- roll factor 1-6, 1-7, 4-5, 4-7, C-3
- Roll Up function control key 1-7, 4-5 to 4-6, 4-9, 4-10
  - (see also function control key summaries)
- RPG II and auto report formats
  - A, comment 2-20, 2-52
  - C, calculation specification 2-16, 2-52
  - E, file extension specification 2-11, 2-52
  - F, file description specification 2-9, 2-52
  - G, file description continuation 2-10, 2-52
  - H, control specification 2-7, 2-52
  - I, input specification, record identification 2-14, 2-52
  - introduction 1-3, 2-6
  - J, input specification, field description 2-15, 2-52
  - K, auto report copy specification 2-13, 2-52
  - L, line counter specification 2-12, 2-52
  - names of, changing 2-46
  - O, output specification, file identification
    - and control 2-17, 2-52
  - P, output specification, field description 2-18, 2-52
  - selection by SEU 2-54 to 2-56
  - T, telecommunications specification 2-13, 2-52
  - U, auto report option specification 2-8, 2-52
- RPG II specifications 1-3, 2-6 to 2-20, C-3

- sample displays
  - contents of #SE@FORM and #SE@XTRA 2-53
  - delete mode 6-7 to 6-8
  - display screen formats 1-10, 2-5 to 2-41, 2-49
  - end of job 5-8, 5-10
  - enter/update mode 6-2
  - include mode 6-17 to 6-18
  - move mode 6-12 to 6-13
  - scan mode 6-22
  - sign on 5-5 to 5-6
  - statement 1-9
  - status line 1-6
- sample SEU commands 5-4
- sample SEU job sheet 6-6
- scan and update 6-23
- Scan command function key 1-11
  - (see also command function key summaries)

## scan mode

- command function key summary 6-24
- description 1-4, C-3
- function control key summary 6-25
- operating summary 6-21 to 6-25
- prompts 6-21
- sample displays 6-22

Scan To Update command function key 1-12, 4-9, 6-21, 6-23  
(see also command function key summaries)

screen design aid (SDA) 2-42

SDA (screen design aid) 2-42

Search End Of Source command function key 1-11  
(see also command function key summaries)

Select Format command function key 1-11, 2-52  
(see also command function key summaries)

selecting display screen formats 1-11, 2-52 to 2-57

sequence number 3-1, C-3

serial number 5-9, 5-12, C-3

serial start position 5-9 to 5-10, 5-12

serialize 5-9 to 5-10, 5-12, C-3

SEU command 5-1 to 5-4

SEU functions 1-3 to 1-4

SEU job sheet, sample 6-26

SEU OCL 1-17, 5-3

SEU on a multiprogramming system 4-1

SEU operating summaries (see operating summaries)

SEU operation 1-4 to 1-5

SEU work file 1-12 to 1-14, 4-3, 5-7, 5-10, C-3  
(see also disk work space)

SEUSAVE procedure 4-2

SFGR-D, file definition specification format for display screen format specifications 2-39, 2-52

SFGR-S, display control specification format for display screen format specifications 2-38, 2-52

sign on 5-1 to 5-6, C-3

single requestor terminal procedure 5-11, C-3

single requestor terminal program 5-11, C-3

size of library member, considerations for 4-2

sort formats

- description 1-3, 2-21
- SORTF, field specification 2-25, 2-52
- SORTH, header 2-22, 2-52
- SORTRC, record type constant specification 2-23, 2-52
- SORTRF, record type field specification 2-24, 2-52

sort sequence specifications 1-3, 2-21 to 2-25, C-3

SORTF, field specification format for sort 2-25, 2-52

SORTH, header format for sort 2-22, 2-52

SORTRC, record type constant specification format for sort 2-23, 2-52

SORTRF, record type field specification format for sort 2-24, 2-52

space, library 1-15 to 1-16, 4-1 to 4-2

SSP 5-11, C-3

stacker specification format, MICRSTCK, for magnetic character reader 2-36, 2-52

start line number 2-45

statement displays 1-8 to 1-9

statement length 2-56 to 2-57, 5-2 to 5-3

statement number 3-1 to 3-3, C-3  
(see also operating summaries)

status line 1-6 to 1-8

syntax checking 2-6, 2-57 to 2-58

syntax checking option 1-6, 1-7, 2-57, C-3

syntax errors, how to record 4-10

## system error 1-17

- system inquiry request 4-3
- system library (#LIBRARY) 2-46, 5-2, 5-3, C-3
- system specification format, MICRSYS, for magnetic character reader 2-35, 2-52

T, telecommunications specification format for RPG II and auto report 2-13, 2-52

telecommunications specification format, T, for RPG II and auto report 2-13, 2-52

template, keyboard 1-2

time of day 1-17

truncate 2-57, C-3

type, member 1-7, 2-53, 2-54, 5-2, 5-9 to 5-10

U, auto report option specification format 2-8, 2-52

underscored displays 1-10, 2-4

update mode (see enter/update mode and scan and update)

uppercase 2-4, 2-26, 2-33

utility control statements, entering and changing 1-3

work file, SEU 1-12 to 1-14, 4-3, 5-7, 5-10, C-3

work space, disk 1-12 to 1-14

work station utility formats

purpose of 1-3

WSU-C 2-32, 2-52

WSU-D 2-31, 2-52

WSU-J 2-27, 2-52

WSU-M 2-29, 2-52

WSU-S 2-30, 2-52

WSU-T 2-28, 2-52

work station utility specifications 1-3, 2-26 to 2-32, C-4

wraparound 4-5, 4-7, C-4

WSU result field 2-32

WSU-C format for work station utility 2-32, 2-52

WSU-D format for work station utility 2-31, 2-52

WSU-J format for work station utility 2-27, 2-52

WSU-M format for work station utility 2-29, 2-52

WSU-S format for work station utility 2-30, 2-52

WSU-T format for work station utility 2-28, 2-52

Z-LOWER, free-form format

description 1-3, 2-4 to 2-5, C-2

location 2-52

Z, free-form format

description 1-3, 2-4 to 2-5, C-2

location 2-52

restriction 2-46

specifications for A-1, A-2





**International Business Machines Corporation**

**General Systems Division  
4111 Northside Parkway N.W.  
P.O. Box 2150  
Atlanta, Georgia 30301  
(U.S.A. only)**

**General Business Group/International  
44 South Broadway  
White Plains, New York 10601  
U.S.A.  
(International)**

IBM System/34 SEU Reference Manual (File No. S34-32) Printed in U.S.A. SC21-7657-2