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FRANK J. SEILER RESEARCH LABORATORY

AL-An Automated Labeling System

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Charles R. Edmundson, Jr.

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AIR FORCE SYSTEMS COMMAND

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This report has been reviewed by the Commander and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.


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CHAPTER 1

INTRODUCTION

Welcome to AL. AL is an Automated Labeling System that is designed to operate under MS or PC DOS version 2.1 or above. It allows you to create, print, or store labels in a listfile.

AL can be used to produce simple mailing address labels, but it also has some nice features that make it potentially useful for most any labeling task. Some of these features are:

- **Line Justification**

AL allows you to left, right and center justify any line in your label with just the touch of a function key.

- **Save frequently used labels in a file of labels**

AL lets you save labels on a list of labels (or listfile). This list is saved as a file on your disk. The stroke of a couple of keys will allow easy access to these saved labels and label files. This feature allows you to group labels in logically distinct lists (for example each person in the office could have their own list of labels).

- **Help Function**

Help screens are provided for AL's two major functions.

- **Easy Update**

At the touch of a key, AL allows the user to change, save, or delete a label.

- **Error Trapping**

AL anticipates possible peripheral errors and traps them for the user. This allows the user sufficient time to take appropriate action, when normally a program would lock up or terminate.

1.1 System Requirements

To use AL, you need to have an IBM XT, AT or compatible with either CGA or EGA screen emulation. A monochrome screen is sufficient, but it must be driven by one of the aforementioned drivers. Although AL does not require a printer to create or update labels, obviously one must be attached to the machine if any labels are to be printed. Note: AL expects to use a printer that can be externally toggled into a condensed mode.

1.2 Using This Manual

AL is very user friendly and is therefore not difficult to learn. The purpose of this manual is to help the new user in getting started and to shine some light upon some of AL's more subtle details. It is recommended that the user read the entire manual before attempting to use AL.

1.3 Typographic Conventions

The following typographic conventions are used throughout this manual:

Example of Convention	Description
F4	Bold face letters indicate a word that represents a particular key on the keyboard.
[path expression \]	Items inside square brackets are optional.
>	Denotes the DOS system prompt.

1.4 Disclaimer

AL is the property of the United States Air Force and the United States Government. Its intended use is for anyone needing a powerful, straight forward labeling system. Since AL is the property of the United States Government both the executable and source code are public domain software. However, as is the case with all public domain software, the producer is not liable for any problems that may result through the use of the software. Therefore, the United States Air Force and the United States Government are not responsible for any hardware and or software problems that may result through the use of AL.

In addition, the following notice has been placed in AL. It involves the Public Domain nature of AL.

'This computer program is the work of the United States Government and as such is not subject to protection by copyright (17 U.S.C #105). Any person who fraudulently places a copyright notice or does any other act contrary to the provisions of the 17 U.S. Code 506(c) shall be subject to the penalties provided therein. This notice shall not be altered or removed from this software and is to be on all reproductions.'

CHAPTER 2

GETTING STARTED

2.1 Installing AL

If you have a hard disk and wish to install AL onto it; then simply place the diskette that contains AL into drive A and type:

```
>copy a:al.exe [path expression\]al.exe
```

and press **Enter** (Note: entries are not case specific). DOS should respond with:

```
1 File(s) copied
```

AL is now installed onto your hard disk.

2.2 Running AL

If you have loaded AL onto your hard disk then type:

```
>al
```

and press **Enter**.

If you don't have a hard disk or if you wish to run AL from the floppy disk drive instead of the hard disk drive, type:

```
>a:al
```

and press **Enter**.

In either case, the screen should now display the title page. To continue, press any key. At this point the screen should now display the interactive labeler menu (see *Figure 3.1*). The cursor will appear at the upper-left hand corner of the label arena (*the textured area in the middle of the screen*) and the user is now ready to use the Automated Labeling System.

CHAPTER 3

LABELER

AL contains an interactive menu/text editor, called Labeler. Compared with major text editors, Labeler's set of commands and abilities may seem simplistic. However, there are enough commands to allow the user to create and print labels simply and efficiently.

Labeler consists of two major parts: the command strip and the label arena.

The command strip gives the user a list of the most often used commands. It is located at the bottom of the screen (*see Figure 3.1*).

The label arena is the textured area in the middle of the screen (*see Figure 3.1*). The arena represents the templates of two labels. Each template contains 5 lines, but one has a maximum length of 29 characters, while the other has a maximum length of 50 characters. The thicker line of texture, just to the right of center, indicates the cut off for the smaller of the two templates. This dual template representation is useful for printing purposes only. A label that has lines no longer than 29 characters long can be printed with out having to toggle the printer to a condensed mode. However, a label with lines of length 30 or more characters (up to 50), will need to be printed with the printer in condensed mode, this is so that the characters will not run off the label.

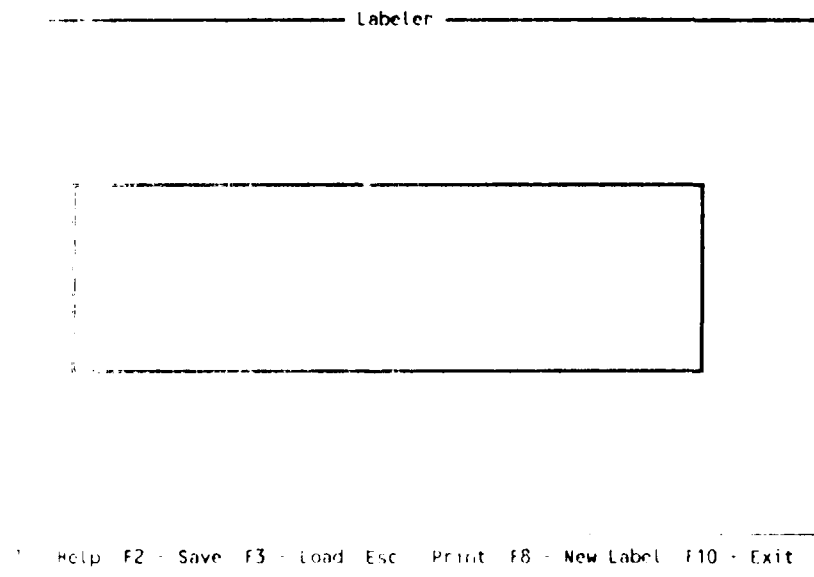


Figure 3.1 Labeler

3.1 Direction Keys

AL provides three ways for the user to move up and down within the label arena, they are:

- 1 – Up Arrow Key¹(keypad #8) – moves the cursor either to the line just above the current position or to the bottom line if the current cursor position is the top line.
- 2 – Down Arrow Key¹(keypad #2) – moves the cursor either to the line just below the current position or to the top line if the current cursor position is the bottom line.
- 3 – Enter Key – acts exactly the same as the Down Arrow Key.

3.2 Inserting Text

To insert text into the Label Arena, simply begin typing. If you make a mistake the **Back Space** key can be used to delete the character(s) to the left of the cursor. To restore text the user must retype it.

After inserting text on a particular line, press **Enter** and/or one of the arrow keys and the cursor will move to the next line. At this point you may begin entering in another line of text.

3.3 Deleting Text

In addition to the **Back Space** key, AL provides two predefined function keys for deleting text within the label arena. They are the keys **F8** and **F9** and they perform the following tasks:

- | | |
|-----------|--|
| F8 | will clear the entire label arena. |
| F9 | clears the line containing the cursor. |

Caution should be used when executing these functions since all changes are permanent. Note: neither function has any effect on the labels that already exist on the label list.

3.4 Line Justification

AL allows the user to perform text justification at the stroke of a key. The following functions are defined:

- | | |
|-----------|--|
| F4 | left justify. This will place the first character of the line at the left boundary of the label arena. |
|-----------|--|

¹please make sure that **Num Lock** is disengaged.

- F5** center text. This will center the text on the line containing the cursor.
- F6** right justify. This will place the last character of the line at the right boundary of the label arena.

Note: these functions apply only to the line containing the cursor.

3.5 Help

AL provides help screens in both the Labeler routine (see Figure 3.2) and the Label List (see Figure 4.3) management routine. These screens provide a synopsis of the available commands in each routine. To access Help press F1.

```

Labeler
-----
Help
-----
The available functions are:
<F1 - Help>      -- This screen.
<F2 - Save>      -- Saves the current label on a
                  list of labels. This list is
                  automatically loaded into memory
                  at the start of the program.
<F3 - Load>     -- Allows the user to load any
                  label from the list.
<F4 - Left Justify> -- This function will left justify
                  the line that contains the cursor.
<F5 - Center>   -- Centers the line that contains
                  the cursor.

*** Press <Enter> to Continue ***

F1 - Help F2 - Save F3 - Load Esc - Print F8 - New Label F10 - Exit

```

Figure 3.2a Labeler Help Screen

```

Labeler
-----
Help
-----
<F6 - Right Justify> -- This function will right
                    justify the line that contains
                    the cursor.
<F8 - New Label>     -- Clears label arena. Note: will
                    not delete label from label list.
<F9 - Delete Line>  -- Deletes the line that contains
                    the cursor.
<Alt - F3 - Filename> -- Allows user to change the label
                    list file.
<Esc - Print>       -- Prints current label.
<F10 - Exit>        -- Exits labeler.

Please refer to the user's manual for further details
on the above functions.
*** Press <Enter> to Continue ***

F1 - Help F2 - Save F3 - Load Esc - Print F8 - New Label F10 - Exit

```

Figure 3.2b Labeler Help Screen

3.6 Exiting Labeler

To exit Labeler and the program, simply press **F10**. The screen will be cleared and the DOS prompt will reappear.

3.7 Copying Labels to a Label List

To make a copy of your current label onto the label list press **F2**. AL will place a copy of your current label onto the current label list and sound a bell when he is done (see Chapter 4).

At this point, the user now has two copies of the current label, one is on the current label list and the other still exists in the label arena. The user may now alter the label in the label arena without affecting its copy on the label list. This allows for minor changes to be made with minimal effort. Pressing **F2** again would simply make another copy of the label arena onto the label list. It will not update the label previously saved.

If, after saving a label, the user wishes to start from scratch, they would need to either clear the label arena by using one of the delete functions (see Section 3.3) or by typing a line of text over the top of another line.

3.8 Printing

The **Esc** key allows the user to toggle from Labeler into the printing routine. For further details on printing see Chapter 5.

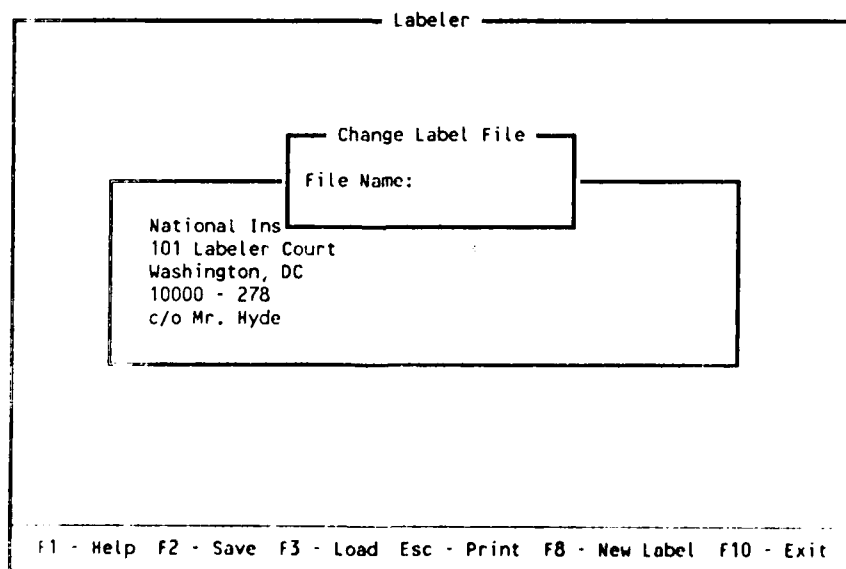


Figure 3.3 Prompt for New Label List File

3.9 Changing Label List File

AL provides the user with the ability to have more than one file of labels. In order to specify which of these files to use, the user must provide AL with its filename. To do this, press the **Alt** key followed by the **F3** function key. AL will then prompt the user for the name of the file to use (see *Figure 3.9*). At the prompt, type in the name of the label list file and press **Enter**. Note, AL will only accept valid DOS filenames. After pressing **Enter**, AL will automatically toggle over to the Label List routine using this file for the list (see *Chapter 4*). If the file is new and is, therefore, empty, AL will respond with a message telling the user that the file is empty. But, all saves (see *Section 3.7*) will be to this new file. Note: the default file is named *labelist.al*. If the user wishes to exit this function prematurely and therefore not change the label list file, then they can press **F10** and AL will jump back into Labeler and the user may continue from that point.

CHAPTER 4

LABEL LIST

To toggle over to the current list of labels, press **F3** while in Labeler. If the list is empty, AL will send the user an error message (see *Figure 4.1*). If there are labels in the list then the screen in *Figure 4.2* will appear.

As was the case with Labeler, there are several major parts to the Label List screen. These are the command strip, the list of labels and the highlighted label.

The command strip is similar to the one discussed in Chapter 3, it gives the user a list of the most often used commands. It appears at the bottom of the screen.

The other major part of the screen is the list of labels themselves. Note that if the list is longer than three labels, then the user will see only a partial listing of the labels. The label which is highlighted in blue is the "current" label.

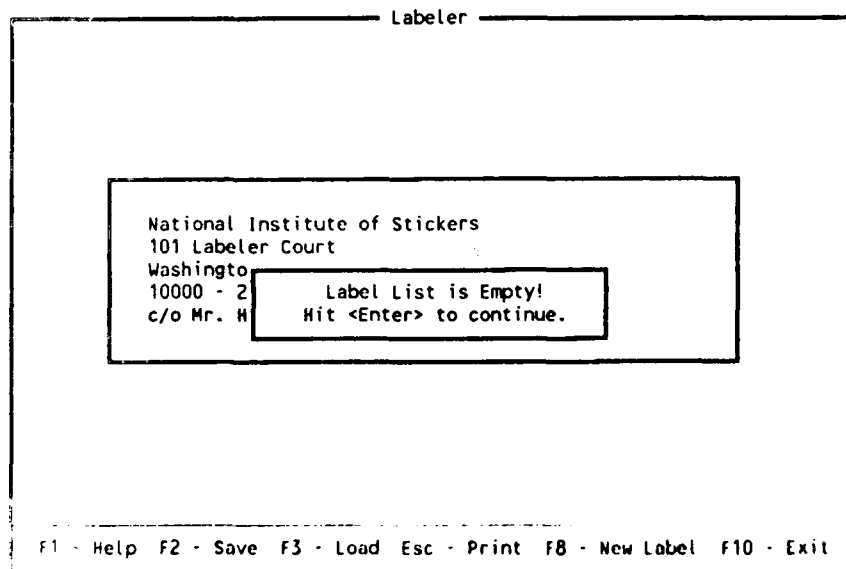


Figure 4.1 Error Message for Empty List

4.1 Label Access

When the user first toggles over into Label List, the "current" label is the first label in the list. The following sections given an overview of how to move within the label list and what sorts of things can be done with the "current" label.

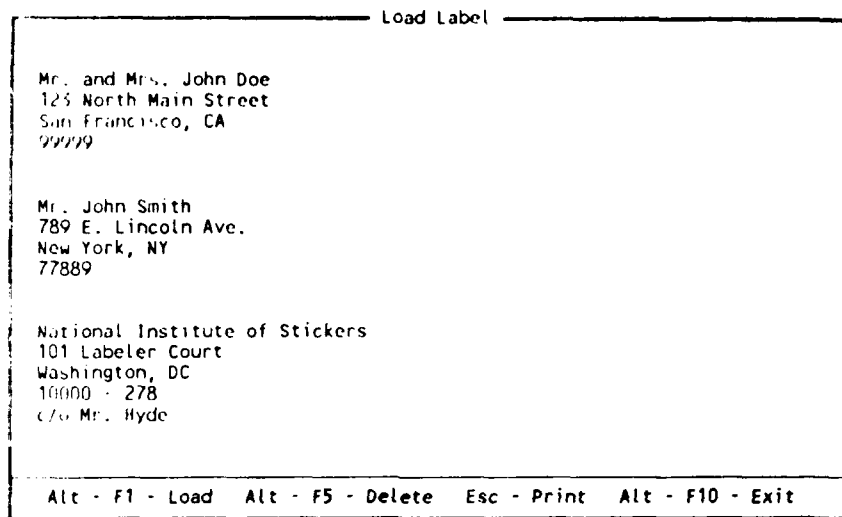


Figure 4.2 Label List

4.1.1 Changing the Current Label

AL allows the user several ways to move within the label list. These are:

- Arrow Keys** → the Up Arrow Key (keypad #8)² and the Down Arrow Key (keypad #2)² moves the current label marker up or down one label. Note: if, for example, the current label is the last label in the list, then pressing the Down Arrow Key will have no effect on the current label marker. The same holds true if the current label is the first label and the user presses the Up Arrow Key.
- Home** → (keypad #7)² Places the current label marker on the first label in the label list.
- End** → (keypad #1)² Places the current label marker on the last label in the label list.
- PgUp** → (keypad #9)² Moves the current label marker to the label just above the label that is now present at the top of the screen. If the top of the list is encountered before the Page Up command can be fully executed, then the current label marker is placed on the label at the top of the list.
- PgDn** → (keypad #3)² Moves the current label marker to the label just below the label that is now present at the bottom of the screen. If the bottom of the list is encountered before the Page Down command can be fully executed, then the current label marker is placed on the label at the bottom of the label list.

²please make sure that **Num Lock** is disengaged.

4.2 Label List Commands

There are several label list commands defined in AL. Briefly, they allow the user to copy a label into the label arena, delete a label from the label list, print a label, get a help screen or toggle back over to Labeler.

4.2.1 Copying a Label

Pressing and holding down the **Alt** key, followed by pressing the **F1** function key will cause AL to jump back over to Labeler, where the label arena will now contain the highlighted label from the label list. After releasing both keys, the user is now able to edit the label. As was the case before, altering the label that is currently in the label arena will have no affect on its copy on the label list. Saving the label will cause AL to store another occurrence of that label on the label list (*see Section 3.7*).

4.2.2 Deleting a Label

Pressing and holding down the **Alt** key, followed by pressing the **F5** function key will cause AL to delete the currently highlighted label from the label list. If the label deleted is the last label in the list, then AL will automatically jump over to Labeler. Note: use this function with care as there is no returning the label once it has been deleted.

4.2.3 Print a Label

Pressing the **Esc** key will cause AL to enter the printing routine using the "current" label as the label to be printed (*see Chapter 5*).

4.2.4 Help

Pressing **F1** will tell AL to display the help screen pertinent to the Label List routine (*see Figure 4.3*). It contains a brief synopsis of this chapter.

4.2.5 Exiting

The **Alt-F10** sequence will cause AL to toggle back over to Labeler. AL does not have a command that will allow the user to directly exit to DOS from Label List. The user must first toggle over to Labeler and then exit to DOS from there. Note: **F10** will also cause AL to toggle back over to Labeler.

```

Load Label
Help
Mr. a  The available functions for Load are:
123 N  <F1 - Help>      -- This screen.
San F  <Alt - F1 - Load> -- Loads the highlighted label
99999  into the label arena and
        exits loader.
Mr. J  <Alt - F5 - Delete> -- Deletes the highlighted label
789 E  from the list.
New Y  <Alt - F10 - Exit> -- Exits the loader function.
77889  <Esc - Print>    -- Prints the highlighted label.

Please refer to the user's manual for further details
on the above commands.

        *** Press <Enter> to Continue ***

Alt - F1 - Load  Alt - F5 - Delete  Esc - Print  Alt - F10 - Exit

```

Figure 4.3a Label List Help Screen

```

Load Label
Help
Mr. a  Cursor Movement: The following list of commands
123 N  are used to move the cursor.
San F  <↑ ↓> -- Moves the cursor one label up
99999  or down.
Mr. J  <Home> -- Moves cursor to the top of the list.
789 E  <End> -- Moves the cursor to the end of the list.
New Y  <PgUp> -- Moves the cursor to the first label above
77889  the current screen.
        <PgDn> -- Moves the cursor to the first label below
        the current screen.

        *** Press <Enter> to Continue ***

Alt - F1 - Load  Alt - F5 - Delete  Esc - Print  Alt - F10 - Exit

```

Figure 4.3b Label List Help Screen

CHAPTER 5

PRINTING

From either Labeler or Label List the user can toggle over to the printing routine by simply pressing the **Esc** key. If the user is in Labeler, then the label that is currently displayed in the label arena will be sent to the printing routine. If the user is in Label List, then the label that is highlighted will be sent to the printing routine.

Once in the printing routine, the screen in Figure 5.1 will be displayed. At the top, it shows which label is about to be printed. In the middle of the screen, the routine will ask you how many labels you would like to print. And at the bottom of the screen the command strip will be displayed.

Note, due to the straight forward nature of this routine, a help screen has not been supplied for this routine.

```
Print Label
-----
Current Label
-----
Mr. and Mrs. John Doe
123 North Main Street
San Francisco, CA
99999
-----
How many labels would you like? [ 0 - 50 ]
-----
F10 - Exit
```

Figure 5.1 Screen – Printing Routine – Small Template

5.1 Printing the Label

To print a label enter how many labels you would like printed at the prompt in the middle of the screen and press **Enter**. AL will begin printing this number of labels. If you pick 0, then the AL will simply print 0 labels and jump back to the routine that called it. In effect, picking 0 simply exits the printing routine without printing any labels.

If the label that you have picked to be printed has any line that is longer than 29 characters, then AL will flash a warning message indicating that you should toggle your printer into condensed mode (*see Figure 5.2*). Note, this is just a warning message, AL will let you print any label in any mode that you wish. But, if you wish to guarantee that none of the characters will be cut off, then you should toggle your printer into a condensed mode (*see your owner's manual*).

5.2 Possible Errors

If the user tries to enter the printing routine and a printer is either 1 – not hooked up or 2 – turned off, then the error message in Figure 5.3 will be displayed. To remedy this problem, either hook a printer to your computer (*see your owner's manual*), or if a printer is hooked up, turn it on. (Note, if the printer is turned on and the error message still persists, then check to see if the cable from the computer to the printer is properly hooked up).

If the printing routine is not printing and your printer is hooked up and the power switch is turned on, then make sure that the printer is one line. AL has no way of checking for this error.

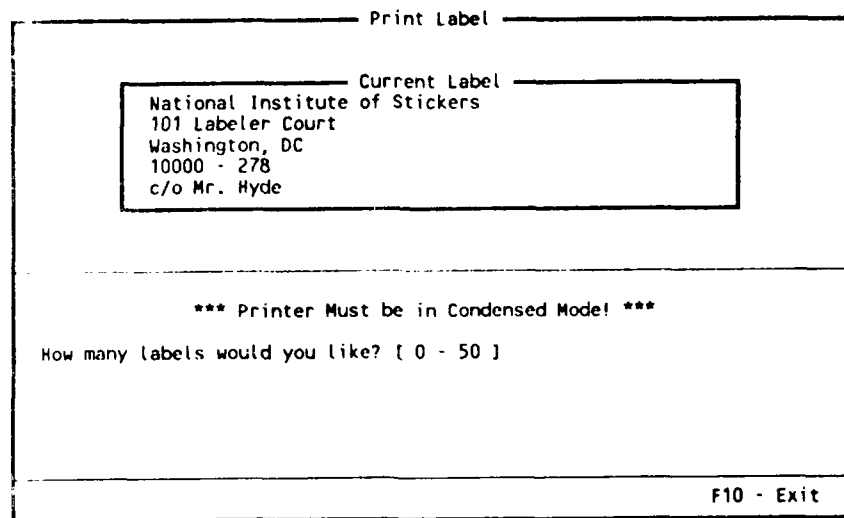


Figure 5.2 Screen – Printing Routine – Large Template

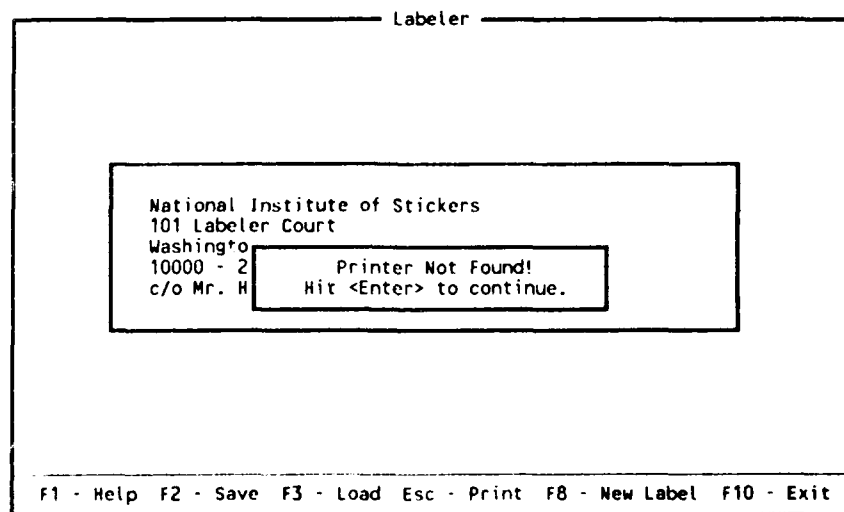


Figure 5.3 Error Message – Printer Not Found

5.3 Printer Loading and Miscellaneous Items

AL was written to be used with the following type of labels:

size: 3 1/2" X 15/16"
National Stock Number³: 7530-00-082-2661

They are self adhesive labels with tractor feed holes for the printer.

AL was written to be non-printer specific, however, a printer with movable tractor feeds and with condensed mode printing capabilities is highly recommended.

Loading the labels into the printer is a trial and error type proposition. Each printer is different and a general rule would be difficult, at best, if not impossible to provide. Therefore, some hints will be provided but ultimately the proof will come from creating a label, printing it, adjusting the printer and repeating this cycle until the results suit the user. Here are some hints: 1 - place the sheets of labels into the printer and line the top of the printer head with the bottom of a label. AL will begin printing on the next label down. Fine tune the position of the labels from here. 2 - when creating a test label, it is best to create two. One for the smaller template and one for the larger template. The user may find that they will need to readjust the labels if different printing modes are used. 3 - use of common sense is always best. For example, it may not be reasonable to adjust the labels within the printer so that a label of dimension 5 X 50 would be printed nicely. It may be more judicious to find some balance in size since most labels will probably not approach the length boundaries on every line, if ever at all.

Finally, the user may find that when printing labels in a non-condensed mode, that the use of four lined labels instead of five may provide nicer looking labels, but, here again, it is a matter of taste and trial and error.

³*this is the national stock number used by the United States Government.*