A horizontal rainbow graphic with four bands: green at the top, yellow, red, and magenta at the bottom. The text is centered over the yellow and red bands.

THE INCREDIBLE JACK.™

business
solutions CS

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Kings Park, NY 11754

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USER REGISTRATION CARD

IMPORTANT: Please complete this User Registration Card and mail it to Business Solutions. We **MUST** have a completed, signed card before we can supply customer support and/or a replacement or back-up of your copy-protected diskette.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Country _____

Phone () _____

Business/Profession _____ Title _____

JACK Serial No. _____ Version No. _____

Where Purchased _____ Date Purchased _____

Computer _____ Date Purchased _____

Memory Size _____ No. of Disk Drives _____

Languages System(s) _____

Do you have an 80 column display? _____ If so, what kind? _____

Printer Make _____ Model _____

I learned about JACK through _____

I plan to use JACK for (check all that apply)

Word Processing

Letter Writing

Form Letters

Record Retrieval

Mailing Labels

Calc Analysis

I have read the Business Solutions Customer License Agreement and agree to its terms.

Signature

Three horizontal lines for an address label.

Place
Stamp
Here

**Business Solutions Inc.
60 East Main Street
Kings Park, N.Y. 11754**

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A special service provided to Business Solutions customers is a telephone hotline available for support Monday – Friday (except holidays) from 10 AM – 4 PM (Eastern Standard Time). If you wish to receive support by telephone you must complete the Customer Support Hotline Card and mail it to Business Solutions Inc. along with the \$30 per year fee. Upon receipt of your card we will send you a Customer Support ID number and our Customer Support Hotline telephone number. Callers must identify themselves with their Customer Support ID number.

Replacement Diskettes

If your Diskette should prove to be faulty under normal use and service, Business Solutions Inc. will replace the diskette free of charge provided it is within the 90 day warranty period. You must also have mailed your completed User Registration Card to us. Return the diskette along with a complete description of why you think it is faulty to:

Business Solutions Inc.
60 E. Main St.
Kings Park, NY 11754

ATTN: Customer Support Manager

If the failure of the diskette is the result of an accident, abuse or misapplication of the diskette, then Business Solutions shall have no responsibility to replace the diskette.

CUSTOMER SUPPORT HOTLINE CARD

IMPORTANT: In order for you to receive your Customer Support Hotline ID number, YOU MUST FIRST RETURN YOUR OWNER REGISTRATION CARD COMPLETE WITH JACK VERSION AND SERIAL NUMBERS.

To get your Customer Support Hotline ID number, send this card along with a check or money order (made payable to Business Solutions Inc.) for \$30.00 (New York residents please include 7¼% sales tax) to:

Business Solutions Inc.
60 E. Main St.
Kings Park, NY 11754

ATTN: Customer Support Manager

I would like to obtain a Customer Support Hotline ID number valid for one year. Enclosed please find a check or money order in the amount of \$_____.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Country _____

JACK Version No. _____ Serial No. _____

Date Purchased _____



BACK-UP DISKETTE ORDER CARD

IMPORTANT: In order to obtain a back-up JACK diskette, YOU MUST FIRST RETURN YOUR OWNER REGISTRATION CARD COMPLETE WITH JACK SERIAL AND VERSION NUMBERS.

To obtain one copy of the JACK program diskette for back-up, mail this card along with a check or money order (made payable to Business Solutions Inc.) for \$20.00 (New York residents please include 7¼% sales tax) to:

Business Solutions Inc.
60 E. Main St.
Kings Park, NY 11754

ATTN: Customer Support Manager

I would like to order one back-up copy of the JACK diskette. Enclosed please find a check or money order in the amount of \$_____.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Country _____

JACK Version No. _____ Serial No. _____

Date Purchased _____



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SECTION I:
INTRODUCTION

Overview

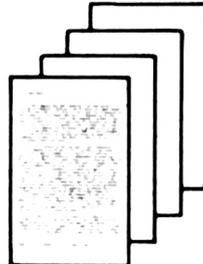
Word Processing:



Memo



Letter



Report

Most people use microcomputers to do word processing, calculating and record filing.

Single-Function Tools

Typical micro software requires three separate packages to perform these functions. Each package turns your computer into a single-function tool with a unique set of commands and terminology that makes it incompatible with other packages.

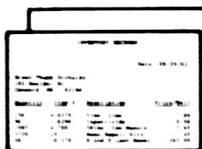
Calculating:

Ad Development:	5000
Media Cost:	10000
Circulation:	1000000
Cost/Reader:	.15
Readers/Sale:	50
Cost/Sale:	7.50

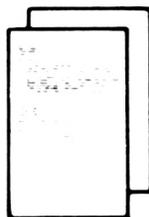
Universal Tool

JACK turns your computer into a "Jack of-all-trades" by performing all three functions with a simple integrated set of commands. Besides being easier to learn, for the first time you can combine these functions in a single task.

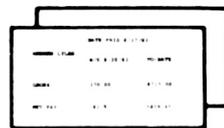
Record Storage and Retrieval:



Inventory



Patients



Salary

JACK lets you...

Create letters and reports with embedded calculations:

Dear Fred,

I estimate the job will take at least 5 weeks at a cost of \$350.00 per week, for a total of \$1750.00.

Joe

Create neatly formatted records:

The patient has shown a marked improvement since being taken off medication. Indications are that a few days of bed rest are all that will be required to restore him to full health.

And create records with items that are automatically calculated:

Name: Peter Kilgore

Subtotal: 389.82
Tax: 28.26
Total: 418.08
Amount Paid: 250.00
Balance: 168.08

Using this Manual

This section describes how this manual is organized and explains how to use it.

From time to time you will see a bold **REMEMBER** in the text. This is to point out an important feature or caution.

REMEMBER: It is very important that you read this section before continuing.

The major sections in this manual are: Tutorial, Reference Guide, Troubleshooting Guide, Maximum Capacities, and Glossary. Another very important piece of documentation is the Key Card.

Key Card

The Key Card shows you which keys to use in order to choose an option or move the cursor. For example, the Tutorial may tell you to use the tab key to move the cursor. If your keyboard doesn't have a tab key, the Key Card will tell you which key to use instead. It will also tell you how to create 80 column wide forms and letters even if you only have a forty column display.

REMEMBER: Make sure you read the Key Card before attempting to follow the Tutorial, and keep it handy at all times.

Tutorial

The Tutorial section is made up of seven lessons. It is recommended that you read through lessons 1 through 4 and follow the step-by-step instructions before referring to the Reference Guide. Lessons 1 through 4 will give you a basic understanding of the program and its major features. Lessons 5 through 7 give more advanced uses for the program.

Reference Guide

The Reference Guide contains detailed descriptions of all options. It is meant for the user who has gained some understanding of the program concepts by working through the Tutorial. Therefore, it is important that you read the Tutorial section before attempting to make extensive use of the Reference Guide.

Appendix A: Troubleshooting Guide

The Troubleshooting Guide contains explanations of error messages and other problems that may occur. Use it to help diagnose problems and find solutions.

Appendix B: Maximum Capacities

The Maximum Capacities section notes size limits and other constraints on program performance and should be consulted if you have a particularly large job to do.

Appendix C: Glossary of Terms

The Glossary of Terms gives an explanation of terms used in the program and its documentation. Use it if you do not understand a word or phrase in this manual.

Appendix D: Common Calculation Rules

This Appendix shows some common calculation rules such as how to compute mortgage payments, compound rates, and income tax tables.



**SECTION II:
TUTORIAL**

LESSON 1: Getting Started

This lesson will get you familiar with disk handling, loading the JACK program, and the layout of the screen.

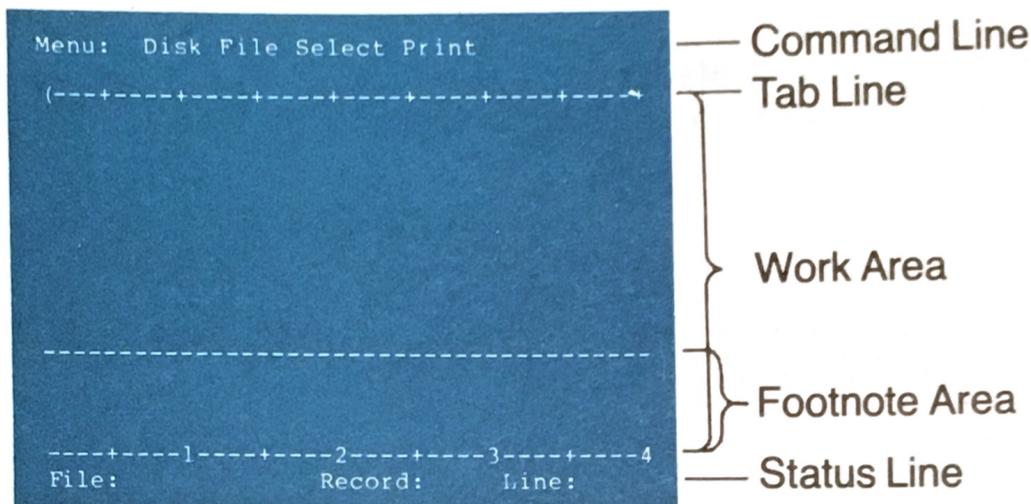
Diskettes

Special care should be taken when handling diskettes. NEVER touch the exposed magnetic surface with your fingers or any other implement. Diskettes should NEVER be exposed to extreme temperatures or magnetic fields such as those generated by televisions. Do not bend, staple, or mutilate the diskette. Always store diskettes in their paper sleeves when not in use. Use only soft felt tip pens when writing on the labels.

Loading the Program

To begin, make sure that your monitor is ON and your computer is turned OFF. Open the door of Drive 1 and insert the JACK program diskette. The label should be facing upwards and should enter the drive last. Close the drive door. In order to run JACK properly you must have at least one blank diskette to store your data (files) on. This is called a data disk. Insert your data disk in Drive 2 in the same manner. Turn the computer ON. The red 'in use' light on Drive 1 will go ON. The program disk is verified, then the JACK version number is displayed at the bottom of the screen. At this point you can press any key to continue, or you can wait until the serial number of your disk is displayed. You need to know the serial number in order to complete your User Registration Card. **REMEMBER: Do not remove the program disk from Drive 1 while using the program.**

The Screen



The screen is divided into the sections shown above.

Command Line

The top line on the screen is the command line. It is used to display menu options and prompt messages. When a menu is displayed, the name of the menu will appear followed by a colon and the available options. To select an option, hold down the **control** key and press the first letter of the displayed option. Pressing **escape** will return you to the preceding menu of options if there is one.

Prompt messages throughout are almost completely self-explanatory. If the reply to a prompt message can be longer than one character then the characters must be followed by **return** for the reply to be activated.

Tab Lines

The next line and the next to last line at the bottom of the screen are the tab lines. The tab lines indicate the current tab stops and margin settings. Plus signs (+) signify tab stops. Left and right parentheses indicate the left and right margins respectively.

Work Area

The next section (between the tab lines) is the work area. All of the editing, defining, data entry, etc. takes place in this area.

Footnote Area

This area of the screen is used when entering footnotes. When the Foot option is chosen, the current fieldname and its associated footnote (if any) will appear in this area.

Status Line

The bottom line of the screen is the status line. It indicates the currently selected file, record and line number. The status line also indicates the current field initiator (usually a colon), the global format for values, whether or not the file is locked, and whether auto-blanking is on or off.

Error Messages

Error messages appear on the two bottom lines of the screen. If you try to do something that is invalid, a beep will sound and an error message will be displayed. The message will explain the error and tell you to hit escape to continue. If the message does not fully explain what you did wrong, you can refer to Appendix A: Troubleshooting Guide at the back of this manual.

LESSON 2:

Creating a Letter

In this lesson you will create a short business letter to become familiar with the program's editing features. You will learn how to enter text, modify it, and print it out. **REMEMBER: It is important that you read the Key Card BEFORE attempting to follow the Tutorial.** All Tutorial examples are shown in upper and lowercase, but you may type them in all uppercase if you like.

Setting Up a File

To set up a file you must first select **Disk** mode from the main menu. **REMEMBER: Modes and options are selected by holding down the control key and pressing the first letter of the displayed option.** The following prompt will appear:

Select Drive: 2 3 4

Make sure your data disk (a new disk) is in drive 2, then press **2**. The program will take a little while to try to read the disk. Since the disk is not a JACK data disk yet, the following prompt will appear:

New disk (Y/N)?

Press **Y**. Next, you will be asked for a diskname. Type in the name, **TUTOR-DATA**, followed by **return**. The disk will then be formatted and made into a JACK data disk. Once the disk is formatted as a data disk it will not have to be formatted again. When the disk is formatted, the Disk menu will appear. Select the **Load** option. The following prompt will appear:

Load: Position cursor or enter filename

To create a new file, enter the filename **LETTER**, followed by **return**. This will reserve a space for the file to be saved in. Notice that the filename now appears on the status line and you are in File mode. File mode is used to define and edit files. Upon entering File mode, the work area of the screen will be blanked. We are now ready to enter text. Before we begin, notice the tab line. The original margin settings are at column 1 and column 80. (If you have a 40 column screen, see your Key Card for instructions on viewing columns 41 through 80.) For this example we are going to set the margins at columns 1 and 65. To do this, select **Pset** from the File menu (hold down the **control** key and press **P**).

Setting Tabs and Margins

Upon entering Pset (parameter set) the following menu will appear:

Pset: Format Tabs Colon Blanking

Select **Tabs** to change the margin settings. The cursor will be on the tab line and the following menu will appear:

Tabs: (Left + Set - Clear) Right .Length

Left and right parentheses are used to indicate margin settings. Pluses (+) indicate tab stops, while dashes (-) clear current settings. A period is used to indicate line length. The line length is automatically set at 80 (the period is off the screen) for new files. To set the new margin, use the **tab** key to move the cursor to column 65 (tab stops are at every 5th column), then type a right parenthesis. In column 66, type a period. This indicates the physical line length of the printed output. Press **return** to accept the new setting and return to File mode. Make sure the margin settings are correct before continuing. (If the right margin is back at column 80, you probably pressed escape instead of return.)

Use the **tab** key to move over to the fortieth column (press **tab** 8 times). Now enter the date as follows:

August 16, 1982

Press **return** twice and enter the following address at the left margin:

Frank Lenderson
437 Maplewood Ave.
Funnyside, CA 91827

Overstrike

If you make any mistakes you can simply type over them. The cursor keys will move the cursor over characters without erasing them. For example, "Lenderson" should be "Henderson", and "Funnyside" should be "Sunnyside". Position the cursor (using the cursor keys) so that it is on the L in Lenderson. Now type **H**. The mistake should be corrected. Now position the cursor on the F in Funnyside and change it to an **S**.

Press **return** twice and we are ready to enter the body of the letter as shown. Notice that if a word exceeds the right margin, it will automatically be word wrapped to the next line, so there is no need to press return at the end of a line.

Dear Frank,

I will be in your area during the week of September 6th. I am interested in setting up a meeting with you to discuss BSI's latest product. It combines the best features of word processing, file storage and retrieval, and calculation abilities all in one software package.

Please advise me when we can get together for a demo. I look forward to seeing you.

Before typing the closing, let's change the margin settings again. Select **Pset**, then **Tabs**. Move over to the fortieth column and type a left parenthesis followed by **return** to accept the new setting. The cursor will appear at the new left margin of the line you were on before selecting Pset. Move the cursor down a few lines and type in the following closing:

Sincerely,

Bob Programmer
President

Now let's change the left margin back to column 1. Choose **Pset**, then **Tabs**. On the tab line, type a left parenthesis in the first column and press **return**. Now press **return** twice and type in the following:

BDP:ma

Note that when you type the colon a caret (^) will appear on the screen. The purpose of the caret is explained in the next lesson. For now, simply type over the caret with a space to remove it.

Nsert

Suppose we want to rearrange the text of the letter a bit. Let's add a few words to the first sentence of the last paragraph. Position the cursor so that it is between ME and WHEN. Select **Nsert**. A full blank line will be inserted, so that the sentence looks like this:

Please advise me
when we can get together for a demo. I look
forward to seeing you.

At this point type in "**on an appropriate time and place**". Now it should appear as:

Please advise me on an appropriate time and place
when we can get together for a demo. I look
forward to seeing you.

Press **return**. This will remove any extra blank spaces and return you to the File menu. The sentence should now look like this:

Please advise me on an appropriate time and place when we can
get together for a demo. I look forward to seeing you.

Deleting and Moving Text

The Delete option allows you to delete text and blank spaces using the cursor keys. Let's try it. Position the cursor on the first character of the first sentence. Now select **Delete**. Right-cursor and down-cursor will now delete characters. Use **right-cursor** to delete the first few words. Backing up with **left-cursor** will restore the characters that you just deleted. The **down-cursor** will delete all characters from the cursor position to the end of the current line. Now press **escape**. This will undo any deletions you have made and return you to the File menu. (Pressing return would accept the deletions and remove the blank spaces where text has been deleted.)

Text can be moved by first deleting it, then using the Copy option. Let's move the first sentence of the first paragraph to the beginning of the second paragraph. To do this, we will first delete the sentence and then copy it in the correct place.

Position the cursor on the "l" and select **Delete**. Use the **right-cursor** to delete the sentence. (Move the cursor right until it is on the first letter of the second sentence.) Once the sentence is deleted, press **return**.

Copy

To Copy the sentence that was just deleted, position the cursor on the first character of the second paragraph. Select **Copy** and the sentence will be inserted in the space preceding the cursor position. The Copy command always inserts the most recently Deleted text at the cursor position.

When the letter is complete, select **Save**. The file will be saved on disk as LETTER and you will be returned to the File menu. Press **escape** to get to the main menu.

Printing Files

To get a printed copy of your letter, select **Print**. The following menu and "form" will appear:

Print: Disk File Record Setup

Width (255) : 80

Length: 66

Spacing: 1

Left Offset: 0

Fill (Y/N): Y

Flush-right (Y/N) : Y

Colon (B/D/:) : :

Caret (B/D/ ^) : ^

Top Skip: 2

Bottom Skip: 3

Top Title:

Bot Title:

Footnotes (Y/N/E) : N

Linefeed (Y/N) : Y

Continuous (Y/N) : N

Message:

Sort:

Alpha Sort (Y/N) : Y

Select the **Setup** option.

The Setup "form" determines the format for printed output. Let's change the page Width from 80 to 65. Type **65**, followed by **return**. You can move the cursor to other options by using the cursor keys. For now, let's leave the rest of the options as they are. Press **escape** or **return** to get back to the Print menu. Make sure your printer is ON. To print your letter, select the **File** option. Press **return** to start printing. Your output should look like this:

August 16, 1982

Frank Henderson
437 Maplewood Ave.
Sunnyside, CA 91827

Dear Frank,

I am interested in setting up a meeting with you to discuss BSI's latest product. It combines the best features of word processing, file storage and retrieval, and calculation abilities all in one software package.

I will be in your area during the week of September 6th. Please advise me on an appropriate time and place when we can get together for a demo. I look forward to seeing you.

Sincerely,

Bob Programmer
President

BDP:ma

If nothing happens, make sure your printer is not in LOCAL mode. If you are still having trouble, consult your Key Card and/or the Troubleshooting Guide for further help in locating the problem.

If your output came out double-spaced, your printer probably supplies its own linefeeds. To compensate for this, select **Setup**, position the cursor to modify the Linefeed option by using **tab** or **right-cursor**, and change it to **N**. Hit **return** and try printing the file again. This time it should be single-spaced.

You may wish to experiment with the format options in Setup by changing page Width, turning Flush-right off, and adding a Top Title. Consult the Reference Guide for a complete description of each of these options.

LESSON 3:
Creating a Form

In this lesson you will learn how to add fields (value areas) to a file definition, and enter different sets of information into the fields to create multiple records from one file definition. You will also learn how to store, select, retrieve, and print these records.

Defining Fields

To begin, go to **Disk** mode and select **Load**. Notice the filename LETTER is displayed in the catalog. We are going to create another file, so move down to the first available blank line and type in the name **ALUMNI**, followed by **return**. The work area of the screen will be cleared, the file menu will appear, and you are ready for entry.

Application forms are good examples for storing and retrieving records. In the example below, there are 15 fields to be entered for each record. To create a field, type in the label (fieldname) for the field followed by a colon (:). The colon indicates the beginning of a field. The end of a field is determined by a caret (^). When you type a colon (:) JACK automatically supplies a default caret (^). You can move this by spacing over the old caret and typing a new one where you want the field to end.

All of the menu options and cursor movements work as they did in the last example. The editing features (Nsert, Delete, and Copy) used in the last example are still available. Make sure you leave sufficient space between fields for value entries. For this example you should leave 14 spaces (not including the ^) between CITY and STATE, and 3 spaces between STATE and ZIP. You should also leave 3 spaces for AGE and 2 spaces for SEX. There should be 5 spaces after YEAR OF GRADUATION.

Type in the following file definition as shown:

Name:				^
Address:				^
City:	^ State:		^ Zip:	^
Phone:				^
Age:	^ Sex:		^ Marital Status:	^
Year of Graduation:			^ Degree:	^
Major:				^
Occupation:				^
Contribution:			^ Date Paid:	^

Once the definition is entered as shown, you will want to Lock it so as to “freeze” the fieldnames. In other words you will not be able to type over the fieldnames accidentally while entering records. To do this, select the **Lock** option.

Lock

When the Lock option is selected the current file is locked, thus protecting the fieldnames and preparing the file for data entry. When the file is locked, the File menu is changed and appears as follows:

File: Goto Clear Lock Save

This means that you cannot use the editing features when a file is locked. If a file is locked, selecting the Lock option will cause the file to be unlocked.

When all of the fields are entered as shown, press **Save**. The file will be saved and a blank definition will be displayed. You are now ready to enter the next record. Enter the following information into the next four records. Remember to press **Save** to accept each complete record before starting the next one. You can add more records if you would like to, but these will suffice. When the last record has been saved, press **escape**. This will bring you to the main menu.

Jamieson Jacobs
52 Church St.
Cambridge MA 01839
(617) 396-4280

28 M Married

1979 MA
Physics
Physicist

100.00 07/13/81

Suzanne Engle
147 Concord Ave.
New York NY 10093
(518) 268-3001

24 F Single

1980 BS
Computer Science
Computer Programmer

25.00 07/30/82

Bernard Wilson
9 Harrison Dr.
Barre VT 05903
(802) 924-3876

36 M Single

1979 BA
History
High School Teacher

50.00 04/27/82

Ralph Donovan
38 Cliffside Dr.
Rockville MD 34821
(301) 964-1924

43 M Married

1963 BA
French
Translator

30.00 12/19/81

Selecting Records

Suppose we would like to view all the records of married people who contributed more than \$25. To do this, choose **Select** mode from the main menu. Select mode shows us that no selection criteria are currently in effect. Type in ('Select:' already appears):

Select: Status = "Married" AND Contribution >25

Press **return** after you have entered the criteria. Now, reenter **File** mode and the first record meeting these requirements will automatically be displayed. To see the next such record, use the Goto option. Upon selecting **Goto**, the following menu will appear:

Goto Current Record: Use cursor keys
Other Records: Next Prev First Last

We want to see other records, and in particular, we want to see the next selected record. Choose the **Next** option. The next selected record will be displayed. Notice that you are still at the Goto option. You can choose Next again, or you can try Prev or First. These options display the previous and first selected records. The Last option displays a blank (new) record for you to enter information into. Press **escape** or **return** to exit the Goto option and return to File mode.

Printing Records

To print the records, press **escape** to return to the main menu and select **Print**. When the Print menu appears, choose **Records**, then **Selected**. Press **return** and the currently selected records will be printed.

You may want the records printed without the trailing carets. To do this, select **Setup** from the Print menu. Move the cursor to the field labeled CARET (B/D/ ^): and enter 'B'. This will cause all the carets to be blanked when the records are printed. Press **return** twice and you will be at the Print menu. Choose **Records**, then **Selected**. Press **return** and the selected records will be printed again, this time with the carets replaced by blanks.



LESSON 4:
Calc Analysis

In this lesson you will learn how to perform complex calculation analysis by using the footnote option. Let us try a simple example to start off.

Calculations

Suppose you wanted to determine the PRICE your product should sell at in order to maximize your MARGIN. To determine this you must consider the COST of production, the VOLUME at which you sell it, and the cost of PROMOTION.

For example, assume that the VOLUME of the product sold varies inversely to its PRICE squared. That is to say, the lower the price of the item, the more you sell. Also assume that if priced at \$10 each we would sell 10000 copies of the product. The initial production COST is \$2000 for equipment. There is also a material and labor cost of \$15 for each item produced. The initial cost of PROMOTIONal artwork is \$5000 with an additional mailing cost of \$6 for each product sold. To find the MARGIN you would multiply the PRICE of the product by the VOLUME sold, then subtract the value of COST and PROMOTION from the total.

Select **Disk** mode and the **Load** option. Move to the first available blank entry position and enter **CALC** as the new filename (followed by **return**). The File menu will appear and we can begin to enter the new definition. Move down to the second line and enter **PRICE:**. After typing the colon, a caret (^), will appear 10 spaces to the right of the colon. The caret signifies the end of a field value area. You can change the length of the field by spacing over the caret and typing a new one where you would like the field to end. If you erase the caret without replacing it, the field will have no value area. For now we will leave the caret where it is. Type 10 after the colon. This will be our first test value for PRICE.

Entering Footnotes

Press **return** twice to skip a line. Type in the fieldname **VOLUME:** (don't forget the colon). To specify a calculation rule for a field, you select the Foot option from the File menu after typing in the fieldname and colon. Select **Foot**. Upon choosing the Foot option, a line of dashes will appear near the bottom of the screen. The current fieldname will be displayed under the line followed by the cursor.

```
Foot: Nsert  Delete  Copy
(---+---+---+---+---+---+---+---+
PRICE:      ^
VOLUME:     ^

-----
VOLUME:

-----+-----1-----+-----2-----+-----3-----+-----4
File:CALC      Record:  1 Line:  1
```

Enter the following footnote for VOLUME:

1000000/(PRICE*PRICE)

The '/' specifies division and the '*' specifies multiplication. Note that the cursor movement, Nsert, Delete, and Copy all work the same way in the Foot option as they do when entering text in File mode. Press **return** to accept the footnote. (Escape will ignore the entry.) The value for VOLUME will be calculated and displayed.



LESSON 5:

Text with Embedded Calculations

In this lesson you will combine word processing with calculations. Let's write a small report which, given a product's cost, desired margin, and discount percents, will determine its list, distributor, and wholesale prices.

Choose **Disk** mode from the main menu. Select **Load** and enter **PRICE** as the new filename, followed by **return**. Once you are in File mode, select **Pset**. Using the **Tab**s option, set the right margin at the fortieth column. (Remember to press **return**.) Now enter the following text and fields:

Given a product cost of:200.00 ^ and a
 desired margin of:40 ^%, we recommend a
 list price of: ^ . Our standard
 distributor discount of:30 ^ % yields a
 distributor price of: ^ and our
 wholesale discount of:20 ^ % produces a
 wholesale price of: ^ .

Renaming Fields

Notice that the fieldnames tend to be uninformative (i.e. 'OF:'). Let's make the names more descriptive for reference purposes. Position the cursor in the first field (between the : and the ^) and select **Foot**. Back over the current fieldname and type:

COST: ^ 2-

Press **return**. Now you must use **COST** as the fieldname in all future reference to this field. The caret indicates an explicit format. The 2 indicates that 2 decimal places should be displayed, and the minus sign (-) allows a variable length for the field when printing. In other words, all extra blanks in the field area will be deleted when the records are printed. We will want all of the fields to have a variable length. Position the cursor in the next field and select **Foot**.

Notice that the existing name is #00, this is a code name for the field because there was already a field named OF:. Change this to **MARGIN** (don't forget the colon and ^ -) and press **return**. The third field calculates the product's LIST price based on the COST and the MARGIN. Position the cursor in the third field and choose **Foot**. Back over the current fieldname and enter the following footnote:

$$\text{LIST: COST}/(1 - \text{MARGIN}/100) \wedge 2 -$$

Press **return**. Notice that the LIST price is recalculated and displayed. Now go back to the product COST field and change it to **300**. Notice that LIST price is not automatically recalculated. In unlocked mode, only updating footnotes causes recalculation. To see the effect of changing COST to 300, use **Foot** (press <CTRL F>) followed by **return**.

Now move to the fourth field. Using **Foot**, change the current name to **DISTDISC** (for distributor discount). (Don't forget the colon and ^ -.) Change the current name for the wholesale discount (the sixth field) to **WHOLEDISC** followed by a colon and the format ^ -. The footnotes for distributor price and wholesale price should be:

$$\text{DISTPRICE: LIST}*(1 - \text{DISTDISC}/100) \wedge 2 - \quad (\text{press } \mathbf{return})$$
$$\text{WHOLEPRICE: LIST}*(1 - \text{WHOLEDISC}/100) \wedge 2 - \quad (\text{press } \mathbf{return})$$

Using Locked mode for Faster Calculations

Once all of the footnotes are entered correctly, select Lock to lock the file definition and footnotes, and speed up calculations. You can now enter values for COST, MARGIN, DISTDISC, and WHOLEDISC. Notice that once you enter a value in locked mode, all the related fields' values are recalculated.

Your screen should now look like this:

```

File: Goto Clear Lock Save

(-----+-----+-----+-----+-----)
Given a product cost of:300.00 ^ and a
desired margin of:40 ^%, we recommend a
list price of:500.00 ^. Our standard
distributor discount of:30 ^% yields a
distributor price of:350.00^ and our
wholesale discount of:20 ^% produces a
wholesale price of:400.00 ^.

-----+-----1-----+-----2-----+-----3-----+-----4
File:PRICE          Record:  1 Line:  1

```

Try changing some values. To save this definition, press **Save**. A new (blank) record will be displayed. You can now enter another record or use **Goto** to display the previous values.

Try creating several different sets of values and saving them on disk. After you are done you may use the **Goto** command to browse through the different possibilities.

To print the records, press **escape** until you are at the main menu. Select **Print**, then **Setup**. Change the value of COLON to **B** and the value of CARET to **D**. Move down to FOOTNOTES (Y/N/E): and change the N to **Y**. This will cause all of the footnotes in the file definition to be printed at the bottom of each output page. If you enter E instead, all of the footnotes will be printed on a separate sheet of paper after all of the records are printed. Press **return** and select **Records**. Next print the **Current** record. The record will be printed without colons or carets and the value areas will not have any extra blanks. At the bottom of the page a line of dashes will be printed and the footnotes will appear below the line.

LESSON 6:

Form Letters

Form letters use word processing as well as record storage and retrieval. Let's try an example. Suppose you are the president of a company called Ultrasonic Sales Associates. You have been in business now for ten years, and some of your customers have been with you from the start. You would like to reward these longtime customers with a special discount. A form letter that you can keep on file seems appropriate.

Go to **Disk** mode, select **Load** and name the new file **DISCOUNT** (followed by **return**). You should now be in File mode. Select the **Pset** option, then **Tab**s. Set the right margin to column 65 and the line length to 66. (Don't forget to press **return**.) Enter the letter as follows:

January 1983

```

:----- (25) ----- ^
:
:
:
:----- (16) ----- ^ , :-(2)- ^ :-(5)- ^

```

Dear : ^ ,

As a long time customer of : ^ years, we would like to offer you a special discount of : ^ % on any items you order this month. The discount will automatically be applied to your next order and any subsequent orders until you are otherwise notified. Thank you very much for your patronage.

Sincerely,

Barbara Smith, President
Ultrasonic Sales Associates

“Invisible” Fieldnames

Notice that the fields do not have any fieldnames (all the colons are preceded with a space). To give them “invisible” names for later reference, move the cursor to the first colon (:) and choose the **Foot** option. The field has been given a code name (#00). Use left-cursor to back over the #00 and type in **NAME:** followed by **return**. Change the next five fields to **COMPANY:**, **ADDRESS:**, **CITY:**, **STATE:**, and **ZIP:** respectively.

For CITY and STATE you will want to allow a variable length for printing. Move the cursor to the field for CITY (the fourth field) and select **Foot** again. In the footnote (after CITY:) enter $\wedge -$ as the format for this field. (Don't forget to press **return**.) Do the same for the next field (STATE:). You will also want the field after “Dear ” to have a variable length. Move the cursor to the colon after “Dear ”. Select the **Foot** option and enter $\wedge -$ as the format. This indicates that you want whatever is in these fields to be left justified and all extra blanks to be deleted. For more information about variable length field formats see the Foot option in the Reference Guide.

The actual letters that you will send will need the name, address, discount, etc. filled in. To do this you must first Lock the file definition. Select **Lock** and lock the file. You now have the template, or body, for your form letter.

Notice that the cursor is on the first available field space. Type in the name **Martin Goldman**. Press **tab** to move to the next field and enter **Goldman Jewelers Inc.** Now press **tab** again and type in the following address, city, state, and zip:

```
:3211 E. Main Street
:Smithtown      ^ , :NY^ :11787^
```

Move to the next field and type **Mr. Goldman**. Press **tab** again and enter **10** as the number of years that Goldman Jewelers has been a customer.

Enter the discount as **10%** (no need to type the percent sign). You're done! Make sure the information that you have entered is correct. If it is, press **Save** to save the record.

After pressing **Save**, a new copy of the letter will appear ready to be filled in. At this point you would complete another form letter, save it, complete another, save it, and so on until you had all the letters that you needed for the present time. (You can add more at any time.) For purposes of this lesson, complete two or three more form letters. (Use **Save** after each one is completed.) When you are done press **escape** to leave File mode.

Let's print the letters. Select **Print** from the main menu, then **Setup**. Change **WIDTH** to 65 and press **return** twice. Now select the **Records** option. The following menu will appear:

Records: Selected Current

The **Selected** option causes all selected records to be printed. (This means all records in the file if no selection criteria has been entered.) The **Current** option causes only the current record to be printed. Let's print all of the records. Make sure that your printer is **ON** and not in **LOCAL**. Now choose the **Selected** option. Press **return** to start the printing. Your first letter should look like this:

January 1983

:Martin Goldman^
:Goldman Jewelers Inc.^
:3211 E. Main Street^
:Smithtown^, :NY^ :11787^

Dear :Mr. Goldman^,

As a long time customer of :10^ years, we would like to offer you a special discount of :10%^ on any items you order this month. The discount will automatically be applied to your next order and any subsequent orders until you are otherwise notified. Thank you very much for your patronage.

Sincerely,

Barbara Smith, President
Ultrasonic Sales Associates

From the Print menu select **Setup**. Using Setup we can print the letter without the colons or carets. Enter **D** (for delete) for the COLON (B/D/ :) and the CARET (B/D/ ^) options. This will cause all of the colons and carets to be deleted when the records are printed.

Press **return** to accept the changes. The Print menu will appear. Print the selected records again and the letters will be printed without the colons and carets. Your first letter should now look like this:

January 1983

Martin Goldman
Goldman Jewelers Inc.
3211 E. Main Street
Smithtown, NY 11787

Dear Mr. Goldman,

As a long time customer of 10 years, we would like to offer you a special discount of 10% on any items you order this month. The discount will automatically be applied to your next order and any subsequent orders until you are otherwise notified. Thank you very much for your patronage.

Sincerely,

Barbara Smith, President
Ultrasonic Sales Associates

Mailing Labels

A file of mailing labels can be created in two ways. The first is to create a file definition and fill in the records (name, address, etc.) one at a time. The second way is to create the file definition and copy the information from another file, such as your form letter file (DISCOUNT). This is done by using the Copy option in Disk mode. Let's try it.

First, we must create the file definition for the labels. Go to **Disk** mode and select **Load**. Enter the new filename as **LABELS** (then press **return**). In File mode, enter the following:

```

:-----(25)-----^
:
:
:-----(16)-----^ :-(2)-^ :-(5)-^

```

These fields correspond to the NAME, COMPANY, ADDRESS, CITY, STATE, and ZIP fields in the form letter (DISCOUNT). In order to have the program copy these fields from the file DISCOUNT, you must give the fields the same names that the corresponding fields had in the form letter. Move the cursor to the first colon and select the **Foot** option. Back over the code name and type **NAME:**. Use the same technique to name the rest of the fields **COMPANY:**, **ADDRESS:**, **CITY:**, **STATE:**, and **ZIP:**. You now have the format for your labels. The labels are four lines long and 25 characters across (31 minus the carets and colons). Press **Save** to save the file definition on disk.

Copying Records

Now we want to copy the name and address information from the file DISCOUNT to the file called LABELS. Press **escape** to return to the main menu and select **Disk** mode. When copying records, the information to be copied must be in the current file, so select the **Load** option and load **DISCOUNT**. This will put you in File mode. Return to Disk mode and select the **Copy** option. The following menu will appear:

Copy: Records File Disk

The Records option copies fields in the current file to fields with matching names in the designated destination file. Select the **Records** option. The following prompt will appear:

Destination file:

Type in **LABELS** (since this is the name of the file that you want the information transferred to). Press **return** after you have entered the filename. When the copying is done, the Disk menu is displayed. **Load** the **LABELS** file to check the results of the copy. Note that each label is stored as a separate record.

Printing Labels

Let's try printing the labels. Go to the main menu and select **Print** mode. Now select the **Setup** option. Set Width to **25**, Length to **10**, Fill and Flush-right to **N**, Colon and Caret to **D** (for Delete), and Top Skip to **3**. Always test the output before printing on actual labels. You will most likely have to adjust several of the Setup options (Left Offset, Top Skip, Bottom Skip, and Length) before you are ready to print the actual labels.

To test the output, put a regular sheet of paper in your printer (continuous form paper is okay). From the Print menu, select the **Records** option, then **Selected** to print all of the records. When the printing is done, remove the sheet of paper from the printer and hold it over a sample sheet of labels. Check the alignment and make any necessary changes in Setup. There is no need to print on real labels for this lesson, but you may want to try adjusting the output on paper just for practice.

LESSON 7:

Records with Calculations

This lesson shows you how to store and retrieve records with calculated values. A good example of these type of records are customer billing records. Let's define such a file. Go to **Disk** mode and select **Load**. Name this file **BILLING** and press **return**. Upon pressing return, you will enter File mode. Now you can enter the following file definition:

ACME GARDEN SUPPLIES

Company Name:			^
Address:			^
City:	^ State:	^ Zip:	^
Invoice Number:			^
Date Shipped:		^ Clerk:	^
Total:			^
Discount Class:			^
Net Amount:			^
Amount Paid:			^
Amount Due:			^

Using IF THEN ELSE

The field NET AMOUNT: depends upon the fields DISCOUNT CLASS: and TOTAL:. Position the cursor in the field labeled NET AMOUNT:, select **Foot**, and type in the following footnote (don't press return until you have typed the entire footnote):

```
Amount: IF Class=1 THEN Total * .6 ELSE IF Class=2 THEN Total * .75
ELSE IF Class=3 THEN Total * .9 ELSE IF Class="" THEN Total
ELSE "Error"
```

Press **return** when you are done.

This will calculate the customer's discount and subtract it from the total amount.

The last field should have a calculation rule also. Move the cursor to the field labeled AMOUNT DUE: and select the **Foot** option. Add the following footnote:

Due: Amount – Paid

This will show the balance the customer owes. When the file definition is complete, choose the **Lock** option and lock the file.

Now let us enter some sample records. The following examples are good for starters. You may also enter a few more of your own if you wish. Remember to **Save** each completed record.

```
File: Goto Clear Lock Save
(-----+-----+-----+-----+-----+-----+
          ACME GARDEN CENTER
Company Name:Henry's Garden Center ^
Address:716 Lexington St.         ^
City:Marlboro      ^State:MI^Zip:71298^
Invoice Number:2188767-35         ^
Date Shipped:08/01/82 ^Clerk:Mark ^
          Total:3012.00           ^
Discount Class:2                  ^
          Net Amount:2259.00      ^
          Amount Paid:2093.00    ^
          Amount Due:166.00      ^
-----1-----2-----3-----4
File:BILLING      Record: 1 Line: 1
```

Green Thumb
93 River Rd.
Denver, CO 32198

Cambrink's
328 Main Street
Essex, RI 03815

3218748-76
07/08/82 · George

2188394-11
05/13/82 Ted

4721.00

2931.00

4721.00 (calculated)

3

2637.90 (calculated)

4721.00

1982.00

0.00 (calculated)

655.90 (calculated)

Selecting Records

Suppose you would like to see only those records which have an AMOUNT DUE greater than \$100.00. To do this, press **escape**. The main menu will appear and you can choose **Select**. Enter the following criteria for selection:

Select: Due > 100.00

followed by **return**. Now reenter **File** mode. The first record to meet the selection criteria will be displayed. Select **Goto**. Use **Next** to see the next selected record. The First and Previous options will display the specified record. Last will always display a blank record. Press **return** or **escape** to get back to the main File menu.

Sorting

Now let's print these records in alphabetical order according to COMPANY NAME. Press **escape** and select **Print** mode from the main menu. Choose **Setup** and the Setup menu will appear. Move the cursor to the field labeled CARET (B/D/ ^): and type **B** followed by **tab**. This will cause all of the carets to be blanked when the file is printed. Next move the cursor down to SORT and enter **NAME**. Press **return** twice to get back to the Print menu. Now select the **Records** option, followed by **Selected**, and press **return** to start printing. All of the records meeting the select criteria will be printed in alphabetical order.

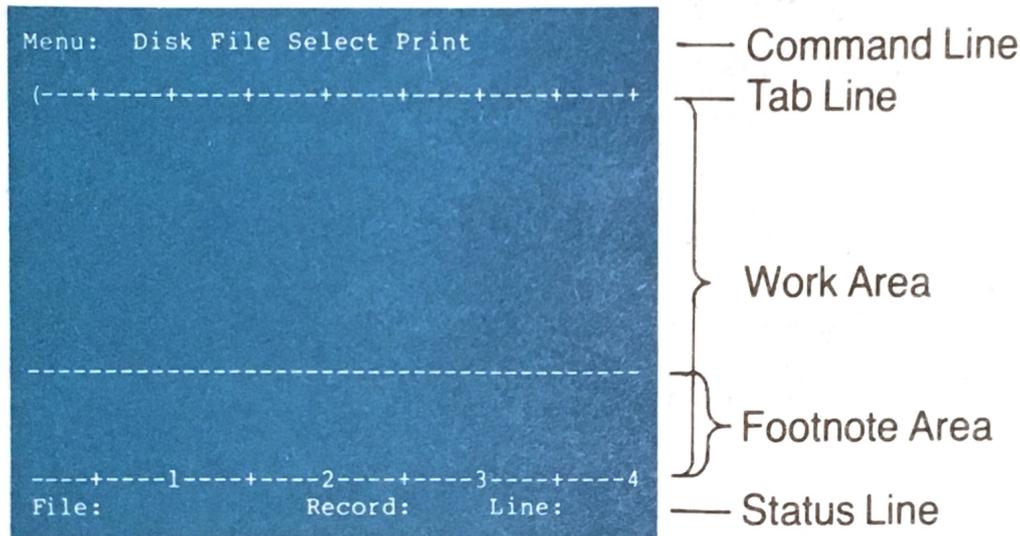


**SECTION III:
REFERENCE GUIDE**

This section is meant for the user with some familiarity with the JACK program. You should read the Key Card and go through the Tutorial Lessons 1 to 4 before making extensive use of this Reference Guide. The Reference Guide gives a detailed description of each option, including related prompt messages, and possible responses.

Screen Organization

The screen is divided into several sections as shown below:



Command Line

The top line of the screen is the command line. It is used to display all menu options and prompt messages. If a response to a prompt can be longer than one character, then the characters must be followed by return for the reply to be activated. Escape will return you to the preceding menu of options if there is one.

Tab Lines

The next line and the next to last line at the bottom of the screen are the tab lines. The tab lines indicate the current margin settings, tab stops and line length. Left and right parentheses indicate the left and right margins respectively. Pluses (+) indicate tab stops. Period (.) indicates the line length. If no period is present, line length is set at 80. Margin settings, tab stops and line length may be altered using the Pset option in File mode.

Work Area

The next section of lines, between the tab lines, is the work area. All the editing, defining, data entry, etc. takes place here.

Footnote Area

This area of the screen is used to enter footnotes. Upon entering the Foot option in File mode, a line of dashes will divide the screen, and the current fieldname and its associated footnote (if any) will appear below the line. After exiting Foot, the dashes and footnote are cleared from the screen and the cursor is returned to where you left off.

Status Line

The bottom line on the screen is the status line. The status line appears as follows:

File: Record: Line: Colon: Format: Lock: Blank:

File: displays the name of the currently active file.

Record: indicates the number of the currently displayed record.

Line: indicates the number of the line at the top of the screen.

Colon: indicates the current field initiator (e.g.:).

Format: indicates the current global format for field values.

Lock: indicates whether or not the current file is locked. (Displays Y if locked, N if not locked.)

Blank: indicates whether or not auto-blanking for new records is on. (Displays Y if on, N if blanking is not on.)

Error Messages

Error messages appear on the two bottom lines of the screen. If you try to do something that is invalid, a beep will sound and an error message will be displayed. The message will explain the error and tell you to hit escape to continue. If the message does not fully explain what you did wrong, you can refer to Appendix A: Troubleshooting Guide at the back of this manual.

Main Menu

After loading the program the following menu of options appears on the command line:

Menu: Disk File Select Print

The Reference Guide describes each of the major modes (Disk, File, Select, and Print) in detail. A short summary of each mode is provided below.

Disk

Disk mode allows you to select drive 2, 3 or 4 as your data disk drive. Disk mode reads the disk in the specified drive, verifying readability, and displays the name of the disk and the number of the drive. It also lists a catalog of files stored on the disk and allows you to load, copy, remove, or save records or files.

File

File mode allows you to define the fieldnames, text, and footnotes of the file. If the file was already defined, the first record of the file is displayed and you can modify it or go to a blank definition to enter a new record. You can also lock the file definition and enter data in fields (entry positions) only. Fields with calculation rules are automatically recalculated every time a related field is modified.

Select

Select allows you to specify selection criteria. In addition to string and numeric pattern matches, you may use IF THEN ELSE statements for the selection. As the specified file is searched, successive records meeting the criteria are selected. The selected set of records is used for editing, sorting, and printing.

Print

Print mode lets you print listings of files, records, and disk catalogs. It also lets you specify criteria to determine the order of records to be printed. Printer setup features are provided to support compressed print, line spacing, right justification, page length and width, and titles, among other things.

Disk Mode

Disk: Load Newdisk Save Remove Copy

Disk mode allows you to load existing files, create new files or save a file under a new filename. It also lets you copy records into other files, copy file definitions or entire disks, and remove selected records, files or entire disk catalogs.

Upon selecting Disk mode, disk drive 2, or the previously selected drive will be searched for a readable disk. If one is found, a catalog of the files on the disk will be displayed. If no disk is found or if the disk is new, the following prompt will appear:

Select Drive: 2 3 4

To continue, you must specify the drive that contains your data disk (or a new disk). If the disk is new, or is not a valid data disk, you will get the same prompts provided in the Newdisk option. (See Newdisk below.)

Once a valid data disk has been read, the name of the data disk and the number of the drive it is in will be displayed just above the bottom tab line on the screen.

Load

The Load option allows you to load a new or existing file into the computer's memory. Upon choosing the Load option, the following prompt will appear:

Load: Position cursor or enter filename

At this point you may use the cursor keys to point to the file to be loaded. To create a new file, enter a filename (up to 12 characters long) in the blank entry space in the catalog. Once the cursor is positioned, or a filename has been typed, press return to activate the file. The first record in the file will be displayed, and you will automatically be put in File mode. **REMEMBER: Anything in memory will be cleared upon loading a file.** The name of the currently active file appears on the status line at the bottom of the screen. Pressing escape aborts the Load option and returns you to the Disk menu.

Newdisk

To read a different data disk once Disk mode has been entered, insert the disk in a drive and close the door. Press Newdisk and the following message will appear:

Select Drive: 2 3 4

Type in the number corresponding to the drive the data disk is in. The disk will be read and the catalog displayed. If the disk is unreadable, the following message will appear:

New disk (Y/N)?

Typing N will result in an error message that tells you the disk is bad. Escape will return you to the main menu without altering the disk. If the disk is to be a new data disk, press Y. The following prompt will appear:

Enter new diskname:

Enter a diskname (up to 12 characters long) and press return. The disk will be cleared (formatted). **REMEMBER: Everything previously stored on the disk will be erased.**

Save

The Save option allows you to save the current file under a new or existing filename. Upon selecting Save, the following prompt will appear:

Save: Position cursor or enter filename

At this point you may position the cursor at a file in the catalog, or you can move the cursor to a blank position and enter a new filename. Pressing return activates your selection. If a new filename was specified, then the current file will be saved under the new name. Selecting an existing file will result in the following prompt:

Overwrite *filename* (Y/N)?

Pressing Y will cause the current file to be saved under the specified filename, overwriting the previous contents of that file. Once the file has been saved, you will be returned to the Disk menu. Pressing N will abort the Save and return you to the Disk menu.

Remove

Remove allows you to delete selected records, files or entire disk catalogs. Upon choosing Remove, the following menu will appear:

Remove: Records File Disk

Records

The Records option causes the currently selected records to be deleted. Upon choosing the Records option, the criteria used to select the current records and the following prompt will be displayed:

Remove selected records (Y/N)?

Press Y to confirm the deletion, or press N to abort the deletion. When the deletion is completed you will be at the main Disk menu.

File

The File option removes an entire file of records. Upon choosing File, the following prompt will appear:

Position cursor at file to remove:

You may then use the cursor keys to position the cursor next to the file you wish to delete. Pressing return will activate your selection and the following prompt will appear:

Remove file *filename* (Y/N)?

Pressing Y will cause the file to be deleted. Pressing N or escape will abort the deletion and leave the file as it was. After the file is deleted, you will be at the main Disk menu.

Disk

The Disk option will erase the entire data disk. When the Disk option is chosen the following message will appear:

Clear disk *diskname* (Y/N)?

Pressing N will abort the deletion and return you to the Disk menu. Pressing Y will okay the deletion and the following prompt will appear:

Enter new diskname:

At this point, you may enter a name for the disk followed by return to complete the removal of the old catalog. Pressing escape will abort the Remove option and leave the disk as it was. After the disk is cleared, you will be at the Disk menu.

Copy

Copy mode lets you copy selected records from one file into another file. It also lets you copy a file definition to a new file. Copy also allows the duplication of entire disks in order to make backup copies of valuable data.

Upon entering Copy, you are presented with the following menu:

Copy: Records File Disk

Records

The Records option allows you to copy the currently selected set of records to another file. Data from matching fieldnames will be transferred into new records in the destination file. Existing records in the destination file will not be altered. When the Records option is chosen, the current selection criteria and the following prompt will appear:

Destination file:

At this point you must enter the name of the file that the records are to be copied to. Records **MUST** be copied to an existing, defined file. The drive that the destination file is in must be specified if it differs from the currently active drive. A drive is specified as D2/, D3/, or D4/. For example:

Destination file: D3/Employees

This entry specifies that the file to be copied to is called Employees, and is located on the disk in drive 3. Note that the source records are assumed to be the currently selected records. After the records are copied, you will be returned to the Disk menu.

File

The File option allows you to copy a file definition. When the File option is chosen the following prompt will appear:

Destination file:

At this point you must enter the name of the file to be copied to. If the destination filename is new, the program will automatically proceed to copy the file definition. If the filename already exists the following message will be displayed:

Overwrite file *filename* (Y/N)?

Pressing N will abort the copy and leave the specified file unaltered. Pressing Y will cause the file to be overwritten by the new file definition. **REMEMBER: Any existing records in the destination file will be lost.** When the copy is completed you will be returned to the Disk menu.

Disk

The Disk option causes the contents of the currently active disk to be copied onto another disk. When the Disk option is chosen, the following prompt will appear:

Destination drive: 1 2 3 4

At this point you must choose the number of the drive that contains the disk to be copied onto. If you only have two drives, you will want to use drive 1 as the destination drive. Be sure to remove your program disk and insert the destination disk before selecting drive 1. An error message will result if

you attempt to copy over the program disk. After choosing the destination drive, the following prompt will appear:

Overwrite disk in drive *drive#* (Y/N)?

Pressing N will abort the copy and leave the disk unaltered. Pressing Y will cause the contents of the currently active disk to be copied onto the destination disk. **REMEMBER: All information previously stored on the destination disk will be lost.**

REMEMBER: If you have used drive 1 for copying, don't forget to put the program disk back in after the copying is done!

When the copying is finished (and the program disk is back in drive 1) you will be returned to the Disk menu.



File Mode

File mode is used to create, modify, or examine a file. When File mode is entered, the first record of the currently selected file (or a blank screen if the file is new) will be displayed. You may position the cursor on the screen to prepare for inserting or deleting, or you can simply start typing over old text or adding new text.

Fields

Field (item) names are specified by typing the name followed by the currently specified field initiator (normally a colon). Fieldnames may consist of any characters except space, the current field initiator (usually a colon) and any arithmetic operators that may be used in footnotes (+, -, /, *, (,), ^, =, <, >). Reserved words (AND, OR, NOT, IF, THEN, ELSE) should not be used as fieldnames. You may use several words to describe a field, but only the word nearest the field initiator will be recognized as the fieldname. For example, only Address is recognized as the fieldname in the following field description:

Street Address:

The end of a field area is specified by a caret (^). When a colon (or the current field initiator) is typed to designate a field, a caret will automatically be placed on the screen based on the global format. (The default global format is 10 character spaces long.) To change the length of the field area, position the caret where you want the field to end. For example:

SOCIAL SECURITY NUMBER: ----- ^

There are 11 character spaces for data in this example (the dashes shown are used here for illustration purposes only).

Editing

Words will automatically be wrapped to the next line if they will overlap the right margin, and if there is room on the next line. The cursor keys move the cursor without deleting characters. Space bar will delete characters that are spaced over. You may only enter or edit text within the currently set margins. Tab is used to jump the cursor to the columns indicated by the tab line (at the top and bottom of the screen).

@PAGE

The @PAGE instruction is used to designate explicit page breaks (for printing purposes only). In other words, if the page length is set at 66, but you have a page that you would like to end at a certain point in the text, all you have to do is type in the @PAGE instruction where you want the new page to begin. The @PAGE should be the only item on a line. If anything precedes the @PAGE on the line, the command will not be recognized (it will be treated as normal text). Text that appears after an @PAGE, but on the same line, will be ignored. See Print Mode for more information on printing.

Data Entry

Lock, locks the fieldnames and footnotes of the current file definition. When a file is locked you cannot change the definition (fieldnames and footnotes), thus allowing entries in fields only.

Save accepts the current record and/or file definition and saves them on disk. After the Save is completed, the next record in the currently selected set of records is displayed. Pressing escape instead of Save returns you to the main menu without saving the changes made to the current record.

File:	Nsert	Delete	Copy	Foot	Goto
	Pset	Lock	Save	Restart	

Nsert

Pressing Nsert (insert) causes a blank line to be inserted starting at the current cursor position (and between the current margins). You may then enter any text that you want to insert. If you fill the blank space, typing one extra character will cause another blank line to be inserted. Pressing the down-cursor key while in Nsert also causes additional blank lines to be inserted. Pressing return completes the insertion and causes any excess spaces created by the Nsert command to be removed. Any blank lines created by pressing the down-cursor or space bar will not be removed.

Before Nsert:

David will be in New York.

Nsert:

David will be in
New York.

Enter text:

David will be in Chicago before going to
New York.

After return:

David will be in Chicago before going to
New York.

Delete

Once you have selected Delete, the following prompt message appears:

Delete: Use cursor keys

The right and down-cursor keys are used to delete characters. Make sure you position the cursor before choosing Delete. Moving the cursor deletes any character that the cursor passes over except for the character that it ends up on. Pressing down-cursor deletes all characters from the cursor to the end of the current line, and moves the cursor to the beginning of the next line.

For example:

Before down-cursor:

The theory of the moment is that @bout 4 or 5,000
copies have been distributed.

After down-cursor:

The theory of the moment is that
☐opies have been distributed.

If you have accidentally removed a character or line, it can easily be replaced by moving the cursor in the opposite direction. For example, if you moved the cursor right and deleted a character, move it left and the character will be restored.

Return confirms the deletion, removes any blank spaces that were inserted, and returns you to the main menu. Pressing escape, instead of return, will abort Delete and return the original text.

After return:

The theory of the moment is that ☐opies have been distributed.

REMEMBER: Only text between the current margins is affected by the editing options.

Copy

Upon choosing the Copy command, the most recently deleted text will be copied at the current cursor position. **REMEMBER: You must position the cursor before choosing Copy!** Multiple copies of text can be created by positioning the cursor, selecting Copy, repositioning the cursor, selecting Copy, etc. In other words, the program remembers the text that you Delete and keeps it for use by Copy until you use Delete again.

Foot

The Foot option is used to enter a footnote for calculating a field, and/or an explicit format for the field data. Footnotes allow you to do calculations based on other fields or simply supply a constant value for a field. When Foot is chosen, the current fieldname (the one preceding the cursor) appears at the bottom of the screen followed by the corresponding footnote (if any). For example:

```
Foot: Nsert Delete Copy
(---+---+---+---+---+---+---+---+
PRICE:
VOLUME:
COST:

-----
COST: 2000+15*VOLUME

-----1-----2-----3-----4
File:CALC      Record: 1 Line: 1
```

You may then enter (or edit) a footnote up to three lines long. Pressing return causes the footnote to be accepted. Pressing escape will abort the Foot option and return the old footnote (if any).

While in Foot, you can also change the name of the field for reference purposes. Changing the name in Foot does not affect the fieldname in the file definition. To change the fieldname, back over the current name in Foot and type the new fieldname over the old one followed by the current field initiator if necessary. If a field has no name (just the field initiator) or has the same name as an existing field, it will be given a code name in the footnote. The code names appear as #00, #01, #02, etc. It is suggested that you change the code name to something more descriptive of the field.

Footnotes consist of calculation rules and/or formats. Calculation rules may consist of any combination of the following:

1. Numeric constants

Age: 20

2. String constants

Name: 'Gordon F. Bookbinder III'

3. Arithmetic expressions

Tax: $239 * .0725$

Gross: $\text{Rate} * \text{Hours}$

Estimate: $(\text{Rate} - \text{Discount}) * \text{Hours} + 20$

4. Conditional Expressions

Pay: IF Hours < 8 THEN Rate* Hours ELSE Rate* 8
+ (Hours-8) *Rate *1.5

Duty: IF Clock > 9 AND Clock < 17 THEN 'Susan'
ELSE IF Clock > 21 OR Clock < 5 THEN 'Brian'
ELSE 'Bob'

Rating: IF Occupation = 'Unemployed' THEN 0 ELSE 5

Status: IF Name = .. 'Gladstone' .. THEN 'Accepted'
ELSE 'Wait'

See Appendix D: Common Calculation Rules for more examples of calculation rules and their uses.

Numbers may range from negative 99 trillion to positive 99 trillion. (Numbers larger or smaller than this may be entered, but will be treated as error conditions if used in a calculation.)

The following operators may be used in a footnote and are calculated in the order shown:

- () Parentheses
- ** Exponentiation
- * / Multiply and Divide
- + - Plus and Minus
- < > = Less than, Greater than, and Equal to
- NOT Logical NOT
- AND Logical AND
- OR Logical OR

Therefore, evaluation is as follows:

<u>Footnote</u>	<u>Value</u>
$5+3*6$	23
$10/(6-4)$	5
$10 < 5 \text{ AND } 4*2=8 \text{ OR } 20 > 10$	TRUE
$4**3/2$	32

Explicit Formats

An explicit format is specified after the calculation rule (if one exists), and is designated as follows:

$$\wedge x$$

The caret (\wedge) specifies that what follows is a format. The x designates the number of places to display to the right of the decimal point. If no decimal places are desired, then a caret should be typed with no value after it. In this case, the associated value would be displayed in integer format.

To display values right-justified within a value area, the format specification should end with a $\wedge .$ For example:

$$\wedge 4 .$$

This format indicates that the associated value should have 4 places to the right of the decimal point, and should be right-justified in the value area.

Variable length fields

If the format is terminated with a minus sign ($-$), trailing blanks will be suppressed when the value is printed (although blanks will still be present on the screen). Thus, " $\wedge 4-$ " as the format specification for a 10 character field with a value of 36.1234 will appear on the screen as:

The answer is 36.1234--- on Monday.

and will be printed as:

The answer is 36.1234 on Monday.

Goto

Goto allows you to go to another location in the current record, to other currently selected records, or to a blank (new) record. Upon selecting Goto, the following prompt will appear:

Goto Current Record: Use cursor keys
Other Records: Next Prev First Last

Current Record

The cursor keys are used to go to different sections of the current record. The up-cursor key moves the cursor to the top of the record. The down-cursor moves the cursor to the bottom of the current record. Left-cursor moves the cursor back a section, and right-cursor moves the cursor forward a section. Moving up or down will not terminate Goto, so you can move the cursor several times until you are on the section that you want. Pressing escape or return will get you back to the File menu.

Other Records

Choosing Next in Goto will cause the next record in the currently selected set of records to be displayed. Choosing Prev causes the previous record to be displayed. Selecting First causes the first record of the currently selected records to be displayed. The Last option is used to add a new record. Upon selecting Last, a new record (blank file definition) is displayed, ready for data entry. Going to another record (other than the last one) does not terminate Goto, so you can view several records without having to reenter Goto each time. Pressing escape or return will get you back to the File menu.

Pset

The Pset (parameter set) option allows you to specify and/or change global formats, line length, tab and margin settings, the field initiator, and auto-blanking. Upon selecting the Pset option, the following menu appears:

Pset: Format Tabs Colon Blanking

Format

Format allows you to change the global format for values. The global format determines the default length of new field value areas. (The length of existing field areas is not affected by a new global format.) The global format also determines how many decimal places are to be displayed, and whether the data in the field should be left or right-justified. This affects all field value areas that do not have an explicit format. (Explicit formats are designated in footnotes.) Upon choosing Format, the following prompt will appear:

Enter format: ^

You may then enter a new global format for values. (The current format is displayed on the status line.) Formats are entered as follows:

Enter format: ^ a.b

The letters 'a' and 'b' represent numbers, where 'a' specifies the total number of character spaces in a field, and 'b' specifies the number of decimal places to the right of the decimal point.

The default format, `^10.2`, specifies that 10 character spaces be allocated to a field, including the decimal point, with 2 places displayed to the right of the decimal point leaving 7 spaces to the left. Optionally, you may specify that the value be right-justified in the field area by ending the format entry with a caret (`^`). A variable length field is specified by ending the format entry with a minus sign (`-`). If the format entry specifies variable length, then all trailing blanks in a field will be suppressed when the field is printed.

Tabs

Upon choosing the Tabs option, the cursor moves to the tab line at the top of the screen, and the following prompt appears:

Tabs: (Left + Set - Clear) Right .Length

You may then set tab stops, margins and line length by changing the tab line. The cursor keys (and tab) position the cursor on the tab line. Any of the following five characters may be typed on the tab line:

- (indicates left margin
-) indicates right margin
- + indicates tab stop
- undoes margin or tab stop
- . indicates physical line length

Tab Stops

The default tab stops are set at columns 5, 10, 15, and so on up to column 75. An existing tab stop is removed by typing a minus sign (–) over the plus (+). A new tab stop is set by typing a plus over minus where the tab stop is desired.

Margins

The default margins are set at columns 1 and 80. When a new margin is typed, the old margin is automatically removed. Changing tab settings and/or margins does not affect existing text, and text outside the margins will not be affected by the entering or editing of text within the margins. This feature can be very useful for editing columns of text.

Margin settings are for temporary entering and editing purposes only. The permanent physical “margins” for the file are column 1 and the column determined by the line length setting. Any text that you want “filled” upon printing must be typed from column 1 to line length, and wrapped on the screen. Any text that does not begin in column 1 and continue to line length will not be filled. (See Print Mode for more information).

Line Length

Line length determines the physical page width (characters per line) for a file. Text may only be entered up to the column before the period on the tab line. In other words, if you want an actual line length of 65, the period should be placed at position 66 on the tab line.

Line length also determines the right margin for field value areas when a file is locked. The margin settings (left and right parentheses) do not

restrict data entry if the file is locked. The period (.) indicating the physical line length should be set only prior to entering text in a file. (If the period is not present on the tab line, line length is set at 80 characters.) **REMEMBER: Resetting the line length after text has been entered may cause unexpected splits and shifts in lines.** If you must alter line length, you may have to manually reedit your file removing extra spaces and rejoining the last word on each line.

Return causes the new settings to become effective, escape returns them to their former values.

Colon

The Colon option allows you to change the field initiator from colon (:) to another character. Upon choosing the Colon option, the following prompt appears:

Enter new field initiator:

At this point, you may enter any single character or symbol, except the caret (^) or a space, to replace the current field initiator, followed by return. (The current field initiator is displayed after COLON: on the status line.) It is recommended that you do not use any character or symbol that you have used, or may want to use, as part of the text of your file definition. Once the field initiator has been changed, typing the new field initiator will cause a field to be created. Typing a colon or any previous field initiator will not cause a field to be created. Also, any existing field initiators will automatically be replaced by the new field initiator. Return confirms the change and escape restores the previous field initiator.

Blanking

The Blanking option allows you to set auto-blanking of new records on or off. Originally, auto-blanking is set on. When a new record is displayed for data entry, all previous field values are blanked. Existing records are not affected. When the Blanking option is selected, the following prompt appears:

Auto-blanking (Y/N)?

Pressing N will turn auto-blanking off. If auto-blanking is turned off, new records are displayed with all the field values from the previously displayed record. This feature allows you to easily try out several sets of assumptions and save them as separate records. Pressing Y will turn auto-blanking on.

Lock

If the current file has not been locked, selecting the Lock option will cause the file to be locked. This will cause all fieldnames and footnotes in the file to be protected. In other words, they may not be typed over or changed in any way until the file is unlocked (using the Lock option). When the file is locked, the file menu changes and appears as shown:

File: Goto Clear Lock Save

When a file is locked, the cursor can only be moved around within a field value area, or from one value area to another. This causes the function of the cursor keys to change slightly while the file is locked.

Tab moves the cursor to the next field. The left and right-cursor keys move the cursor within the field limits, without deleting characters. Pressing the left-cursor key at the beginning of a field will move the cursor to the previous field.

Pressing the right-cursor key at the end of a field moves the cursor to the next field. Return moves the cursor to the beginning of the current field.

Clear

The Clear option is available only when a file is locked. It is used to clear all field value areas. Upon choosing Clear, the following prompt will appear:

Clear fields (Y/N)?

Pressing Y will cause all field value areas to be cleared, and any calculated values (fields with footnotes) will be recalculated. Pressing N or escape will return you to the File menu without altering the record.

If the file is locked when the Lock option is chosen, the file will be unlocked, thus allowing you to edit fieldnames and footnotes. If a file is locked, a Y will appear after LOCK on the status line. An N after LOCK indicates that the file is not locked.

Save

The Save option saves the current record and/or file definition with any changes that have been made. Save also saves status information in the file. The status information that gets saved includes Lock, Blank, Colon, and Format. Therefore, if a file definition is saved with auto-blanking on (Blank: Y, on the status line), auto-blanking will be turned on whenever the file is loaded. Once the record has been saved, the next record in the file will be displayed. **REMEMBER: In order to use Save, you must have specified a new or existing file (using Load) in Disk mode.**

Restart

The Restart option is used to start entering a file from scratch. The current file (if any) is cleared from memory and all settings are returned to their default values. Note that you will no longer have a file loaded (the new current file has not been named and has no space reserved on your data disk). If you are going to create a new file that you want to save on disk, you should use the Load option in Disk mode – Restart is not required.

Select Mode

Select: Nsert Delete Copy

The Select option allows you to enter criteria for selecting a specific set of records from a file. The subset of records that is selected will be used for editing, printing, copying, and sorting. The criteria for selecting records is entered in the same format as a footnote. Upon choosing Select, the current criteria (if any) is displayed in the footnote area, and the Select menu appears at the top of the screen.

You may then enter an expression (similar to a footnote) up to 3 lines long, that specifies the criteria for selecting a set of records from the current file. If an expression has been previously entered, you may type over it or use the editing options to edit it. Pressing return causes the selection criteria to be accepted. Escape will return the criteria that was listed upon choosing Select. Selection criteria may consist of numeric or string expressions, and pattern matching.

Numeric and/or String Expressions

Numeric and string expressions may consist of calculation rules and string matches. Several conditions can be joined together with either a logical AND, OR or NOT. AND specifies that both conditions must be true for the record to be selected. OR specifies that either one, the other, or both must be true. NOT specifies that the condition must not be true. Some examples of such expressions are:

Pay>Rate*Hours AND Overtime='No'

Status='Married' OR Age> 21

Sex='Female' AND Salary>30000 OR Salary >40000

NOT(State='Wisconsin') AND Number=3428

Pattern Matching

In Select you can also compare complete or partial character strings to find related records. If you place two periods (..) before a string, all records with the string as the last characters of the field will be selected. If the periods follow the string, all records with the string characters as the first characters of the field will be selected. If you place two periods on either side of the string (..string..) all records with the string anywhere in the field will be selected. For instance, if you had the following values for the field NAME in your records:

Fred Smith	Henry Smithson
George Smith	Alfred Doyle
Fredrick Coppersmith	Fredrick Jones
Martha Coppersmith	David Johnson
Jane Smithers	Alfred Smythe

Given a selection criteria as shown, the following records would be chosen:

<u>Criteria</u>	<u>Selected Records</u>
Name=..'Smith'	Fred Smith George Smith
Name='Fred'..	Fred Smith Fredrick Coppersmith Fredrick Jones

Name = ..'Fred'..	Fred Smith Fredrick Coppersmith Fredrick Jones
Name = ..'fred'..	Alfred Doyle Alfred Smythe
Name = ..Last.. (Last = 'Copper')	Fredrick Coppersmith Martha Coppersmith

After entering selection criteria and pressing return, the first record in the current file that satisfies the criteria will be displayed.

A special feature of Select is its ability to do a high speed search on the first field created in a file. This is called a 'key search'.

For example, suppose you created a file in which the first field was NAME:. Setting the Selection criteria to:

Name = 'Jones'

will permit a direct jump to only those records with NAME = 'Jones' (rather than reading from the disk to see if they meet this criteria).

Typically, only one or two disk accesses are required to locate a specific record using this technique. **REMEMBER: The Key field is the first field created in a file – NOT NECESSARILY the first field appearing on the screen.** For example, the field NAME might be entered first and then, using Nsert or Copy, other fields may be placed above NAME on the screen. The fact that NAME might then be the third or fourth field does not alter its status as the key field.

REMEMBER: To accomplish a high speed search, you must test for equality of the key field and include no other selection criteria. For example:

Name='Jones' OR Age>21

will not make use of the high speed search feature. Similarly:

Name=..'Jones'

will not use the high speed search (because a more complex operation than just equality is called for).



Print Mode

Print: Disk File Records Setup

Print mode is used to print copies of data disk catalogs, file definitions, and records. The Setup option allows you to control the format for printed output.

Disk

Choosing the Disk option in Print Mode causes the catalog of the currently active disk to be printed. Names of all files on the disk as well as the name of the disk and the amount of storage space left (in characters) is shown.

File

The File option causes the definition of the current file to be printed using the formatting specifications selected in Setup.

Records

The Records option allows you to print all of the currently selected records, or just the currently loaded record. Upon choosing the Records option, the following menu appears:

Records: Selected Current

Selected

The Selected option causes all of the presently selected records to be printed using the formatting specifications in Setup.

Current

The Current option causes the record in memory to be printed using the formatting specifications in Setup.

Setup

The Setup option allows you to control the format and content of printed listings. Upon entering Setup the following form is displayed, indicating the various format options and their current status:

Setup:

Width (255) : 80

Length: 66

Spacing: 1

Left Offset: 0

Fill (Y/N) : Y

Flush-right (Y/N) : Y

Colon (B/D/:) : :

Caret (B/D/ ^) : ^

Top Skip: 2

Bottom Skip: 3

Top Title:

Bot Title:

Footnotes (Y/N/E) : N

Linefeed (Y/N): Y

Continuous (Y/N) : N

Message:

Sort:

Alpha Sort (Y/N) : Y

You can change any of the Setup specifications by typing over them and pressing return. The cursor keys and tab move the cursor from one specification to the next. Pressing escape or return from the first position of a field will get you out of Setup and back to the Print menu. Note that the format specifications are stored as part of the current file definition on disk when the file is Saved.

Width

The Width option indicates how many characters are to be output per line across a page. (Maximum width is 255 characters).

Length

Length specifies the total number of lines per printed page, including Top and Bottom Skip, Top and Bot Title, and footnotes if present. The default page length of 66 lines assumes standard paper dimensions (11 inches long and 6 lines per inch).

Spacing

Spacing determines line spacing. Single-spacing is accomplished by setting Spacing to 1, double-spacing to 2, and so on. Spacing does not affect Top Skip and Bottom Skip. In other words, if Spacing is 2, Top and Bottom Skip are not doubled.

Left Offset

The Left Offset option causes output to be shifted over the indicated number of spaces from the left side of the paper. This option is used to adjust output on a piece of paper. **REMEMBER: Changing the left margin in File mode (after text has been entered) will not cause the text to be shifted.** Note that the Left Offset amount is not subtracted from the amount indicated as page Width.

Fill

Text is output with Fill turned on (Y) or off (N). If Fill is Y, words are collected from the current file until there is no more room left on the output line based on the current page Width. Note that only text that has been typed from column 1 to the line length setting will be "filled". In other words, only text that appears filled from column 1 to line length on the screen will be filled to Width on printed output. Hyphenation is not performed. If Fill is N, the output line consists of the first Width characters of a screen line.

Flush-right

If Flush-right is Y (yes), output lines are adjusted by inserting additional spaces between words until the line is spread out just enough to fill all available line space (line length).

Colon

The Colon option specifies whether field initiators (e.g. :) should be printed as they appear on the screen, or replaced with a blank space, or deleted. B indicates that the field initiators should be replaced with blank spaces when printed. D causes the field initiators to be deleted when printed, and the current field initiator indicates that they should be printed as they appear on the screen.

Caret

The Caret option specifies whether carets (^) should be printed as carets or blanks, or be deleted on printed output. B indicates that the carets should be replaced with blank spaces when printed. D causes the carets to be deleted when printed, and ^ (caret) causes the carets to be printed as they appear on the screen.

Top Skip

Top Skip indicates how many blank lines are to be left between the top of the page and the page title line. If no page title line is specified (see Top Title) then Top Skip indicates how many lines are to be skipped before the first line of text output.

Bottom Skip

Bottom Skip indicates how many lines are to be skipped between the bottom title or last footnote (whichever is last) and the bottom of the page. If neither footnotes nor a bottom title is present, this option specifies the number of lines between the end of the text and the bottom of the page.

Top Title/Bot Title

Titles may appear at the top and/or bottom of every page. They are set by entering the desired titles in Top Title and/or Bot Title in the following format:

'part1' part 2' part 3'

Part1 is output left-justified, part2 is centered, and part3 is right-justified. Either a single (') or double (") quote may be used to separate the three parts of the title. Any of the three parts of a title may be empty (blank). For example, to print a date on the right-hand side of the page, the title would be specified as follows:

' ' '1JUN84'

The character, #, in a title is replaced by the current page number. For example, the title specification:

'12Aug83' Power Plant Proposal' page #'

would generate the following title on output:

12Aug83 Power Plant Proposal page 17

Footnotes

There are three possible responses to the Footnote option:

N - suppresses the printing of all footnotes.

Y - causes the footnotes for the current page to be output at the bottom of the current page. This reduces the effective number of lines available for outputting text by the number of lines of footnotes output on that page, plus 3 blank lines and a line of dashes between the text and footnotes.

E - causes all footnotes to be output in order after the last page of text has been output. This output will begin on a new page titled "Footnotes".

Continuous

Continuous is used to specify if continuous forms or single sheets of paper are being used. If Y appears after Continuous, output will continue uninterrupted page after page until all pages have been printed. If N appears after Continuous, the printer will pause after each page is output to allow a new sheet of paper to be loaded. Printing is resumed by pressing the return key.

Linefeed

Some printers require that the computer send a linefeed character at the end of each line for proper spacing and others do not. If your output is double-spaced when you have not specified double-spacing then this option should be set to N. If your output appears as a single heavy black line (no linefeeds are being generated) then this option should be set to Y.

Message

Message allows you to enter a series of control codes to be sent to your printer. Control codes are used to set available options on your printer, such as compression, underline, etc. The following prompt appears when the Control option is chosen:

Enter control codes:

You may then enter the appropriate numbers separated by commas. (For example: 15,18,22.) These control values will be sent to your printer every time you request output. See your printer manual for the appropriate control codes to use.

Sort

The Sort option allows you to specify an order in which records are to be output. For example, this may be useful for outputting labels by zip code for a mailing or for showing which salesmen are doing the best and which are in trouble in a listing of quota performance.

The Sort expression is entered just as footnote expressions are entered except that the Sort expression must fit on one line. To sort on a single field, such as Name, simply enter the fieldname as the Sort expression. Several fields may be combined arithmetically to produce the amount to be sorted on (for example, QUOTA - SALES + RETURNS).

Since the sorting operation must compute values for all records under consideration, a minute or more may be required before printing begins. Once the sorting has been accomplished, printing takes place at normal speeds.

Alpha Sort

Alpha Sort specifies whether the sorting to be done (if any) will be alphabetic or numeric. If you want to sort alphabetically, Alpha Sort should be Y. If you want to sort by numbers (the sort expression should evaluate to a number), Alpha Sort should be N. For example, if you are sorting by name, Alpha Sort should be Y. If you are sorting by age or salary, Alpha Sort should be N.



**SECTION IV:
APPENDICES**

APPENDIX A: Troubleshooting Guide**Error Messages****Possible Causes**

“BAD DESTINATION DISK”	Destination disk unformattable or not valid data disk for file or record transfer.
“BAD DESTINATION FILE”	Destination filename is invalid (bad drivename, etc.)
“BAD DISK IN DRIVE <i>drive#</i> ”	Program doesn't recognize disk. (Door open, disk removed, etc.)
“BAD FORMAT”	Invalid format entered (e.g. too many decimal places).
“BAD SETUP MESSAGE”	Must be numbers separated by commas.
“BAD SOURCE DISK”	Disk being copied is bad.
“BAD SYNTAX”	General error in footnote. Check placement of operators, number of parentheses, etc.
“CALCULATION TOO COMPLEX”	Footnote calculation rule is too complex.
“CAN'T BE SAME DRIVE AS SOURCE”	Must use 2 drives for copy.
“COPY BUFFER FULL”	No more room in copy buffer to save deleted text.

Error Messages

Possible Causes

“DISK *diskname* NOT IN DRIVE *drive#*”

Removed disk containing current file. Replace the appropriate disk in the specified drive.

“DISK READ ERROR”

Error in reading disk. Check drive door (must be closed) and try reinserting disk.

“DISK WRITE ERROR”

Error in writing to disk. Try same procedure for disk read error (see above).

“FILE TOO LARGE”

File definition exceeds size limits.

“FOOTNOTE TOO LARGE”

Probably too many numbers or string too long in footnote.

“ILLEGAL FIELDNAME”

More than one word before field initiator (:) in footnote.

“INSERT PROGRAM DISK IN DRIVE 1”

Need program disk to continue. (Is door on drive closed?)

Error MessagesPossible Causes

“INVALID COMPARISON”

.. on both sides of string comparison (e.g. ..name=last..)

“INVALID SELECT EXPRESSION”

Result is not boolean value (true or false). Could be undeclared identifier.

“INVALID STRING OPERATION”

.. used with no equal sign (e.g. name..).

“NO FIELDS”

Attempted to Lock file with no fields.

“NO FIELDS MATCH”

No fieldnames in current file exist in destination file. Fieldnames must match in order for data to be copied.

“NO FILENAME -
MUST SAVE FROM DISK MODE”

Attempted to use Goto or Save without having named the current file. Go to Disk mode and use the Save option.

“NO FILE LOADED”

Attempted to enter Select or Copy file or records.

“NO FILE TO LOAD”

Attempted to Load a blank entry in disk catalog.

“NO FILE TO PRINT”

Must Load file to be printed.

Error Messages**Possible Causes**

“NO FILE TO REMOVE”	Attempted to Remove a blank entry in disk catalog.
“NO FILENAME FOR SAVE”	Attempted to Save to a blank entry in disk catalog without entering a filename.
“NO PRINTER ATTACHED	Attempted to print disk, file or records without a printer.
“NO ROOM”	No memory room left for Nsert or Copy.
“NOTHING TO BACK OVER”	Attempted to back up past start position in Nsert or Delete.
“OUT OF DISK ROOM”	Not enough room on data disk to Save or to continue editing. Remove any non-essential files from the disk.
“PROGRAM DISK IN DESTINATION DRIVE”	Program disk is in drive to be copied to.
“RECORD TOO LARGE”	No more room for footnotes or values.
“TOO MANY FIELDS”	100 fields already exist.
“UNCLOSED QUOTE”	Quote missing in footnote.



APPENDIX B: Maximum Capacities

Disk - A single disk may have up to 60 files depending on file size.

File - A single file may have up to 1000 records depending on available disk capacity. A file definition may be as large as a disk.

Record - Records may have up to 100 fields totalling 3500 characters of storage less:

- 10 characters per field
- length of fieldname
- 1 character for each operator or fieldname in each footnote
- constants and strings used in footnotes

Typically, 2000 characters of storage are available for record storage.

Field - Fields may contain any printable characters except the field initiator (usually a colon), and the caret (^). Fields may be up to 3500 characters long.

Footnote - Footnotes may be up to 240 characters long.

Values - Values may range from -9999999999999999.999999 to 9999999999999999.999999 (99 trillion). Although up to 20 digits are maintained in all calculations, multiple calculations may result in a small cumulative roundoff error. In most applications this will be undetectable.



APPENDIX C: Glossary of Terms

Catalog - A directory of files on a disk.

Constant - A constant is a value that is always the same – it is not dependent on other values.

Currently Active - The most recently selected drive, file or record.

Cursor - A small square that indicates your current position on the screen.

Cursor Keys - Keys used to move the cursor up, down, left, and right. See your Key Card for more information.

Data Disk - A disk containing JACK files.

Field - Refers to either a fieldname (see below), or the data entry area following a fieldname.

Field Initiator - A character, other than a caret (^), used to denote the beginning of a field.

Fieldname - The set of characters preceding a field initiator.

File - A file is a collection of records all with the same format and stored together under one filename.

File Definition - A file definition consists of fieldnames, footnotes, and any text that is not part of a field value area.

Filled - Text is called "filled" if the first word on a line cannot fit at the end of the previous line. The actual filling is done by taking text from the next line until no more words will fit on the current line of output.

Flush-right - Text is Flush-right if all of the lines end exactly at the right margin (except for the end of a paragraph). Most of the text in this manual is flush-right.

Footnote - A footnote is always associated with a fieldname. It designates either a calculation rule or a constant value, and optionally a format for the field.

Master Disk (Program Disk) - The disk containing the JACK program.

Menu - A list of options displayed at the top of the screen.

Prompt - A message or question that appears on the screen and waits for your response.

Record - A record is made up of the file definition and any field values.

String - A string is a list of characters, such as a word or sentence, enclosed in quotes.

Word wrap - Word wrapping is a feature that allows you to type continuously without having to use the return key. If you type a word that is too long to fit at the end of a line, the word is automatically "wrapped" to the next line.

Write-protect - A disk is write-protected by placing a small square sticker (called a write-protect tab) over the notch in the side of the disk. If a write-protect tab is on a disk, the disk can only be read and not written on.

APPENDIX D: Common Calculation Rules

Simple Calculations

PERCENT: $100 * \text{Amount2} / \text{Amount1}$

%CHANGE: $100 * (\text{Amount2} / \text{Amount1} - 1)$

%MARGIN: $100 * (1 - \text{Cost} / \text{Price})$

%MARKUP: $100 * (\text{Price} / \text{Cost} - 1)$

PRICE: $100 * \text{Cost} / (100 - \% \text{Margin})$

PRICE: $\text{Cost} * (100 + \% \text{Markup}) / 100$

IF THEN ELSE Calculations

PAY: IF Hours > Regular THEN Pay.rate * (Regular + Overtime.rate * (Hours - Regular)) ELSE Hours * Pay.rate

DISCOUNT: IF Amount > Group5 THEN Rate5 ELSE IF Amount > Group4 THEN Rate4 ELSE IF Amount > Group3 THEN Rate3 ELSE IF Amount > Group2 THEN Rate2 ELSE Rate1

TAXRATE: IF Income > 100000 THEN .75 ELSE IF Income > 50000 THEN .55 ELSE IF Income > 40000 THEN .45 ELSE IF Income > 20000 THEN .30 ELSE .15

SMALLER: IF Amount1 < Amount2 THEN Amount1 ELSE Amount2

Future value of an investment with compound interest**FUTURE.VALUE: PRESENT.VALUE* (1+RATE)**PERIODS**

Example: Suppose you deposit \$1000 in a savings account where the interest is compounded annually at 7%. What will the balance be at the end of four years?

$$\text{PRESENT.VALUE} = \$1000$$

$$\text{RATE} = .07$$

$$\text{PERIODS} = 4$$

$$\text{FUTURE.VALUE: } 1000 * (1 + .07)^{**4} = 1310.80$$

Present value of a future return**PRESENT.VALUE: FUTURE.VALUE* (1+RATE)**(-PERIODS)**

Example: Find the present value of a promissory note which pays \$15000 on a date which is due 6 years from now. Assume a time value for money of 12% per year.

$$\text{FUTURE.VALUE} = 15000$$

$$\text{RATE} = .12$$

$$\text{PERIODS} = 6$$

$$\text{PRESENT.VALUE: } 15000 * (1 + .12)^{**(-6)} = 7599.47$$

Compound interest rate calculation

$$\text{RATE: } (\text{FUTURE.VALUE}/\text{PRESENT.VALUE})^{(1/\text{PERIODS})} - 1$$

Example: Find the annual interest rate (compounded annually) at which 20000 will grow to 45000 in 8 years.

$$\begin{aligned}\text{FUTURE.VALUE} &= 45000 \\ \text{PRESENT.VALUE} &= 20000 \\ \text{PERIODS} &= 8\end{aligned}$$

$$\text{RATE: } (45000/20000)^{(1/8)} - 1 = .106682$$

The result, .106682, means that the desired interest rate is 10.6682 percent.

Future value of a fixed payment investment

$$\text{FUTURE.VALUE: } \text{PAYMENT} * ((1 + \text{RATE})^{**}\text{PERIODS} - 1) / \text{RATE}$$

Example: If you invest \$100 per month to earn 10% per year interest, how much will you have on deposit at the end of 20 months?

$$\begin{aligned}\text{PAYMENT} &= 100 \\ \text{RATE} &= .10/12 = .008333 \\ \text{PERIODS} &= 20\end{aligned}$$

$$\text{FUTURE.VALUE: } 100 * ((1 + .008333)^{**}20 - 1) / .008333 = 2166.55$$

Size of loan based on given constant payment

PRESENT.VALUE: $\text{PAYMENT} * (1 - (1 + \text{RATE})^{(-\text{PERIODS}))} / \text{RATE}$

Example: Suppose you could afford a monthly interest plus principal payment of \$900 for a mortgage on your home. Assuming an interest rate of 15% for a 30 year mortgage how much could you obtain?

$$\begin{aligned}\text{PAYMENT} &= 900 \\ \text{RATE} &= .15/12 = .0125 \\ \text{PERIODS} &= 30 * 12 = 360\end{aligned}$$

$$\text{PRESENT.VALUE: } 900 * (1 - (1 + .0125)^{(-360)}) / .0125 = 71177.54$$

Mortgage payment calculation

PAYMENT: $\text{PRESENT.VALUE} * \text{RATE} / (1 - (1 + \text{RATE})^{(-\text{PERIODS}))}$

Example: Suppose you want to obtain a \$75000 mortgage on a home you wish to purchase. For a 25-year, 14% mortgage how much will your monthly payment (of interest and principal) be?

$$\begin{aligned}\text{PRESENT.VALUE} &= 75000 \\ \text{RATE} &= .14/12 = .011666 \\ \text{PERIODS} &= 25 * 12 = 300\end{aligned}$$

$$\text{PAYMENT: } 75000 * .011666 / (1 - (1 + .011666)^{(-300)}) = 902.77$$

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*** ERRATA ***

The description of the Message option on page 106 of the JACK reference manual is incorrect. The first two sentences are valid, but the remainder of the description should be replaced with the following text:

To send control codes to your printer, simply move the cursor to the Message field (option) and enter the appropriate ascii decimal values separated by commas. For example:

15,18,22

Press <return> after entering the values. JACK will not accept anything other than numbers for the Message option, so you must look up the correct ascii decimal values for the control codes that you want. See your printer manual for the appropriate control codes to use, and their ascii decimal equivalents.

JACK Technote #1

^ and @ Characters, 80 Column Cards,
Upper and Lower Case, and Shift Key Mods

^ and @ Characters

If you find you are unable to type the caret (^) using JACK, try using <CTRL Q> (hold down the CTRL key and press Q). If you can't type the at-sign (@), try using <CTRL O> (that's the letter O). These two control codes have been set aside as alternates for ^ and @ in JACK.

80 Column Cards

If you have an 80 column card, it must be in slot #3 in order to work properly with JACK. For information about using your 80 column card with JACK, consult the 80 column card's manual and pay particular attention to the sections on Apple Pascal (that's the language JACK is written in). Here is some specific information on using 80 column cards with JACK:

- 1) Some cards (like the Videx Videoterm) use an up-arrow for the caret. JACK will accept this as a caret, so don't panic.
- 2) Some 80 column cards (such as Smarterm) use the escape key for special purposes. It may be necessary to press <ESC> twice to escape from a JACK function.
- 3) The Sup'R'Term 80 column card uses <CTRL N> (Nsert) and <CTRL T> (up-cursor) for its own purposes. If you have a Sup'R'Term, you must use <CTRL X> for Nsert and <CTRL Y> for up-cursor.

IMPORTANT - JACK will not work if you have a card other than an 80 column card in slot #3.

(over)

Upper and Lower Case on the Screen

If you have an 80 column card with upper and lower case characters, JACK displays the characters on the screen in upper and lower case. If you are using JACK with the normal 40 column screen, the letters are displayed a bit differently. When you first start JACK, all the letters you type are upper case. After you press <CTRL E>, JACK uses reverse video letters (black letters on a white background) to represent upper case and normal letters for lower case. Consult your Key Card to learn how to shift between cases.

The Shift Key Modification

There is a standard modification to the Apple][that involves attaching a wire from the shift key on the keyboard to one of the game I/O ports. If you have this modification, the following is true:

- 1) The normal control character sequence to get upper and lower case still apply. In particular, <CTRL E> lets you type in lower case.
- 2) Once you have pressed <CTRL E>, pressing the shift key with any alphabetic character will get you the upper case letter.
- 3) To get the caret (^) type <CTRL-SHIFT-N> (hold down the CTRL key and the SHIFT key, and press N). To get the at-sign (@) type <CTRL-SHIFT-P>.

Consult your Apple dealer for directions on making the shift key modification to your Apple][.

The Incredible JACKTM

APPLE II

KEY CARD

Throughout this Key Card, whenever a <CTRL> and a character are present together it is meant that the two keys be pressed simultaneously. For example, <CTRL A> indicates that you hold down the Control (CTRL) key WHILE pressing the letter A.

<u>Key</u>	<u>Function</u>
<CTRL opt>	MENU SELECTION – Menu options are chosen by holding down the control key while pressing the first letter of the desired option.
<CTRL A> **	ALTERNATE SCREEN – Use to flip from the left half of the screen to right and back.
<CTRL Z> **	SCROLLING – Use to scroll horizontally across the screen. Automatically jumps to the second screen when necessary. Typing <CTRL A> turns <CTRL Z> off.
<left arrow>	LEFT-CURSOR – Moves the cursor one space to the left.
<right arrow>	RIGHT-CURSOR – Moves the cursor one space to the right.
<CTRL T>	UP-CURSOR (Top) – Moves the cursor up one line.
<CTRL B>	DOWN-CURSOR (Bottom) – Moves the cursor down one line.
<CTRL I>	TAB (Indent) – If you do not have a TAB key, substitute <CTRL I> throughout the documentation and program.

<CTRL E> ** **SHIFT-LOCK** – Typing <CTRL E> initially puts you in lower case mode. After typing <CTRL E> again, all subsequent letters are in upper case (inverse video). Typing <CTRL E> again will return you to lower case.

<CTRL W> ** **WORD-SHIFT (1 letter)** – Used to capitalize a single letter. After typing <CTRL W>, the next character, assuming it's a letter, will be in upper case. All subsequent characters are in lower case.

<ESC> **ESCAPE** – Used to 'undo' whatever you have done, or to return you to the previous menu without saving what you have done.

<RETURN> **RETURN** – Causes entries to be accepted.

**If you have an 80 column display these keys do not apply to you. Consult your operating manual to use these functions.

HARDWARE REQUIREMENTS

JACK runs on an Apple II computer with:

- 48K memory and a 16K Language or Memory Card (for a total of 64K memory). If you do not have either card the program will not boot.
- A video monitor or TV set.
- 2-4 disk drives.
- A serial or parallel printer interface and printer in slot 1.

