

SOFTWARE ENGINEERING SERVICES

TXTFORM 1.5

Reference Manual

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1.0 INTRODUCTION

1.0 INTRODUCTION

The SES TeXT FORMatter (TXTFORM) has capabilities for conventional formatting features as well as box and table drawing and other complex functions. These capabilities, together with automatic line justification, assure the user a properly formatted document.

This document itself was produced using TXTFORM.

2.0 FEATURES OF THE FORMATTER

2.0 FEATURES OF THE FORMATTER

The following items describe in general terms some of the features available with the formatter. Detailed descriptions of these and other features can be found throughout the remainder of the document.

Language

The language follows a free form concept for the input text data. Text or formatting codes can appear in any character position of a record with the following exceptions:

The formatting code string must be preceded by an ASCII character chosen as a delimiter (by default the reverse slant, \), in character position 1 of a record. This record will contain only a formatting code string. A formatting code string consists of either a concatenated string of single letter formatting codes or a single word formatting code such as \MARGIN. The string also includes whatever parameters may be associated with a code. Any alpha character of a formatting code may be either upper or lower case.

Example: \s1T2(eol) or \SPaCE2(eol).

Formatting Codes

Formatting codes control the format of the document and the manipulation of text within that format. Codes appear as words that describe the function such as \LENGTH and \FOLIO and others are alpha characters that represent a function such as \T for tabbing and \I for indent. Some codes can be parameterized for greater flexibility.

Input - Output

Input to the formatter is a file containing variable length records. The records contain full ASCII set characters represented in NOS 6/12 Display code. Each record is terminated by a zero byte record (eol). The program prepares a formatted document file utilizing the full eight-bit ASCII character set.

2.0 FEATURES OF THE FORMATTER

Page Format

A page is composed of designation text, such as titles and folio lines, and all other formatted text, which forms the text body. The page dimensions for each of these text types are separately defined by formatting codes.

Line Spacing

Formatted lines are printed single spaced as a default selection. Spacing can be changed dynamically with the \SPACE formatting code.

Line Justification

The program justifies lines of formatted text by inserting blanks and manipulating whole words to fill the line length, producing an even right margin. The process alternates from left to right and right to left on lines of text to eliminate blocks of blank space. Non-justified text can be requested with a formatting code. The line length for non-justified text is filled with as many whole words as possible separated by one blank.

Titles and Folios

6 TITLE lines can be selected with a formatting code. Another formatting code prepares a folio line at the bottom of the page.

Headings

Seven heading levels are available that provide automatic section numbering. Seven additional levels can be selected that are not numbered. The style of the headings can be varied with a formatting code.

Section Numbering and Partial Listing

The formatter provides the capability of generating section numbers automatically. The user can also request only selected sections to be printed.

Supplemental Lists

Supplemental lists can be produced for use as tables of contents, figures and other cross-reference lists using various formatting codes.

 3.0 FORMATTING CODES

3.0 FORMATTING CODES
3.1 DESCRIPTION OF FORMATTING CODES
3.1.1 TEXT FORMATTING CODES
\A
As Is

Text subsequent to the \A code will be printed as it appears in each input record. The dimensions of the input record are described by the \RECORD formatting code. The text of each record is not justified, leading blanks are not removed and spacing blanks are not added. Text records are printed 'as-is', starting at the current margin setting, until the occurrence of the next formatting code. Truncation occurs if the text of the input record exceeds the length of the output record as described by the \LENGTH code.

\Bxx,yy,...zz
Begin Box

The box code draws a horizontal line from character position xx to zz. Vertical lines will be drawn from character positions xx,yy,...zz. If the code \B is used with no parameters, a box will be drawn using the values defined by the previous \B code. Terminated by the \E code.

\BB,xx,yy,...zz
Enlarge Box

The enlarge box code adds vertical lines in character positions xx,yy,...zz to those already begun by the \B code. Also draws a horizontal line between the outside columns of this new box. Maximum of 17 vertical lines may be active. Terminated by the \E code. 17 additional vertical lines are available with the \V and \VV codes. Terminated by the \E formatting code.

\C
Center

The text following the \C code is centered within the line length defined by the \LENGTH code. The text to be centered should occur immediately subsequent to the record containing the \C code since other intervening codes nullify the effect of the center code. To center

3.0 FORMATTING CODES

3.1.1 TEXT FORMATTING CODES

more than one line of formatted text, the \C code must precede each text record in the input file. Extraneous inter-word blanks are not removed from text to be centered.

\E

End Box

The \E code draws the bottom horizontal line of the current box and turns off the vertical lines.

\F

Begin Footnote

The text following this code becomes a footnote and is placed at the bottom of the current page. The symbol that calls out the footnote is placed by the user in the regular text stream and in the footnote text. See the Examples Section. Formatting codes occurring between the \F code and the \Z code (end footnote) will affect only the footnote text. A maximum of 10 lines per page is allowed for footnote text.

\Gaa,bb,...yy,zz

Horizontal Line

Draws a line on the current formatted text line between any given character positions (aa to bb, yy to zz). Character positions must be specified in numerically ascending pairs.

\Hnn

Heading Level Selection

nn is a level number 1 through 7 or 11 through 17 corresponding to hierarchical levels of section and paragraph control. See the Heading Level Selection Table. Text following this code is formatted according to the heading style selected and terminates at the next formatting code or end of sentence. Heading text is not justified, leading blanks are not removed and spacing blanks are not added. The number of characters in the heading text including blanks should not exceed the value defined by (\LENGTH - \MARGIN). The range of level numbers 1-7 will cause the program to generate section level numbers automatically and prefix them to the subsequent text. Levels 11-17 provide the same format as levels 1-7 but do not provide section numbers. See the section on Automatic Section Numbering. nn is also the level number referenced by

3.0 FORMATTING CODES**3.1.1 TEXT FORMATTING CODES**

the \LIST code in preparing supplemental lists that include heading text.

\Inn

Indent

The \I code causes the subsequent text to be indented nn spaces from the left margin in the formatted line, starting a new line. If nn is not specified, the last declared value of nn or the default value of nn (3) will be used. nn equal to 0 will start a new line at the left margin.

\Jnn

Hanging Indent

The text following the \J code begins at the current position in the formatted line according to other codes in effect. Hanging indentation begins at the next new formatted line. The new line and subsequent lines of formatted text will be indented nn positions from the left margin as defined by the \MARGIN code. The \J code is terminated by the next code that affects indentation. If nn is not specified, the last declared value of nn or the default value of nn(0) will be used.

\Knn

Keep

The \K code affects subsequent text until the occurrence of the release keep code (\R). An attempt is made to keep the text so bracketed from being split between pages as it is formatted. If the value nn (approximate number of lines to keep) exceeds the number of lines remaining on the page, a new page is started before printing the kept text. If nn is not specified, one line is assumed.

\L

Box Line

The \L code draws a horizontal line between the outside columns of the current box.

\M

Margin Note

An asterisk (*) is placed in the current position in the formatted text and a pointer (less than (<)) is placed in the right margin of the line.

3.0 FORMATTING CODES

3.1.1 TEXT FORMATTING CODES

\Nnnn

New Page

A new page is started before printing subsequent text. The \TITLE block will be printed before any subsequent text. If nnn is not specified, the new page number will be one greater than the previous page. If specified, the value of nnn will be used as the page number of the new page. If the page number is being automatically generated by sections, the nnn parameter will be ignored. Refer to the section on Automatic Section Numbering.

\

Null

The formatting code delimiter, when used alone, can be used to terminate codes when no other selection is appropriate.

\0

Overprint

The \0 code will cause the next two text characters appearing in the source text to be overprinted in the formatted text. The second character is the primary character and will print over the first. The two characters can be dissimilar. Overprinting to achieve a boldface appearance for a string of characters can be obtained with the \BOLD formatting code.

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 3.1.1 TEXT FORMATTING CODES

\P

Paragraph

The \P formatting code provides the capability of formatting text in a paragraph style. The first line of the formatted text will be indented and spaced according to the options in the Heading Level Selection Table. Subsequent formatted lines will begin at the current left margin. Records of text in the input file will continue to be formatted in paragraph mode until the occurrence of the next formatting code affecting format.

\Q

End Vertical Lines

All vertical lines in effect by \V and \W codes are terminated.

\R

Release Keep

Identifies the end of the text to be kept together.

\Snn

Skip

nn blank lines are printed. If nn is 0, a new line is started whenever the next text is to be printed. If nn is 0, the new line will be started according to the line spacing in effect by the current \SPACE code. If nn is not 0, the number of blank lines printed are single-spaced. If nn is not defined, the last value assigned is used, or the default value of 0 is used if nn was not previously defined.

\Tnn

\Tnn

Tab

The \Tnn codes and the \SETTAB code together provide the capability of starting text in defined character positions. These character positions are defined and given a reference number by the \SETTAB code.

The nn parameter of the \T and \SETTAB code is the reference number of the tab position. The user assigns a reference number of 1-15 to parameter nn of the \SETTAB code and specifies what character position this number should refer to. For example, if the code

 3.0 FORMATTING CODES

 3.1.1 TEXT FORMATTING CODES

\SETTAB530,740 is defined, tab position number 5 will start in character position 30 of the formatted line. Tab number 7 will start in character position 40.

Text that is to start in character position 30 would be preceded by a \T5 code. \T7 would begin subsequent text in character position 40. Tabbed text is placed in the current formatted line and does not start a new line.

If the \T code is used without a reference number, the text will start in the next character position defined as a tab stop greater than the current position.

The \.Tnn code provides for line padding using a period. Blanks spaces are filled with periods between the last character placed in the line and the character position referenced by the number nn.

The character positions of tab stops are defined relative to character position 1, not the current \MARGIN setting.

If no \SETTAB code has been defined, the default character positions of the 15 tab positions available are in increments of 5, beginning with \T1 equal to 5 through \T15 equal to 75.

\U

Untab

The \U code is used to allow a mixture of tabbed text and untabbed justified text on the same line. Untab can be used in conjunction with margin and line length changes to allow for columnar text in tables. See Examples Section.

\Vxx,yy,...zz

Vertical Lines

Vertical lines will be drawn from the character positions xx,yy,...zz. Terminated by the \Q code. A maximum of 17 vertical lines defined by the \V or \VV code may be active. This does not include the 17 vertical lines that may also be active using the box codes, \B and \Bb. If another \V code appears before a \Q code, the previous \V code will be terminated, but the current line will contain both sets of vertical lines.

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 3.1.1 TEXT FORMATTING CODES

`\VVxx,yy,...zz`

Add Vertical Lines

Vertical lines will be drawn from character positions `xx,yy,...zz`, in addition to any other vertical lines in effect. Terminated by the `\Q` code.

`\Xn`

Exception

The exception code provides a means of entering text that is not a heading into a supplemental list. The `n` parameter corresponds to the `n` parameter of the `\LIST` code. Each `\LIST` code identifies the level numbers of text to be included in that supplemental list. Exception text level numbers can be from 1 to 17. The user assigns this number according to the inclusion desired in a list.

All exception text preceded by an `\X3` code, for example, would appear in any list requested by a `\LIST` code that included a 3 in the parameter string (`\LIST3`, `\LIST1,3,4` etc.). Since heading text is also included in supplemental lists according to level number, the `\LIST3` in the above examples would produce lists that also included `\H3` heading text. Lists of exception text can be developed that do not include heading text by assigning a level number that is not being used by headings.

Exception text levels 3 - 9 and 13 - 17 are indented in a supplemental list, levels 1,2,11 and 12 are not. Exception text is also included in the current position in the text stream according to the other formatting directives in effect.

The text following the `\Xn` code, up to the next formatting code or end of sentence, will be included in a list. Exception text is not justified, leading blanks are not removed and spacing blanks are not added.

`\Z`

End Footnote

Specifies the end of footnote text.

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 3.1.2 DOCUMENT FORMATTING CODES

3.1.2 DOCUMENT FORMATTING CODES

\CHANGE,ccccccc

Change (revision) bars

The \CHANGE code indicates that the source text file is composed of records that contain a field to be used as a source identifier. This field can be a maximum of 14 character positions in length. The formatter assumes the first 7 positions as the source identifier field and ignores the trailing 7 characters which can be used for numerical sequencing.

The source identifier in the field can be 1 to 7 characters left adjusted with blank fill.

The ccccccc parameter is the base identifier against which the first 7 characters of the identifier field in each record is compared.

Formatted output lines containing text from records whose source identifier is different from the base identifier (ccccccc) will be marked by a revision bar (vertical bar). This bar appears 3 character positions to the right of the right margin as defined by the \FORMAT or \LENGTH code, whichever is the greater.

The placement of the source identifier field in each text record must begin in the character position which follows the text limit described by the \RECORD code.

Therefore, a \RECORD code must appear as the first record in the file in order to describe the location of the source identifier field. The record containing the \RECORD code must NOT contain an identifier.

For example, assume the 14 character source identifier field begins in character position 100. A \RECORD1,99 code at the beginning of the file properly identifies the text portion of the source records and the location of the source identifier field. Given a maximum record length of 136 characters, and the need to accommodate the 14 character identifier field, the maximum text portion of the record is 121 characters.

The \CHANGE code appearing in the text file with no identifiers (\CHANGE) will turn off the subsequent generation of revision bars.

For information on the automatic generation of a formatted document with revision bars, reference Section 6.1 on sequenced files and revised documents.

\CODES

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Codes/Error Listing

\CODES causes a listing to be printed at the end of the document which contains information about formatting codes used, default settings in effect and errors encountered in formatting the document. If \CODES is not used, no codes/error listing will appear.

\COMMENT

Comments in source text

The \COMMENT code allows text in the source file to be used for file documentation purposes. All records occurring between the \COMMENT code record and the next record containing a formatting code, will be ignored by the formatter.

\DATE

Date

The date, specified by the line of text following the date code, is right justified on the third line of the title block.

\FOLIO

Folio Line

The folio is the bottom line printed on each page. The text following the \FOLIO code will appear right adjusted to the right margin of the folio line. This text will appear on every page until redefined. The \FOLIO code appearing without subsequent text will effectively remove the current \FOLIO text. The \FOLIO text is terminated by the next formatting code. Since the \FOLIO line is limited to the last line of the page, text exceeding the limit of the line as defined by the \FORMAT code be truncated. Underlining is not permitted. Folio text is not justified, leading blanks are not removed, and spacing blanks are not added.

\FORMATaa,bb,nn

Format of page

\FORMAT allows the user to alter the page dimensions for designation text. Refer to the description of Page Format in the Conventions and Definitions Section. \FORMAT defines the left and right margins for \TITLE block text, \FOLIO text, supplemental lists, and sequence number placement. \FORMAT also describes the depth of the form in lines from the top of form.

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The value aa is the character position that will be used as the left margin for the above mentioned text types. The default value is 7.

The value bb establishes the right margin for the above text types. The effective line length is (bb - aa). The default value is 75.

The value nn defines the number of lines per page from the top of form. The placement of the \FOLIO line and the number of lines available for the text body for each page will be adjusted by the program, depending on the number of lines in the \TITLE and sub-title block for the current page. The default value is 60.

Only one \FORMAT code will be recognized and must occur before any formatting code that introduces text. The definition of \MARGIN and \LENGTH are unaffected by the \FORMAT statement.

\HEADcHeading Style

This code is used to select one of three standard heading sets described in the Heading Level Selection Table. c can be either A, B, or C. Each set defines the format of all headings and paragraphs defined by the \Hn and \P formatting codes. See Heading Level Selection Table.

\JUSTJustification

The default mode of the formatter is line justification to the right margin. The \JUST formatting code returns the program to this mode if the \NOJUST code has been in effect. Justification has no effect on the last line of a paragraph or on \TITLE, \FOLIO, heading, exception, centered and 'as-is' text. If justification is in effect, the program may adjust the space between any two words that are separated by one or more blanks.

\LENGTHxxxLine Length

The \LENGTH code establishes the right margin of a line of text in the text body by specifying the last character position of the formatted line. See the definition of Page Format in the Conventions and Definitions Section. xxx indicates the character

 3.0 FORMATTING CODES

 3.1.2 DOCUMENT FORMATTING CODES

position relative to character position zero, not the current left margin setting. The default last character position is 75. The maximum value of xxx is 100. If xxx is not defined, the default value of 75 will be used.

`\LISTn,n,..nn`

Supplemental Lists

The `\LIST` code provides a means of requesting supplemental lists in addition to the formatted document. An entry in a list is defined as heading text or exception text.

Heading text is introduced into the document by the heading level selection codes, `\Hnn`. Exception text is associated with the `Xn` code.

The `n,n,..nn` parameters of the `\LIST` code are level numbers that correspond directly to those used with the `\Hnn` and `\Xn` codes.

Each occurrence of a `\LIST` code will produce a separate list. Each supplemental list produced will contain the text associated with the level numbers indicated with the `\LIST` code. For example:

If the code `\LIST1,3,4,11` appears in the text file, the program will generate a supplemental list containing the text associated with all `\H1`, `\H3`, `\H4`, `\H11` and all `\X1`, `\X3`, `\X4` codes encountered in the file. If separate lists of each level of text are needed, The `\LIST` codes used would be:

```

\LIST1
\LIST3
\LIST4
\LIST11
  
```

Level 1 heading and exception text would appear in a separate list from level 3 headings and exception text.

If `\LIST` is used with no parameters, the default condition prevails and a list will be produced containing the text associated with all `\Hnn` codes appearing in the text file.

The order of entries in a list will be sequential as they occur in the text file. The order in which lists are produced will be the sequence in which the `\LIST` codes occur.

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 3.1.2 DOCUMENT FORMATTING CODES

The page number where each entry occurred in the formatted document will be printed at the right margin of the line in the list.

Indentation of entries in a list is as follows:

Level 1	Preceded by blank line, not indented
Level 2	Single spaced, not indented
Level 3	Single space, indented 2 spaces
Level 4-7	Single spaced, indented 4 spaces

Levels 11-17 correspond to levels 1-7 regarding spacing and indentation. The text line immediately following a \LIST code will be used as a title for that list. The title text terminates at the next formatting code or end of sentence. The text for the \LIST title does not have leading blanks removed and will appear centered on the page. Each supplemental list will start on a new page. The \TITLE, sub-title and \FOLIO text lines will not appear. The supplemental lists are printed subsequent to the formatted document.

All \LIST codes must precede any \Hnn and \Xn codes in the text file.

\MARGINnn

Left Margin Position

nn defines the number of blank characters in the left margin of a line in the text body. See the definition of Page Format in the Conventions and Definitions Section. The effective flowing text line is delimited by the first character position determined by \MARGIN and the last character position of a line defined by the \LENGTH code. The default \MARGIN is 10. If \MARGIN appears without a parameter, the default value will be used.

\NOJUST

Justification Off

This code turns off line justification for the remainder of the document or until a \JUST code is encountered to reinstate line justification.

\NOSEQ

Non-Sequenced Document

\NOSEQ requests the formatter to prepare the formatted document without sequence numbers appended to each

3.0 FORMATTING CODES**3.1.2 DOCUMENT FORMATTING CODES**

line. \NOSEQ is the default mode of the formatter. The \NOSEQ code terminates sequencing initiated by the \SEQ code.

\RECORDxxx,zzz

Record Length

\RECORD defines that portion of a maximum 136 character input record that will be regarded as text. xxx is the first character position. zzz is the last character position. If xxx appears alone, it will be regarded as defining the text portion of the record to be character positions 1 through xxx. The maximum value of xxx or zzz is 136. The \RECORD code must appear as the first record in the source file if it is used. The default character positions are 1 (xxx) and 136 (zzz).

\SECTIONnnn,nnn,...,nnn

Section Listing

The \SECTION code allows the user to request only specified sections to be listed. nnn refers to the major section number assigned to the text associated with an \H1 heading code. Only one \SECTION code will be recognized by the program and it must appear before the occurrence of any \H1 code. The maximum number of sections that can be requested is 32. The value of nnn is section numbers 1 through 999. Refer to the Convention section for Section Numbering and Partial Listing.

\SEQ

Sequenced Formatted Document

The \SEQ formatting code sequences the formatted document with line numbers. The number of lines to be sequenced per page is that number calculated from the depth parameter of the \FORMAT code. The sequence numbers start with 1 for each page. \TITLE and \FOLIO lines are not sequenced. The sequence number appears right adjusted to the character position that is 5 greater than the right margin character position defined by \LENGTH or \MARGIN, whichever is the greater. The \NOSEQ code returns the formatter to non-sequenced document mode which is the default mode.

\SETAPP

c-xxxxxxx

 3.0 FORMATTING CODES

 3.1.2 DOCUMENT FORMATTING CODES

Set Appendix

Appendices can be described using the \SETAPP code. The \SETAPP code is followed by a line of text in the form c-xxxxxx where c is an appendix identifier (letter, number or special character other than the current formatting code delimiter), and xxxxxx is the title (name) of the appendix.

Appendices are created like sections using the \H1-\H7 heading codes. The appendix identifier will be prefixed to the automatically generated section and page numbers.

The \SETSEC code can be used to set the number at which the appendix section is to begin. If \SETSEC is not used prior to the \SETAPP code, the appendix section number will increment from the section number currently in effect.

The title (name) of the appendix will appear as an entry in the supplemental list (if selected) prior to the entries of the appendix section and page numbers.

To change the current appendix identifier and/or title, re-define the \SETAPP code prior to the heading code (\H1) where the change is to appear.

\SETE,c

Set Formatting Code Delimiter

This code can be used to change the formatting codes delimiter from the default character, \, to (c), any full ASCII set graphic. Care should be taken in selection of the character to be used, since the appearance of the delimiter in character position 1 of any record will cause the remainder of that record to be treated as formatting codes. This can be confusing if a frequently used alphanumeric character is chosen. If (c) is omitted and the code appears as \SETE, or \SETE , the default delimiter character (\) will be restored.

\SETSECnnn

Set Section Number

\SETSEC supplies a section number (nnn) that is to be used by the automatic section numbering feature as a new base section number from which subsequent sequential section numbers are generated. nnn allows a section number from 1-999.

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\SETSEC can be used anywhere in the source file and its effect will be as follows:

If, for example, the formatter is generating text within Section 4.0 and a \SETSECnnn code is encountered, the next new section number generated will be nnn.0 rather than 5.0.

The effect of the \SETSEC code is delayed until the start of the next section. Each succeeding section will be numbered incrementally from nnn.0 for the rest of the document or until the occurrence of another \SETSEC code.

If automatic section numbering is not in effect (no \H1-\H7 codes are being used) \SETSEC is ignored.

\SETTABnnxx, nnyy, ..nnzz

Set Tabs

The character positions on a line of the formatted document can be declared as tab positions by the \SETTAB formatting codes. A maximum of 15 tab positions is allowed. Character positions are numbered from character position 1, not the current \MARGIN setting.

In the \SETTAB code, the nn parameter refers to a reference number the user assigns to a character position that is to be a tab stop. This is the number that is then used by the \Tnn formatting codes when the actual tabbing of subsequent text is to occur. The xx,yy,zz in the \SETTAB code refers to the character position in which the text is to start for that tab setting. For example, if \SETTAB120,230 is defined, the code \T1 would cause subsequent text to begin in character position 20 of the current line. Text would begin in position 35 following a \T2 code. Character positions must be designated by 2 digits, such as 29,03,09.

Tab settings remain in effect until individually redefined. In the above example, the tab position referenced by number 2 could be changed to character position 40 by defining a \SETTAB240 code. This would not disturb the setting of the tab position referenced by the number 1.

Tabbed text can then be manipulated by changing character positions in the \SETTAB codes without having to disturb the Tnn codes distributed throughout the text. If \SETTAB appears with no parameters, the default values will be assigned to the 15 tab

3.0 FORMATTING CODES

3.1.2 DOCUMENT FORMATTING CODES

positions. The defaulted values are 5 for position one and an increment of 5 for each succeeding position.

`\SPACEn`

Spacing of Lines

The default mode of the formatter is single spacing. The space code allows the inter-line spacing to be set at one (n=1) or two (n=2) lines. If n is not specified, single spacing will be set.

`\TITLEn`

Select Title

There are 6 title lines available in the title block that begins each new page. n (1-6) is a positional reference to the placement of the subsequent text of the title itself. The text of each title selected will appear in the title block on each page of the document. To change the text of a title line in the block, re-define that title and supply a new text line. If `\TITLEn` appears without subsequent text, the title line n will be removed from the title block. Title text is not justified, leading blanks are not removed and spacing blanks are not added. The number of characters in a title must be limited to the definition of title line length described by the `\FORMAT` code. If n is not specified, 1 will be used.

`\TODAY`

Today's Date

This code is used instead of the code `\DATE` whenever the current date is desired. The current date will appear in the same position in the title block as the date supplied by `\DATE` code. This is the third line of the title block.

 3.0 FORMATTING CODES

 3.1.3 UNDERLINING, BOLDFACE AND BLANK CODES

3.1.3 UNDERLINING, BOLDFACE AND BLANK CODES

`\BLANKnnn`

Blanks as Text

nnn number of blanks will be inserted as text in the current position of the document. If nnn is not specified, 1 will be used.

`\BOLD`

Boldface text

The text following the BOLD code, until the occurrence of the `\BOFF` code, will appear in boldface, achieved by overprinting each character with itself. Boldface text can also be underlined.

`\BOFF`

Boldface Text Off

The `\BOFF` code terminates the `\BOLD` code.

`\UNDER`

Underline

Characters in the formatted text following this code will be underlined. Underlining will be terminated upon the occurrence of the `\UOFF` formatting code.

`\UOFF`

Underlining Off

This code terminates underlining initiated by the `\UNDER` code.

The underline character can be input as text from a terminal when the ASCII and TERM,713 command are in effect.

In cases where the underline character itself is desired as a character representation and cannot be input directly; or where repetition of entry is undesirable, the `\BLANK` code can be used with the `\UNDER` code. For example:

```

\UNDER
\BLANK30
\UOFF
would produce _____.
```

 3.0 FORMATTING CODES

 3.1.3 UNDERLINING, BOLDFACE AND BLANK CODES

In using the \UNDER and \BOLD codes to emphasize text, a space must be provided by the user in the source text if a space is intended to appear between the emphasized text and surrounding text in the formatted line.

This requirement occurs in two unique sequences in the source text.

1. In selecting \UNDER and/or \BOLD, if the text to be emphasized is to appear as:

word begin underlining

the source sequence should be

```
word
 \under
  begin underlining
```

- * Note the space prior to the b.

2. In terminating emphasized text with \BOFF and/or \UOFF, text that is to appear as:

boldface text completed

the source sequence should be

```
boldface text
 \boff
  completed
```

- * Note the space prior to the c.

3.0 FORMATTING CODES

3.2 HEADING LEVEL SELECTION TABLE

3.2 HEADING LEVEL SELECTION TABLE

	NEW PAGE	ALL CAPS	LINES SPACED AFTER	LINES SPACED BEFORE	UNDER LINED	INDENT SPACES
\H1(\H11) SECTION LEVEL 1	X	X	5		X	
\H2(\H12) SECTION LEVEL 2						
\HEADA		X	1	2	X	
\HEADB		X	2	3	X	
\HEADC		X	1	2	X	
\H3(\H13) SECTION LEVEL 3						
\HEADA		X	1	2		
\HEADB		X	2	3		
\HEADC		X	1	2		
\H4(\H14) SECTION LEVEL 4						
\HEADA			1	1	X	
\HEADB			2	3	X	
\HEADC			1	2	X	
\H5(\H15) SECTION LEVEL 5						
\HEADA		X		1		
\HEADB		X		1	X	
\HEADC		X		1	X	
\H6(\H16) SECTION LEVEL 6						
\HEADA				1	X	
\HEADB					X	
\HEADC		X				
\H7(\H17) SECTION LEVEL 7						
\HEADC				1	X	
\P PARAGRAPH CONTROL						
\HEADA				1		3
\HEADB				1		3
\HEADC				1		5

3.0 FORMATTING CODES

3.3 SUMMARY OF FORMATTING CODES

3.3 SUMMARY OF FORMATTING CODES

The following is a short list of the Formatting Codes as they would appear in use. Those codes that expect subsequent text are so noted.

\A Text	As is
\Bxx,yy,...zz	Begin box
\BBxx,yy,...zz	Enlarge box
\C Text	Center
\E	End box
\F Text	Begin footnote
\Gxx,yy,...zz	Horizontal line
\Hnn Text	Heading level selection
\Inn Text	Indent
\Jnn Text	Hanging indent
\Knn Text	Keep
\L	Box line
\M	Margin note
\Nnnn	New page
\O	Overprint
\P Text	Paragraph
\Q	End vertical lines
\R	Release keep

3.0 FORMATTING CODES

3.3 SUMMARY OF FORMATTING CODES

\Snn	Skip
\Tnn Text	Tab
\.Tnn Text	Pad and tab
\U	Untab
\Vxx,yy,...zz	Vertical lines
\VVxx,yy,...zz	Add vertical lines
\Xn Text	Exception
\Z	End footnote
\	Null formatting code
\BLANKnnn	Insert blanks as text
\BOFF	Boldface off
\BOLD Text	Boldface
\CHANGE,cccccc	Change (revision) bars
\CODES	Codes/Error list generated
\COMMENT Text	Commented source file
\DATE Text	Date
\FOLIO Text	Folio line
\FORMATaa,bb,nn	Page form margin, length, depth
\HEADc	Heading style
\JUST	Justification on
\LENGTHxxx	Print line length of text body
\LISTn,n,..nn	Supplemental list

 3.0 FORMATTING CODES

 3.3 SUMMARY OF FORMATTING CODES

Text

\MARGINnn	Left margin of text body
\NOJUST	Justification off
\NOSEQ	Non-sequenced formatted file
\RECORDxxx,zzz	Input record field delimiters
\SECTIONnnn,nnn,,,nnn	Partial listing by section
\SETAPP c-xxxxxxx	Set Appendix
\SETE,c	Set code delimiter
\SEQ	Sequenced formatted file
\SETSECnnn	Set Section Number
\SETTABnxxx,nnyy,nnzz	Set tabs
\SPACE n	Line spacing
\TITLE n Text	Select title line
\TODAY	Today's date
\UNDER Text	Underline
\UOFF	Underlining off

4.0 CONVENTIONS AND DEFINITIONS

4.0 CONVENTIONS AND DEFINITIONS

4.1 CONVENTIONS

Page Format

The allocation of space on a page for the placement of text defines the format of a page. The formatter views a page as containing two text types:

- 1) Designation Text - Text of this type in some way identifies or describes a relationship of text from page to page. Included in this type are:

- Sequence numbers
- Date
- Page numbers

and the text associated with

- Title and sub-title block
- Folio line
- Supplemental lists.

- 2) Text body - The body is the principal text of the document, exclusive of designation text. All the formatting codes, except those relating to designation text, affect the text body.

The program places the title blocks, if present, at the top of the form and the folio line as the last line of the form. The user may adjust the placement of designation text with the FORMAT code.

Title Block Selection

In preparing the title block, the program will provide a format containing the following information:

A title block of one to six title lines, each line chosen by the user with the \TITLEn formatting code.

A sub-title block consists of 5 lines, the first is a hyphen line followed by two lines indicating the major and minor section levels of text in effect at the beginning of the current page, followed by another hyphen line and a blank line. The major section level is the current \H1 code selection in effect, the minor section is the \H2-\H7 code in effect. The sub-title block

4.0 CONVENTIONS AND DEFINITIONS

4.1 CONVENTIONS

will not appear if no \H1-\H7 codes have been used.

Current date unless \DATE code was used to select another.

Page number which is the current major section number and sequential page within that section or a numerically sequential number if no section numbering is in effect.

If less than the maximum number of title lines available is selected, those in use will be compressed to provide a compact title block. An example of the title block is:

```

                                PAGE 1-1
TITLE1 Text
                                MM/DD/YY
TITLE2 Text
-
-
TITLEn Text
-----
s.0 Heading
s.l---Heading
-----
(blank line)

```

Automatic Section numbering

Section numbering by the formatter is introduced through the use of the heading level selection codes, \H1-\H7. The text associated with these codes, together with the appropriate section number generated by the program, becomes part of the formatted text.

Automatic section numbering will be based on the occurrence of the heading selection codes, \H1-\H7.

Sections are numbered and incremented by the occurrence of H1 codes. The text lines associated with successive \H1 codes, for example, will be prefixed by the section numbers 1.0, 2.0,,,,s.0.

The first occurrence of any \H2-\H7 heading code will cause that section level number to be 1. Each subsequent occurrence will increment that level number by one. Section level numbers will return to 0 when a new section is started by the next \H1 heading code. The hierarchical sequence is as follows:

```

\H1          s.0
\H2          s.l
\H3          s.l.l
\H4          s.l.l.l

```

 4.0 CONVENTIONS AND DEFINITIONS

 4.1 CONVENTIONS

<code>\H5</code>	s.l.l.l.l
<code>\H6</code>	s.l.l.l.l.l
<code>\H7</code>	s.l.l.l.l.l.l

The range of the section number (s) and the section level numbers (l) is 1-999. It should be noted that the section level numbers should be counted as text characters when it comes to determining the length of the formatted text line.

The user may wish to arrange a document that makes use of the automatic section numbering feature but still allow portions of the text to be headed and included in supplemental lists without appended section numbers.

In the description of the heading level selection codes, `\H1-\H7`, the n value of 1-7 corresponds to the level of section number requested for the subsequent text. The appropriate section number will be determined by the program and prefixed to the heading text supplied by the user.

As seen in the Heading Level Selection Table, the `\Hnn` codes, together with the `\HEADc` code, provide a variety of format style.

In order to allow the same style headings as described for `\H1-\H7`, a subset of selection codes, `\H11-\H17` will provide the same format style as its `H1-H7` counterpart but will not be prefixed by section numbers.

If a user wishes to produce a document without any program generated section numbers, the `\H11-\H17` should be used exclusively.

Therefore, a text file that contains the `\Hnn` codes will produce a document with the following characteristics:

`\H1-\H7` codes control automatic section numbering and partial listing by section requests.

If a level number is missing from the sequence `\H2-\H7`, the section number generated for that level will be zero; i.e.; 1.1.0.1.1. indicates no `\H3` heading was selected.

If no `\H1` occurs in the text but subsequent `\H2-\H7` codes do, the entire document will be treated as Section 1.0 and the page numbers will be 1-nnn. If the `\SETSEcnnn` code has been invoked, the section number supplied is nnn.0.

The first occurrence of an `\H1` code starts the page

4.0 CONVENTIONS AND DEFINITIONS

4.1 CONVENTIONS

numbering at s-p even if \H11-\H17 headings have appeared earlier in the text. Page numbers will remain in the form s-p throughout the document, where s is the section number and p is the page within the section. Page numbering will be non-sectioned until the occurrence of the first \Hn code.

If no \H1-\H7 codes are used, no automatic section numbering takes place and no sub-title block is produced.

Partial Listing by Section

It is possible to request a listing of sections of a document rather than the entire document. The sections that are requested to be printed appear as parameters on the \SECTION formatting code. Only sections that are created through the use of \H1-\H7 heading codes or supplied by the \SETSEC code may be referenced by the \SECTION code.

The string of section numbers requested to be printed should reflect the section numbers as they will appear in the formatted document. The smallest unit of text that can be requested for a partial listing is a section. The section numbers refer to the (s) portion of the s.0 numbers that have been generated for the document by the program.

4.2 DEFINITIONS

Word

The formatter recognizes a word as a contiguous string of ASCII graphic characters.

Parameters

Those formatting codes that have optional or required parameters are designated with one of the following suffixes. The parameter notation will indicate the maximum range allowed for that parameter type. For example, an nn parameter implies that the value of the parameter could be 1 through 99. A character position parameter of aa would accept positions 1 through 99. Codes that require leading zeros on numeric parameters less than 10 will specify this in the code description. These parameter notations are defined as follows:

aa,bb,xx,yy,zz

xxx,yyy,zzz

Indicates numeric character positions.

n

A numeric count of character positions or number of lines, or a designation

 4.0 CONVENTIONS AND DEFINITIONS

 4.2 DEFINITIONS

of type such as heading selection. n has a value of 1-9. nn would represent 1-99, nnn is 1-999.

c An ASCII character is requested as a parameter.

text In some cases, text can be considered a parameter as in the heading and date selection codes.

End of sentence

An end of sentence is defined as a period followed by one or more blanks; also when a period, exclamation point or question mark is followed immediately by one or more close parenthesis and/or quote and then a space. The program will format a minimum of 2 blanks between sentences. Other blanks may be inserted during the justification process.

Error Messages

The program produces the following error messages which are appended to the formatted file.

The page and line number where the error occurred will appear on the same line as the message.

Column xxx overlaid

User requested more than one character placed in a character position by some means other than overprinting.

Line overflowed

Formatting codes in effect produced a formatted text line longer than the specified line limit.

Box append but no previous box code

A \BB code was encountered without having a B code preceding it to define the original size of the box.

SETTAB error

Faulty tab setting parameter.

Word count error

Message generated when the justification

 4.0 CONVENTIONS AND DEFINITIONS

 4.2 DEFINITIONS

process goes awry.

Unrecognized formatting code

The character string following the formatting code delimiter is not valid.

In the case of parameters that exceed the designated value limitations, the program will substitute the last correct value set for that code.

Defaults

The following selection of page dimensions will be considered the default conditions. These are assembly-time values of the SES Text Formatter program, TXTFORM.

\MARGIN	10
\LENGTH	75
	effective line length (\LENGTH-\MARGIN)
\RECORD	Character positions 1-136 of input record
\SPACE	Single spacing
\JUST	Justification on
\HEAD	Style A
\NOSEQ	Non-Sequenced document
\FORMAT	Page form margin 7, length 75, depth 60
\TODAY	Today's date
\SETTAB	105,210,315,420,525,630,735,840,945, 1050,1155,1260,1365,1470,1575

 5.0 EXAMPLES

 5.0 EXAMPLES
Columnar Text

COLUMNS	It is possible to produce columnar text with the tabbing, margin and length codes. Since flowing text begins at the margin and is justified as to length, a column can be defined with these codes.
EXAMPLE	<pre> \Margin30 \Length60 producing a twenty character wide column. The box dimensions are 15, 28, 65. By defining a tab setting, a label or other text can be offset from this column. </pre>
LABEL	
By switching the column assignments, the fields can be reversed. Margin is now 17, length is 36 and the box dimensions are set at at 15,40, and 65. The box is completed with the \e code.	EXAMPLE

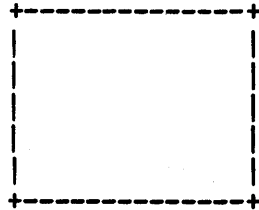
 5.0 EXAMPLES

Boxes and Lines

Another example of the use of box and line codes demonstrates the ability to produce flow diagram-type figures.

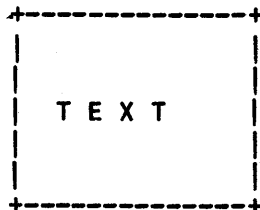
The first sequence of codes produced the ensuing box.

```
\b30,45
\s5
\l
```



To insert text in the box, the sequence becomes:

```
\b30,45
\s2
\i17      Margin was set at 15 (tabbing could also be used)
T E X T
\s2
\l
```



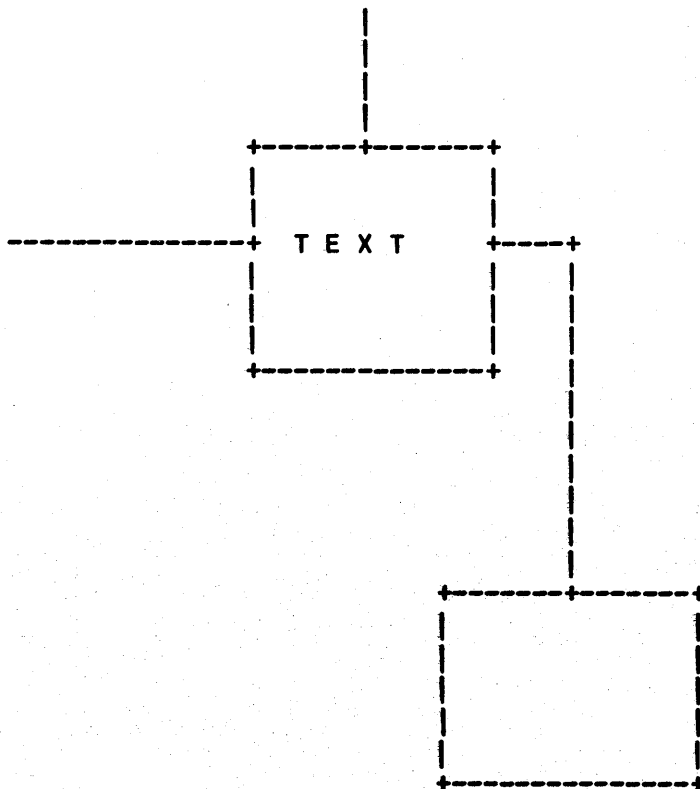
 5.0 EXAMPLES

To add connecting lines, the horizontal and vertical line drawing codes can be used:

```

\v37
\s4
\q          end this vertical piece
\b30,45
\s2
\I17
TEXT
\g15,30,45,50  start horizontal
\v50          start vertical
\s3
\l
\s6
\Q
\b42,58
\s5
\l
  
```

The figure produced is:



 5.0 EXAMPLES

Tabular Items

To produce a table of items, the tabbing features can be used. In the following example, the tabs are set:

```
\settab720,828,950,1060
```

By using the \T and the \.T codes with the appropriate tab setting number a table is produced. An example of one line of the list would be:

```
\t7
One
\t8
Pool table
\.t9
> green
```

```
.....
One      Pool Table .....> green
Ten      Cues .....> numbered
Rack     Balls .....> colored
.....
```

The code \.t10 produced the dotted lines.

5.0 EXAMPLES

Footnotes

The footnote feature allows references from within a portion of text to post-script text at the bottom of the page. It is important to remember that the calling out of the footnote text must occur at the position in the text stream that the footnote symbol appears. This is the only way the program can assure that the footnote text will appear on the same page as the reference symbol.

The footnote appearing on this page and the text containing the reference to it was input as follows:

```
\p
Saint-Exupery on human relations: 'We forget that there is no
hope of joy except in human relations,' ***
\F
*** Also; 'Happiness! It is useless to seek it elsewhere than in
this warmth of human relations. Our sordid interests imprison us
within their walls. Only a comrade can grasp us by the hand and
haul us free.'
\z
from the book 'Wind, Sand and Stars'.
```

As it would, then, appear in the document:

Saint-Exupery on human relations: 'We forget that there is no hope of joy except in human relations,' *** from the book 'Wind, Sand and Stars'.

```
*** Also; 'Happiness! It is useless to seek it elsewhere than in
this warmth of human relations. Our sordid interests imprison us
within their walls. Only a comrade can grasp us by the hand and
haul us free.'
```

5.0 EXAMPLES

Insertion of blanks as text

The formatter ignores extraneous blanks in the text stream. Therefore, it becomes necessary to use other means to introduce more than one blank into the formatted text.

This can be done in several ways:

- 1) The \A code, as-is, does not interpret the text it references but rather allows the user to place the text data in the input record in the format desired for that print line. Blanks, therefore, are not ignored but printed as encountered.
- 2) The \BLANKnnn code requests the formatter to insert nnn blanks into the current position in the formatted text.
- 3) The following codes will not have extraneous blanks removed from the associated text; therefore blanks will be considered as part of the text:

- \LIST
- \FOLIO
- \TITLE
- \X (exception)
- \H (heading)
- \C (centered text)

Table of Contents

A table of contents can be produced by using the \LIST code. (See the definition of \LIST). The text following the \LIST code can be 'Table of Contents' or any descriptive statement. The list produced will be printed following the document. Each supplemental list requested will be numbered consecutively by page 1, 2,,n.

6.0 USING THE FORMATTER UNDER NOS

6.0 USING THE FORMATTER UNDER NOS

The source file of text and formatting codes is created under NOS in ASCII mode.

Conversion programs are available that will convert the formatter ASCII output file to a NOS 6/12 file for display on a terminal or printing.

These conversions are available with the UTL utility described in the SES Users Handbook.

A formatted document can be obtained by using the utilities and NOS commands described in the SES Text Formatter material in the SES Users Handbook.

6.1 SEQUENCED SOURCE FILES AND REVISED DOCUMENTS

The facility also provides for the generation of a document with revision bars. Two source files must be provided; a base file containing the original (base) text and a change file which contains the original text edited with the desired changes. The files are compared and a revision file is generated that contains the appropriate source file identifiers. The necessary \RECORD and \CHANGE codes are inserted in the revision file and a formatted document is produced with revision bars marking the changed text. This feature is described in the Utilities section of the SES Users Handbook.

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