6

FSLETTER Procedure Windows

Overview

The process of producing a document with the FSLETTER procedure involves the following steps:

1 *Selecting catalog entries.*

The FSLETTER procedure provides two ways to choose which catalog entry to create or edit:

□ You can specify a complete catalog entry name in the LETTER= option of the PROC FSLETTER statement or in the FSLETTER command. In this case, the FSLETTER window is opened for creating or editing the specified entry.

□ You can specify only a catalog name in the LETTER= option of the PROC FSLETTER statement or in the FSLETTER command. In this case, an Explorer window is opened. From this window you can view the current entries in the specified catalog, select entries to browse or edit, or create new entries. You can also print existing documents from the Explorer window.

2 *Creating and editing documents.*

Documents are created and edited in the FSLETTER window. This window uses the SAS text editor, which provides a variety of commands and features that simplify the process of entering and editing the text of your document.

You can define fields in your document that enable you to enter information that changes from one copy of the document to the next. Fields are filled when the document is printed.

3 *Assigning field attributes.*

If you include fields in your document, you can open the FSLETTER ATTR window from the FSLETTER window to define the attributes of any fields in the document. Field attributes control whether field values are given special handling when the document is printed.

4 *Printing documents.*

Documents are prepared for printing in the FSLETTER SEND window. In this window you fill any fields in the document and make final editing changes before sending the document to a printer or to an external file.

Note: The process is different if you use the DATA= option in the PROC FSLETTER statement. In that case, the procedure is not interactive; it prints a copy of the document for each observation in the specified data set without opening any windows. Unless you use a WHERE statement in conjunction with the PROC FSLETTER statement, a copy is produced for every observation in the data set. The FSLETTER procedure ignores the FIRSTOBS= and OBS= system options. △

You can also create FORM entries and EDPARMS (editor parameter) entries with the FSLETTER procedure. The process of creating these entries involves the first two of the steps listed above, except that these entry types use their own special windows rather than the FSLETTER window:

☐ FORM entries are created and modified in the FORM window.

☐ EDPARMS entries are created and modified in the EDPARMS window.

The following sections describe the various FSLETTER procedure windows and the commands that are valid in each.

Selecting Catalog Entries

You can select the entry to create or edit by specifying a catalog entry name with the catalog name in the LETTER= option of the PROC FSLETTER statement or in the FSLETTER command. In that case, the initial window in the FSLETTER session is the appropriate window for the type of entry (FSLETTER, FORM, or EDPARMS).

If you specify only a catalog name when you invoke the FSLETTER procedure, then the initial window in the FSLETTER session is an Explorer window. The Explorer window enables you to manipulate catalog entries in various ways. You can create new entries or display existing entries for editing, browsing, or printing. You can also rename, delete, and copy entries.

Display 6.1 on page 73 shows an Explorer window for a catalog that contains LETTER, FORM, and EDPARMS entries.

Display 6.1 Typical FSLETTER Catalog Displayed in the Explorer Window
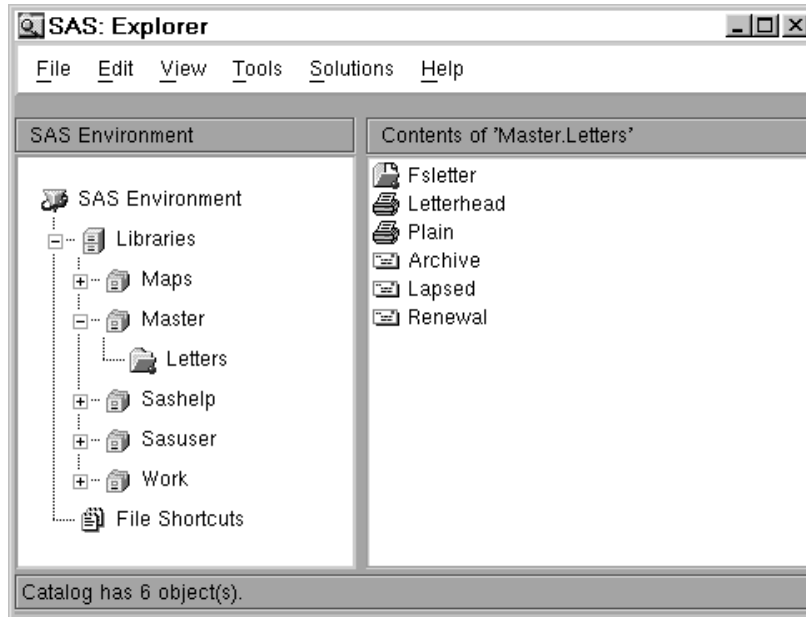
You can select an existing entry for editing by double-clicking on the corresponding item in the Explorer window, or by using the TAB or cursor keys to select the desired entry and then pressing ENTER. To create a new entry, issue the NEWOBJ command or select

| File | ▶ | New |

Select the desired entry type from the resulting list, then specify a name for the new entry.

For more information about using the Explorer window, refer to the online Help for base SAS software.

Creating and Editing Documents

Documents are entered or edited in the FSLETTER window. FSLETTER windows can be opened for editing in the following ways:

□ by specifying the name of a LETTER entry in the LETTER= argument of the PROC FSLETTER statement or in the FSLETTER command

□ by selecting an existing LETTER entry or creating a new LETTER entry in the Explorer window

□ by issuing an EDIT command in another FSLETTER window

□ by issuing an EDIT command in an FSBROWSE or FSEDIT window.

If the LETTER entry that you specify when you open the FSLETTER window is not in the current catalog, an empty FSLETTER window is opened for entering text. If the specified entry already exists, it is displayed for editing. All text in the FSLETTER window is unprotected. Using editing keys and commands, you can write new documents and edit existing documents.

The FSLETTER window uses the SAS text editor, so all the standard text editor commands are available. See the online Help for base SAS software if you need an

introduction to the features of the SAS text editor. You can customize many features of the text editor to suit your own tastes and needs. Refer to "Setting Text Editor Parameters" on page 87 for a discussion of the features that you can control.

Choosing a Form

When you create a new document, you should choose a form to associate with it. *Forms* are SAS catalog entries of type FORM that contain instructions for formatting the text in your document when it is printed. In addition, the line length specified in the form determines the width of the text entry area in the FSLETTER window.

Newly created documents are assigned the default form FSLETTER.FORM. You can change the form assignment by using the FORM command in the FSLETTER window. When you change the form assignment, the procedure first looks for the new form in the current catalog (the catalog in which the current document resides). If the specified entry is not there, the procedure looks in your personal PROFILE catalog (SASUSER.PROFILE, or WORK.PROFILE if the SASUSER library is not allocated). If the specified entry is not there, the procedure looks last in the SASHELP.FSP system catalog. If the specified entry still is not found, an error message is returned, and the current form assignment is not changed.

Defining Fields

The FSLETTER procedure enables you to define *fields* in your documents. Fields are areas in which values can change for each copy of a document. A field appears in the text of a document as an ampersand (&) followed by a valid SAS name.

The length of each field in your document should be equal to the largest number of characters expected for that value. The field length is determined by the number of characters in the field name (including the ampersand). To extend a field, you can follow the field name with a series of underscores (_). The underscores increase the field length, but they are not part of the field name.

You can use the automatic variables &DATE and &DATE7 as fields in FSLETTER documents. These variables provide the current date when the document is printed. Because the variable names already begin with an ampersand, the field names should begin with two ampersands (`&&DATE` and `&&DATE7`). The variables provide the current date in WORDDATE. and DATE7. formats, respectively. If you use `&&DATE`, add underscores to extend the field to 18 characters (the maximum possible length for date values in the WORDDATE. format).

Display 6.2 on page 75 shows a portion of a document displayed in the FSLETTER window. This portion of the document contains six different fields; `FULLNAME` appears twice.

Display 6.2   FSLETTER Document Containing Fields
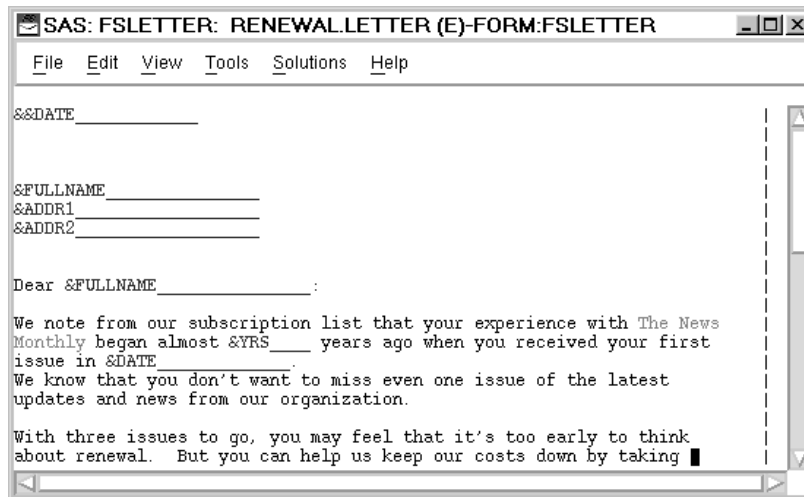
You define fields in the FSLETTER window, but you do not supply values for the fields until you print the document from the FSLETTER SEND window. See "Printing Documents" on page 86 for details. The FSLETTER procedure can also fill the fields automatically, using values from observations in a SAS data set. See "Step 1: Filling Fields" on page 86 for details.

Using Color and Highlighting Attributes

If your terminal or workstation supports color and highlighting, then you can change the color and highlighting of characters as you type (or overtype) them. Use the global COLOR TEXT command to change the color and highlighting attributes of the text that you enter. For example, the following command changes all the text you type after the command is issued to reverse-video magenta:

```
color text magenta reverse
```

Once you enter a COLOR TEXT command, the specified attributes are used until you change them with another COLOR command. Refer to the description of the COLOR command in the online Help for base SAS software for additional details.

Note: Some terminals or workstations provide special keys that control text color and highlighting. If your device has such keys, you can use them to set color and highlighting attributes as you enter the text. △

The color and highlighting attributes are stored with the document; therefore, they remain in effect the next time the document is displayed.

You can use color and highlighting in FSLETTER documents

□ to enhance displayed text.

You can change the default text color and highlighting attributes to change the appearance of the document in the FSLETTER and FSLETTER SEND windows. For example, you can use a different color or highlighting attribute for the fields in the document so that they stand out more clearly when the text is displayed in the FSLETTER SEND window for data entry.

□ to signal printing instructions.

The form that is associated with the document may interpret certain colors or highlighting (or combinations of color and highlighting) as signals to use a

particular printer feature when the document is printed. For example, the form can interpret the combination of red and reverse video as a signal that text with those attributes should be underlined or italic when printed.

You can edit the FORM entry to select which attributes signal printing instructions for your documents. For details about how the color and highlighting attributes that signal printing instructions are defined in the FORM entry, see the discussion of the FORM window in the online Help for base SAS software.

You can use the global FONT command in the FSLETTER window to check which color and highlighting attributes are defined as printing instructions for the current form.

FSLETTER Window Commands

In addition to the SAS text editor commands that are described in the online Help for base SAS software and the global commands described in Chapter 9, "SAS/FSP Software Global Commands," on page 141, you can use the following commands when editing a document in the FSLETTER window:

Managing LETTER entries

> ATTR
>
> COPY *< libref.catalog-name>entry-name<.LETTER>*
>
> DES *description*
>
> EDPARMS
>
> FORM *form-name*
>
> SAVE *letter-name*
>
> SEND <ALL> <DATA=*data-set*<(*data-set-options*)>>
> <FILE=*fileref* | '*actual-filename*'<APPEND | REPLACE>>

Opening Additional Windows

> BROWSE *letter-name*<.LETTER> | *form-name*.FORM | FSLETTER.EDPARMS
>
> EDIT *letter-name*<.LETTER> | *form-name*.FORM | FSLETTER.EDPARMS

Closing the Window

> CANCEL
>
> END

Managing Data Sets

> CLOSE
>
> DATA *< data-set<(data-set-options)>>*
>
> WHERE <<ALSO> *expression*> | <UNDO | CLEAR>

Command Descriptions

Here are descriptions of the FSLETTER window commands:

ATTR
> opens the FSLETTER ATTR window, in which the field attributes for the current document can be viewed or modified.
>
> Assigning an attribute to a field tells the FSLETTER procedure to take certain actions when it encounters the field in the FSLETTER SEND window. See "Assigning Field Attributes" on page 80 for more information.

BROWSE *letter-name*<.LETTER> | *form-name*.FORM | FSLETTER.EDPARMS
opens an additional window for browsing the specified entry:
- □ If the entry type is LETTER, or if no entry type is specified, another FSLETTER window is opened for browsing the specified document.
- □ If the entry type is FORM, a FORM window is opened for browsing the specified form. For information on using the FORM window, see the online Help for base SAS software.
- □ If the entry is FSLETTER.EDPARMS, an EDPARMS window is opened for browsing the default editor parameter file. For information on using the EDPARMS window, see "Setting Text Editor Parameters" on page 87.

An error occurs if you specify an entry type that is not supported by the FSLETTER procedure.

The new window that is opened by the BROWSE command becomes the active window. You can use the SWAP command to move between the windows that have been opened in the current FSLETTER session. Use the END command to close the new window and return to the previous window.

CANCEL
cancels all changes that have been made to the current document since the FSLETTER window was opened (or since the last SAVE command), closes the current FSLETTER window, and returns you to the window from which the FSLETTER window was opened.

CLOSE
closes the data set that was opened with the DATA command. After the data set is closed, the FSLETTER procedure no longer uses it to fill fields during printing.

COPY <*libref.catalog-name*>*entry-name*<.LETTER>
copies the specified LETTER entry into the current document. You can use text editor line-target commands (A or B, for after or before) to copy the document at a specific position within the current text. Otherwise, the copied document is appended to the end of the current document.

If the document being copied uses a different form than the current document, the document being copied is flowed (if necessary), using the line length information in the current document's form.

DATA <*data-set*<(*data-set-options*)>>
opens the specified SAS data set for filling fields in documents.

While the data set is open, any fields in a document whose names or aliases match variable names in the specified data set are filled automatically from observations in the data set when the document is printed.

You can add a list of data set options following the data set name. The list must be enclosed in parentheses. The following data set options are valid with the DATA command:

DROP	RENAME
KEEP	WHERE

Refer to *SAS Language Reference: Dictionary* for descriptions of these data set options.

Use the CLOSE command to close the data set that was opened with the DATA command if you no longer want fields to be filled from the data set.

DES *description*
assigns a description of up to 40 characters to a document. The description does not need to be enclosed in quotes. The description is displayed with the name of the document when you select the Details view in the Explorer window.

EDIT *letter-name*<.LETTER> | *form-name*.FORM | FSLETTER.EDPARMS
opens an additional window for creating or editing the specified entry:

- □ If the entry type is LETTER, or if no entry type is specified, an FSLETTER window is opened for editing the specified document. If the specified entry does not exist, the FSLETTER window is initially blank. The entry is not created until you enter text and save the document or close the FSLETTER window. (No entry is created when you close a blank FSLETTER window.)

- □ If the entry type is FORM, a FORM window is opened for creating or editing the specified form. For information on using the FORM window, see the online Help for base SAS software.

- □ If the entry is FSLETTER.EDPARMS, an EDPARMS window is opened for creating or editing the default editor parameter file. For information on using the EDPARMS window, see "Setting Text Editor Parameters" on page 87.

    Note: The parameter settings in the FSLETTER.EDPARMS entry do not affect the current document. The FSLETTER.EDPARMS entry determines the initial parameters for newly created documents. Use the EDPARMS command to change parameter settings for the current document. △

An error occurs if you specify an entry type that the FSLETTER procedure does not support.

The new window that is opened by the EDIT command becomes the active window. You can use the SWAP command to move between the windows that have been opened in the current FSLETTER session. Use the END command to close the new window and return to the previous window.

EDPARMS
opens an EDPARMS window and displays the text editor parameter settings for the current document. Any changes that you make take effect when the EDPARMS window is closed. The parameter settings are stored in the LETTER entry and remain in effect the next time you edit this document.

See "Setting Text Editor Parameters" on page 87 for more information on using the EDPARMS window.

Note: Changes made in the EDPARMS window that is opened by the EDPARMS command do not affect the default parameter settings in the FSLETTER.EDPARMS entry for the catalog. △

END
saves the currently displayed document, closes the FSLETTER window, and returns you to the window from which the FSLETTER window was opened.

FORM *form-name*
changes the FORM entry that is assigned to a document. The form name is recorded in the LETTER entry.

When you specify a new form name, the FSLETTER procedure looks first for a FORM entry that has the specified name in the current catalog (the catalog that was opened when the procedure was initiated). If the form is not there, the procedure looks for it in your personal PROFILE catalog (SASUSER.PROFILE, or WORK.PROFILE if the SASUSER library is not allocated). If the form is not there, the procedure looks for it in the SASHELP.FSP system catalog. If the form still is not found, the procedure returns an error message, and the current form assignment is not changed.

If the new form specifies a different line width than the current form uses, a requestor window appears asking whether you want the document to be flowed to the new line width. Respond with a Y to flow the text or with an N to wrap the text. If you choose N, lines of text are split if the new line length is smaller, or blanks are added to pad the lines if the new line length is larger.

SAVE *<letter-name>*
> stores the current version of the document in the catalog, leaving the document displayed for further editing. If you do not specify a name for the entry, the text is saved under its original name in the catalog. Specify a different name to store the current document under another name in the catalog.
>
> It is wise to issue SAVE commands occasionally while entering text to avoid losing work due to interruptions in computing services. Any document that has been modified is automatically saved when you use the END or SEND commands.

SEND <ALL> <DATA=*data-set*<(*data-set-options*)>>
<FILE=*fileref* | '*actual-filename*' <APPEND | REPLACE>>
> closes the FSLETTER window and prints the current LETTER entry. By default, the SEND command opens the FSLETTER SEND window, in which you can fill in fields and make final editing changes before the document is printed.
>
> If a SAS data set is currently open, any fields in the document whose names or aliases match variable names in the open data set are filled automatically with values from the data set. If the data set was opened with a DATA command, the field values come from the first observation in the data set. If the data set is open because the FSLETTER window was opened by an EDIT command in an FSBROWSE or FSEDIT session, then the field values come from the observation that was displayed in the FSBROWSE or FSEDIT window when the EDIT command was issued.
>
> If you include the ALL argument with the SEND command, a copy of the document is produced for every observation in the open data set (or for every observation that satisfies the WHERE condition, if a WHERE command has been issued). When you use the ALL option, the FSLETTER SEND window is not opened.
>
> > *Note:*   The ALL argument is valid only when a data set is currently open. △
> > You can also use the DATA= option in the SEND command to produce a copy of the document for each observation in a specified data set. The DATA= option is useful in the following circumstances:
>
> > ☐ when you want to produce copies of an individual document without using the DATA command to open a data set for the FSLETTER session.
>
> > ☐ when you want to produce copies of an individual document for a data set other than the data set that is currently open. (The DATA= option has no effect on any other data set that may currently be open.)
>
> Because the DATA= option produces a copy of the document for each observation in the data set, it is not necessary to use the ALL option with the DATA= option. When you use the DATA= option, the FSLETTER SEND window is not opened.
>
> You can add a list of data set options following the data set name in the DATA= argument. The list must be enclosed in parentheses. The following data set options are valid with the DATA= option:

DROP	RENAME
KEEP	WHERE

> Refer to *SAS Language Reference: Dictionary* for descriptions of these data set options.
>
> Unless you issue a PRTFILE command or use the PRINTFILE= option in the PROC FSLETTER (or PROC FSBROWSE or PROC FSEDIT) statement that initiates the session, output is sent to the destination that is specified in the form associated with the document. To route output to an external file instead, use the

FILE= option in the SEND command. The FILE= option is useful in the following situations:

☐ when you want to send an individual document to an external file while leaving the printer as the default output destination

☐ when you want to send an individual document to an external file other than the currently designated print file.

To identify the external file, you can use either a fileref or its actual filename. If you use a fileref, you must have previously assigned the fileref to the external file with a FILENAME statement. If you use an actual filename, enclose it in quotes.

By default, each new document that is sent to the file replaces any text that was previously in the file. (If you use the ALL or DATA= options to produce copies of a document for observations in a SAS data set, all copies are sent to the same file.) To append the output from the current SEND command to the existing text instead of overwriting the text, add the APPEND option to the SEND command. The REPLACE option specifies the default behavior.

WHERE <<ALSO> *expression*> | <UNDO | CLEAR>
   imposes one or more sets of conditions that observations in the data set must meet in order to fill fields in printed documents. *Expression* is any valid WHERE expression that includes one or more of the variables in the input data set. (Refer to the description of the WHERE statement in *SAS Language Reference: Dictionary* for details about the operators and operands that are valid in WHERE expressions.) No documents are created for observations that do not satisfy the specified conditions.

   Note: The WHERE command is valid only when a data set is open for the FSLETTER session. △
   The complete set of conditions imposed by the WHERE command is called a temporary WHERE clause. The conditions can be modified or canceled during the FSLETTER session.
   The WHERE command has the following forms:

   WHERE *expression*
      applies the conditions specified in *expression* as the new temporary WHERE clause, replacing any clause that was previously in effect.

   WHERE ALSO *expression*
      adds the conditions specified in *expression* to the existing temporary WHERE clause.

   WHERE UNDO
      removes the most recently added set of conditions from the temporary WHERE clause.

   WHERE
   WHERE CLEAR
      cancels the current temporary WHERE clause.
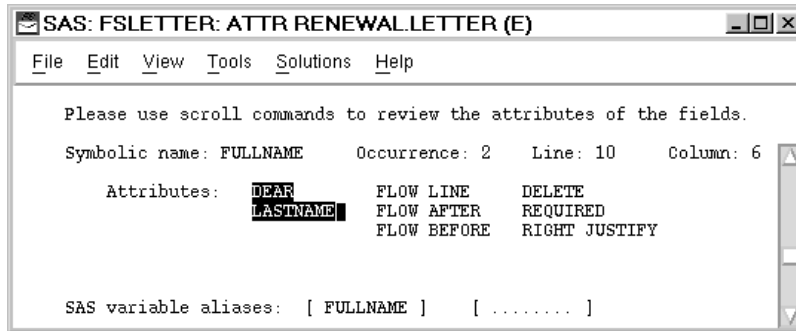
Assigning Field Attributes

After entering the document text and defining variable fields, you can use the FSLETTER ATTR window to assign attributes to each field. Use the ATTR command in the FSLETTER window to open the FSLETTER ATTR window. Although you assign field attributes while editing the document, the attributes do not take effect until the second step of the printing process.

The FSLETTER ATTR window is partitioned into a series of frames. Each frame contains the field attributes for a particular field. The attribute frames are displayed in the order in which the fields appear in the document. If the same field name is used more than once in the document, each occurrence has a separate attribute frame. Display 6.3 on page 81 shows a sample field attribute frame.

Display 6.3 Sample Field Attribute Frame

```
┌─────────────────────────────────────────────────────────────────┐
│ 🖳 SAS: FSLETTER: ATTR RENEWAL.LETTER (E)          _ □ ×          │
├───────────────────────────────────────────────────────────────── │
│  File   Edit  View  Tools   Solutions   Help                      │
│ ─────────────────────────────────────────────────────────────────│
│   Please use scroll commands to review the attributes of the fields.│
│                                                                    │
│   Symbolic name: FULLNAME     Occurrence: 2    Line: 10     Column: 6  △│
│                                                                    │
│      Attributes:    DEAR        FLOW LINE     DELETE               │
│                     LASTNAME    FLOW AFTER    REQUIRED             │
│                                 FLOW BEFORE   RIGHT JUSTIFY        │
│                                                               □    │
│                                                                    │
│   SAS variable aliases:  [ FULLNAME ]    [ ........ ]         ▽    │
└─────────────────────────────────────────────────────────────────┘
```

Use the FORWARD and BACKWARD commands to move among the attribute frames for the document.

The attributes for each frame are choice groups. To turn on an attribute for a field, move the cursor to the term in the attribute frame that corresponds to the desired attribute; then press ENTER. The term is highlighted in reverse video to show that it is turned on. To turn off a currently selected attribute, move the cursor to the highlighted term and press ENTER. The highlighting is removed to show that the attribute is turned off.

Field Attribute Descriptions

The following attributes can be assigned in the FSLETTER ATTR window:

DEAR
> modifies the field value by excluding all but the first and last elements of the value.
> To assign this attribute, move the cursor to the DEAR item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.
>
> This attribute converts names in the form *title first-name last-name* into *title last-name* for use in the salutations of letters. For example, if the name **Mr. John E. Doe** is entered in a field to which the DEAR attribute is assigned, the field value is converted to **Mr. Doe** when the document is printed.
>
> *Note:*   The DEAR attribute does not automatically provide the *Dear* element of the salutation. You must provide that in text:
>
> ```
> Dear &NAME_____:
> ```
>
> △
>
> The DEAR attribute can be used in conjunction with the LASTNAME attribute. If the LASTNAME and DEAR attributes are both assigned, the LASTNAME attribute is processed first so that the field value is in the proper order for the DEAR attribute.

DELETE
> deletes the line that contains the field if the line is blank when the letter is printed.
>
> To assign this attribute, move the cursor to the DELETE item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.
>
> Assign the DELETE attribute if it is possible that one or more observations will not have a value for the field or if the field might not be needed for a particular document. For example, some letters require more address lines than others. Suppose your document provides three fields for the address. Some letters require only two address lines, so you can assign the DELETE attribute to the last address field. If the field is blank, the FSLETTER procedure deletes the line allotted for the field when the letter is printed. If you do not assign the DELETE attribute to the field, a blank line appears in its place when the letter is printed.

FLOW AFTER
> removes extra spaces beginning with the first character that follows the field and ending with the first blank line after the field. If the field ends the line and paragraph, then any following blank lines between the line that contains the field and the next nonblank line are removed.
>
> To assign this attribute, move the cursor to the FLOW AFTER item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.

FLOW BEFORE
> takes out extra spaces beginning after the last nonblank character that precedes the field and ending with the first blank line after the field. If the field starts the line, then any preceding blank lines between the line that contains the field and the previous nonblank line are removed.
>
> To assign this attribute, move the cursor to the FLOW BEFORE item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.

FLOW LINE
> takes out extra spaces beginning after the last nonblank character that precedes the field and ending with the end of the line that contains the field.
>
> To assign this attribute, move the cursor to the FLOW LINE item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.

LASTNAME
> modifies the field value by moving the first element of the value that is followed by a comma to the end of the value.
>
> To assign this attribute, move the cursor to the LASTNAME item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.
>
> This attribute is used with fields that contain names in the form *last-name, first-name*. Since records are often kept by last name, this attribute is helpful when you are using a SAS data set to fill in field values. For example, if the LASTNAME attribute is assigned to a field, and the value entered in the field is `Doe, Mr. John E.`, then the value printed in the document is `Mr.  John E. Doe`.
>
> *Note:*   The LASTNAME attribute has no effect if the field value does not contain a comma. Thus, you can still enter values in the normal order in fields to which the LASTNAME attribute has been assigned. △

REQUIRED
indicates that the field must be filled in before you can leave the first step of the printing process.

To assign this attribute, move the cursor to the REQUIRED item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.

You must use the CANCEL command to end the first printing step without supplying a value for a required field.

RIGHT JUSTIFY
indicates that the field value should be right-aligned in the space that is reserved for the field. By default, values for numeric variables are right-aligned. Values for character variables are left-aligned, unless the character variable has the $CHAR format or informat and the value has leading blanks (leading blanks are retained with this format).

To assign this attribute, move the cursor to the RIGHT JUSTIFY item and press ENTER. The item is highlighted in reverse video. To turn off the attribute, move the cursor to the highlighted item and press ENTER.

SAS variable aliases
specifies the name of the variable from a SAS data set that is used to fill in the field. You can assign up to two aliases for the field name. The field name is automatically assigned as the first alias (unless the field name is a SAS automatic variable).

FSLETTER ATTR Window Commands

In addition to the global commands that are described in Chapter 9, "SAS/FSP Software Global Commands," on page 141, you can use the following commands in the FSLETTER ATTR window:

Scrolling

BACKWARD

BOTTOM

FORWARD

HSCROLL HALF | PAGE | *n*

LEFT <HALF | PAGE | MAX | *n*>

RIGHT <HALF | PAGE | MAX | *n*>

TOP

Searching

BFIND <*character-string* | '*character-string*'>

BLOCATE <*value* | '*value*'>

BLOCATE: <*partial-value* | '*partial-value*'>

FIND <*character-string* | '*character-string*'>

KEYFIELD <*field-name* >

LOCATE <*value* | '*value*'>

LOCATE: <*partial-value* | '*partial-value*'>

RFIND

RLOCATE

Closing the Window

CANCEL

END

Command Descriptions

Here are descriptions of the FSLETTER ATTR window commands:

BACKWARD
   displays the attribute frame for the previous field.

BFIND <*character-string* | '*character-string*'>
   searches backward for the specified character string in the field that was identified
   in the KEYFIELD command. If the search string contains special characters,
   embedded blanks, or lowercase characters, enclose it in quotes.
      Unlike the BLOCATE command, the BFIND command looks for the string
   anywhere in the field, not just at the beginning.
      To search forward from the cursor position toward the bottom of the window
   rather than backward toward the top, use the FIND command.
      To search backward for the character string specified in a previous BFIND or
   FIND command, use the BFIND command without arguments.

BLOCATE <*value* | '*value*'>
BLOCATE: <*partial-value* | '*partial-value*'>
   searches backward for the specified value in the field that was identified in the
   KEYFIELD command. If the search string contains special characters, embedded
   blanks, or lowercase characters, enclose it in quotes.
      The BLOCATE command searches only for an exact match. To specify only the
   first part of a value, use the BLOCATE: command. To search for a match in any
   part of the value instead of just at the beginning, use the BFIND command.
      To find the next occurrence of the specified value, use the RLOCATE command.
   To search forward from the cursor position toward the bottom of the window
   rather than backward toward the top, use the LOCATE command.

BOTTOM
   displays the attribute frame for the last field in the document.

CANCEL
   closes the FSLETTER ATTR window without recording any changes to the
   previous field attribute settings.

END
   closes the FSLETTER ATTR window and records any changes that you made to
   field attribute settings while the window was open.

FIND <*character-string* | '*character-string*'>
   searches for the specified character string in the field that was identified in the
   KEYFIELD command. If the search string contains special characters, embedded
   blanks, or lowercase characters, enclose it in quotes.
      Unlike the LOCATE command, the FIND command looks for the string
   anywhere in the field, not just at the beginning.
      To find the next occurrence of the specified string, use the RFIND command. To
   search backward from the cursor position toward the top of the window rather
   than forward toward the end, use the BFIND command.

FORWARD
  displays the attribute frame for the next field.

HSCROLL HALF | PAGE | *n*
  specifies the default horizontal scroll amount for the LEFT and RIGHT commands.
  Specify one of the following scroll amounts:

  HALF   scroll by half the window width.

  PAGE   scroll by the full window width.

  n   scroll by the specified number of columns.

KEYFIELD <*field-name*>
  identifies the field that is searched when you next issue a FIND, LOCATE,
  BFIND, or BLOCATE command. Indicate the field you want to search either by
  supplying the field name as an argument in the KEYFIELD command or by typing
  KEYFIELD on the command line, positioning the cursor on the desired field, and
  pressing ENTER.
      For example, to search for all the entries named RENEWAL in the `Name` field of
  the Explorer window, you must first identify `Name` as the field you want to search.
  Type KEYFIELD on the command line, position the cursor anywhere on the `Name`
  field, and press ENTER. Then issue the following command to locate the first
  entry in the catalog that has the name RENEWAL:

      ```
      locate renewal
      ```

      To display the current key field value on the window's message line, use the
  KEYFIELD command without arguments.

LEFT <HALF | PAGE | MAX | *n*>
  scrolls the window horizontally by the specified amount. The following scroll
  amounts can be specified:

  HALF   scrolls by half the window width.

  PAGE   scrolls by the full window width.

  MAX   scrolls to the left margin of the window.

  n   scrolls by the specified number of columns.
      If you do not explicitly specify a scrolling increment, the default increment is
  the amount specified in the HSCROLL command. The default HSCROLL amount
  is HALF.

LOCATE <*value* | '*value*'>
LOCATE: <*partial-value* | '*partial-value*'>
  searches for the next occurrence of the specified value in the field that was
  identified in the KEYFIELD command. If the search string contains special
  characters, embedded blanks, or lowercase characters, enclose it in quotes.
      The LOCATE command searches only for an exact match. To specify only the
  first part of a value, use the LOCATE: command. To search for a match in any
  part of the value instead of just at the beginning, use the FIND command.
      To find the next occurrence of the specified value, use the RLOCATE command.
  To search backward from the cursor position toward the top of the window rather
  than forward toward the end, use the BLOCATE command.

RFIND
  repeats the most recent FIND command, locating the next occurrence of the
  character string.

RIGHT <HALF | PAGE | MAX | *n*>
   scrolls the window horizontally by the specified amount. The following scroll
   amounts can be specified:

   HALF   scrolls by half the window width.

   PAGE   scrolls by the full window width.

   MAX   scrolls to the right margin of the window.

   n   scrolls by the specified number of columns.
        If you do not explicitly specify a scrolling increment, the default increment is
   the amount specified in the HSCROLL command. The default HSCROLL amount
   is HALF.

RLOCATE
   repeats the most recent LOCATE or BLOCATE command, locating the next
   occurrence of the value.

TOP
   displays the attribute frame for the first field in the document.

Printing Documents

The FSLETTER procedure provides two ways to print documents:

□ noninteractively. When you use the DATA= option in the PROC FSLETTER
   statement, or the ALL or DATA= options in the SEND command, the procedure
   prints copies of a document for each observation in a SAS data set. In this case, no
   windows are opened.

□ interactively. When you use the SEND command without the ALL or DATA=
   options, the procedure opens the FSLETTER SEND window. In this case, you can
   enter and edit field values manually, and you can make final editing changes
   before the document is printed.

Printing documents from the FSLETTER SEND window is a two-step process:

1 Fill in the fields in the document.

2 Perform final editing and release the document.

The rest of this section explains how the FSLETTER SEND window is used to
prepare documents for printing.

Step 1: Filling Fields

Note: If your document does not contain fields, go directly to step 2. △

During this step, you can enter text only in the fields; all other text is protected. As
you fill in each field, press the ENTER key to position the cursor at the beginning of the
next field. If you fill a field, the cursor moves automatically to the next field.

Note: You cannot enter an underscore as part of the field value, because the
FSLETTER procedure uses underscores as field pad characters. If you type an
underscore as part of the field value, it is removed when the FSLETTER procedure
processes the field value (when you press the ENTER key). This restriction is not
applicable to fields that are filled noninteractively (from a SAS data set). △

If a data set is open when you open the FSLETTER SEND window, the fields in the
document are automatically filled using the values from the data set. If the data set

was opened by the DATA command, the values come from the first observation in the data set. If the data set is open because the FSLETTER session was invoked from the FSBROWSE or FSEDIT windows, then the values come from the observation that was displayed in the FSBROWSE or FSEDIT window when you entered the FSLETTER session.

The FSLETTER SEND window uses the SAS text editor. In the first step of sending a document, you can use any of the text editor commands described in the online Help for base SAS software as well as the global commands described in Chapter 9, "SAS/ FSP Software Global Commands," on page 141, plus the following commands:

CANCEL
closes the FSLETTER SEND window without printing the document and returns you to the previous FSLETTER window, or to the Explorer window if no other FSLETTER windows are open. Use the CANCEL command if you decide after opening the FSLETTER SEND window that you do not want to print the document.

END
enters the final editing step of the printing process.

Step 2: Final Editing

At the beginning of this step, any field attributes that you assigned earlier take effect. For example, fields that have the attributes LASTNAME and DEAR are rearranged, any flowing that you specified is done, and unused underscores are deleted from fields. All text in the FSLETTER SEND window is unprotected; you can type over any part of the document—field values as well as text.

In this step you can make any final editing changes that are required for the document. Changes that you make in the FSLETTER SEND window are not recorded in the stored copy of the document.

When you are ready to print the document, issue the END command again. The document is sent, and you return to the previous FSLETTER window, or to the Explorer window if no other FSLETTER windows are open.

By default, the document is sent to the destination that is specified in the form associated with the document. To route the output to an external file, use the PRTFILE= option in the PROC FSLETTER statement, the PRTFILE command in the FSLETTER window, or the FILE= option in the SEND command.

Note: If you want to route output to an external file, you must select the output file before you enter the FSLETTER SEND window. Once you open the FSLETTER SEND window, you cannot use the PRTFILE command to change the output destination for the current document. △

In the second step of sending a document, you can use any of the commands described in step 1. However, in step 2 the END command performs different actions:

END
closes the FSLETTER SEND window, sends the document to the specified printer or file, and returns to the previous FSLETTER window, or to the Explorer window if no other FSLETTER windows are open.

Setting Text Editor Parameters

The working environment for entering, editing, or browsing text in the FSLETTER window is provided by the SAS text editor. The appearance and behavior of the SAS
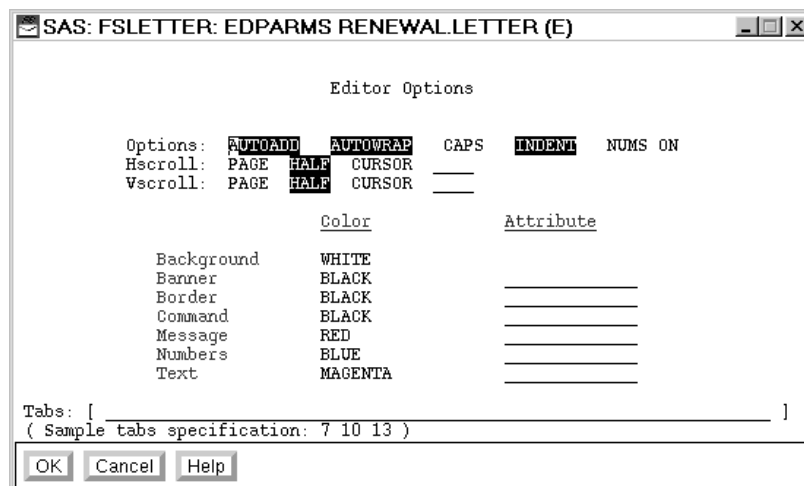
text editor in the FSLETTER window is determined by the settings of parameters that
are associated with the document that is being edited.

To review or customize the text editor environment for a document that you are
currently composing or for a previously created document that you are now editing, issue
the following command while the document is displayed in the FSLETTER window:

    edparms

This command opens the EDPARMS window to display the text editor parameters
that are in effect for the current document. Display 6.4 on page 88 shows the
EDPARMS window for a typical FSLETTER document.

Display 6.4 EDPARMS Window Showing Parameter Settings for an FSLETTER Document

```
┌─────────────────────────────────────────────────────────────────┐
│ ▨ SAS: FSLETTER: EDPARMS RENEWAL.LETTER (E)          _│□│✕│        │
│                                                                   │
│                        Editor Options                             │
│                                                                   │
│        Options:  AUTOADD     AUTOWRAP    CAPS    INDENT    NUMS ON │
│        Hscroll:  PAGE   HALF   CURSOR   ____                       │
│        Vscroll:  PAGE   HALF   CURSOR   ____                       │
│                                                                   │
│                         Color          Attribute                  │
│                                                                   │
│          Background     WHITE                                     │
│          Banner         BLACK                                     │
│          Border         BLACK          _____               │
│          Command        BLACK          _____               │
│          Message        RED            _____               │
│          Numbers        BLUE           _____               │
│          Text           MAGENTA        _____               │
│                                                                   │
│   Tabs: [ _____ ]  │
│   ( Sample tabs specification: 7 10 13 )                          │
│   ┌────┐ ┌──────┐ ┌──────┐                                        │
│   │ OK │ │Cancel│ │ Help │                                        │
│   └────┘ └──────┘ └──────┘                                        │
└─────────────────────────────────────────────────────────────────┘
```

You can change the parameter settings in the EDPARMS window. Some of the
parameter settings in the EDPARMS window are choice groups. To turn on these
parameters, move the cursor to the corresponding term in the EDPARMS window and
press ENTER. The term is highlighted in reverse video to show that the parameter is
turned on. To turn off a parameter, position the cursor on the highlighted term and
press ENTER. The highlighting is removed to show that the parameter is turned off.

Other parameter settings are fields in which you enter the desired parameter values.
The following section describes the parameters that are available in the EDPARMS
window.

The editor parameters that are displayed by the EDPARMS command are associated
with the displayed document only. Any parameter changes that you make are
applicable only to the current LETTER entry. The changes take effect when you close
the EDPARMS window.

Parameter Descriptions

The following text editor parameters are used in the FSLETTER window. The
default settings of these parameters are determined by the values in the
FSLETTER.EDPARMS entry when the document is created. Refer to "Creating Default
Parameter Settings" on page 91 for details.

AUTOADD
    controls the automatic insertion of new lines as you scroll forward past existing
    text. If the AUTOADD parameter is off, then you must issue a specific command,

such as the I (insert) line command, to insert new lines of text in the FSLETTER window.

AUTOWRAP
controls whether a word that will not fit on the current line is automatically moved (wrapped) to the next line.

If the AUTOWRAP parameter is turned on, then you can enter text continuously, without moving the cursor to the next line. You can also use the INCLUDE command to bring a file that has a longer line length into the text editor without truncating any text. When the INDENT parameter is also turned on, you can wrap text that is indented.

Note: This parameter is not supported by some display devices. The AUTOWRAP parameter is ignored if the display device does not support the feature. (In particular, most terminals for mainframe hosts do not support autowrapping.) △

CAPS
controls whether all text that is subsequently entered or modified is converted to uppercase characters when you press ENTER or a function key, or when you move the cursor from the line you are working on. If the CAPS parameter is turned on, character strings for the FIND and CHANGE command are also converted to uppercase. If you do not want lowercase characters in the string to be converted to uppercase, enclose your character string in quotes. When the CAPS parameter is turned off, all text is left as entered.

INDENT
controls whether indention at the left margin remains when text is flowed or automatically wrapped to the next line.

NUMS ON
controls line numbering for the FSLETTER window. If your window already contains text when you turn on line numbering, all text is shifted to the right, and the line numbers appear on the left side of the window. When line numbers are displayed, you can use them to issue text editor line commands. (See the online Help for base SAS software for details about text editor line commands.)

Hscroll
controls the default horizontal scrolling amount for the LEFT and RIGHT commands. Specify one of the following amounts:

HALF	scroll by half the current window width.
PAGE	scroll by the entire current window width.
CURSOR	scroll to the current cursor position.
n	scroll by the specified number of columns.

Vscroll
controls the default vertical scrolling amounts for the BACKWARD and FORWARD commands. Specify one of the following amounts:

HALF	scroll by half the current window height.
PAGE	scroll by the entire current window height.
CURSOR	scroll to the current cursor position.
n	scroll by the specified number of lines.

Color and Attribute
control the color and highlighting attributes of the following areas of the FSLETTER window:

Background	controls the background color of the FSLETTER window.

Banner   controls the color of the `Command===>` at the left of the command line.

> *Note:*   This parameter has no effect if a menu bar is displayed in place of a command line. △

Border   controls the color of the window border in character-based display environments.

> *Note:*   This parameter has no effect in graphical windowing environments. △

Command   controls the color of the text that users type on the command line.

> *Note:*   This parameter has no effect if a menu bar is displayed in place of a command line. △

Message   controls the color of text that is displayed in the window's message line.

Numbers   controls the color of line numbers if they are turned on in the FSLETTER window.

Text   controls the color of any new text that you type in the FSLETTER window.

> *Note:*   Changing this parameter does not change the color of any text that has already been entered in the FSLETTER window. △

The following values are valid in the `Color` fields:

BLUE	PINK	CYAN	WHITE
RED	GREEN	YELLOW	BLACK
MAGENTA	GRAY	BROWN	ORANGE

If a specified color is not available on a user's device, the procedure substitutes the available color that most closely matches the specified color. Some devices do not allow the background color to be changed; for these devices, the background color parameter is ignored.

The following values are valid in the `Attribute` fields. (You can abbreviate the values by entering only the first letter; the procedure fills in the complete value when you press ENTER):

HIGHLIGHT	high intensity
BLINKING	blinking
UNDERLINE	underlined
REVERSE	reverse video

If a parameter specifies a highlighting attribute that is not available on the device, the parameter is ignored. You cannot specify a highlighting attribute for the background.

Tabs
controls the default tab stops for the text editor.

Specify the tab stop for each column explicitly in the field provided. For example, the following values set tab stops at columns 1 (default), 25, 40, and 55:

```
25 40 55
```

Move your cursor to a tab stop by pressing your keyboard's TAB key.

EDPARMS Window Commands

In addition to the global commands described in Chapter 9, "SAS/FSP Software Global Commands," on page 141, you can use the following commands in the EDPARMS window:

CANCEL
closes the EDPARMS window without recording any changes made in the window and returns you to the window from which the EDPARMS command was issued. Use this command when you decide not to change the current parameter settings after you have opened the EDPARMS window.

END
closes the EDPARMS window, records any changes that you made to the parameter settings in the LETTER entry, and returns you to the window from which the EDPARMS window was opened.

Using Text Editor Commands

Another way to change the text editor environment while you are editing a particular document is to use global text editor commands. There is a corresponding text editor command for each of the parameters in the EDPARMS window.

Parameter	Text Editor Command
AUTOADD	AUTOADD <ON|OFF>
AUTOWRAP	AUTOWRAP <ON|OFF>
CAPS	CAPS <ON|OFF>
INDENT	INDENT <ON|OFF>
NUMS ON	NUMS <ON|OFF>
Hscroll	HSCROLL HALF|PAGE|CURSOR|MAX|*n*
Vscroll	VSCROLL HALF|PAGE|CURSOR|MAX|*n*
Colors and Attributes	COLOR *area color* <*highlight*>
Tabs	TABS *n*

If you open the EDPARMS window after issuing one of these commands, you see that the parameter setting in the EDPARMS window changes to reflect the parameter setting that you specified in the command.

Creating Default Parameter Settings

Whenever you create a new document, the initial settings for the text editor parameters are copied from a catalog entry named FSLETTER.EDPARMS. The default FSLETTER.EDPARMS entry is stored in the SASHELP.FSP system catalog. You can use the FSLETTER procedure to customize the default parameter entry for a catalog.

To create a custom FSLETTER.EDPARMS entry, issue the following command in an FSLETTER window:

```
edit fsletter.edparms
```

If the current catalog does not already contain an FSLETTER.EDPARMS entry, then a copy of the FSLETTER.EDPARMS entry from the SASHELP.FSP system catalog is created in the current catalog and is then opened for editing.

This command opens an EDPARMS window like the window in Display 6.4 on page 88 (except that the window title does not include the word EDPARMS). However, the parameter settings in this window have no effect on existing documents. Instead, these parameter settings become the default settings for any new documents that are created in the current catalog. You can change the parameters in FSLETTER.EDPARMS whenever you want without affecting existing LETTER entries.

You may find it convenient to create different FSLETTER.EDPARMS entries for different catalogs. If you keep letters in one catalog, reports in another, and questionnaires in another, you can create a different FSLETTER.EDPARMS entry for each catalog to store appropriate parameter settings for each kind of document.

When you create a new document, the FSLETTER procedure locates the default text editor parameter values by looking for the FSLETTER.EDPARMS entry first in the current catalog, then in your personal PROFILE catalog (SASUSER.PROFILE, or WORK.PROFILE if the SASUSER library is not allocated). If the entry does not exist in either of those catalogs, then the FSLETTER procedure uses the default FSLETTER.EDPARMS entry in the SASHELP.FSP system catalog.

Thus, you may also want to create a custom FSLETTER.EDPARMS entry in your personal PROFILE catalog. That entry then provides default parameter values for any catalog that does not have its own FSLETTER.EDPARMS entry.

Copying Parameter Entries to New Catalogs

You do not have to create a new FSLETTER.EDPARMS entry each time you create a new catalog. If you do not want to use the default text editor parameters in the SASHELP.FSP catalog or in your personal PROFILE catalog, you can copy your custom FSLETTER.EDPARMS entry from one catalog to another.

Suppose that you have defined an FSLETTER.EDPARMS entry in an existing catalog named MASTER.LETTERS and that you have created a new catalog named MASTER.LETTERS2. You can use drag-and-drop functionality in the Explorer window to copy the FSLETTER.EDPARMS entry from the old catalog into the new catalog, or you can issue the following command in the Explorer window:

```
copyitem master.letters.fsletter.edparms
    master.letters2.fsletter.edparms
```

SAS/FSP® Software Procedures Guide, Version 8