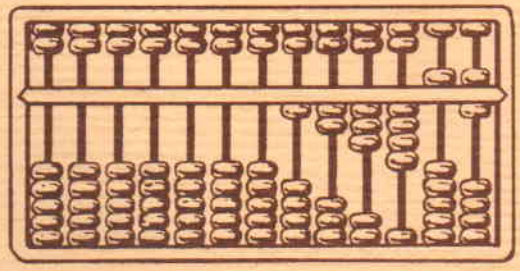
DATA PERFECT™



COMPUTER BASED SOFTWARE

LJK T.M. INC.

ENTERPRISES

Saint Louis, Missouri

D A T A P E R F E C T <tm>

DATA BASE FOR THE

ATARI 400 AND 800 COMPUTERS

COPYRIGHT 1981, 1982

L J K ENTERPRISES INC., INC.
POST OFFICE BOX 10827
SAINT LOUIS, MISSOURI 63129
[314] 846-6124

VERSION 1

DATA PERFECT <TM>

REQUIREMENTS: You may use either an Atari 400 or Atari 800 computer with this program. It requires at least on disk drive to be used. You should have a minimum of 32K of memory with the computer.

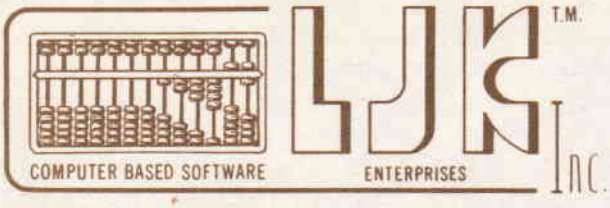
-NOTICE- LJK ENTERPRISES, INC. MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THE OPERATION OF THIS PROGRAM, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. LJK shall not be liable for error or omission contained in this manual or for accidental or consequential damages in connection with the furnishing, performance or use of this material. Neither is any liability assumed for damages resulting from the use of the information contained herein.

LETTER PERFECT is a Trademark of LJK Enterprises, Inc.
DATA PERFECT is a Trademark of LJK Enterprises, Inc.
ATARI is a trademark of Warner Communications Co, Inc.
FULL VIEW 80 is a Trademark of Bit 3 Computers, Inc.

D A T A P E R F E C T A T A R I

PROGRAM REGISTRATION FORM

SEND FORM TO:



P.O. Box 10827 St. Louis, Mo. 63129

PROGRAM NUMBER 1- 2929

DATE OF PURCHASE _____

STORE NAME _____

ADDRESS _____

CITY, STATE _____

ZIP CODE _____

PURCHASER _____

NAME _____

ADDRESS _____

CITY, STATE _____

ZIP CODE _____

COMMENTS: _____

(MAIL WITHIN 10 DAYS OF PURCHASE)
THE OPPOSITE SIDE MUST BE SIGNED

(over)

THIS SIDE MUST BE SIGNED TO REGISTER YOUR PROGRAM

SOFTWARE LICENSE AGREEMENT

LJK Enterprises Inc. (hereafter referred to as LJK) has sold or will sell to the undersigned ("purchaser") magnetic diskettes containing original data and programs expressed and arranged in electronically coded and magnetically stored form. LJK has sold or agreed to sell the diskettes only upon the condition that the purchaser acknowledge and agree to the following. By signing the Agreement, the purchaser so acknowledges and agrees.

1. The purchaser understands and acknowledges that the data and programs recorded on the diskettes are copyrighted original works of authorship and are unique proprietary material of LJK.

2. The purchaser will not copy or reproduce any portion of the data or programs recorded on the diskettes, nor allow others to do so.

3. The purchaser will not create or prepare any derivative materials from the data and programs recorded on the diskettes, will not translate such data and programs into another computer system, and will not create any combination which includes any portion thereof, nor allow others to do so.

4. The purchaser will not sell, transfer, distribute, or display to the public any copy or reproduction of the data or programs recorded on the diskettes or any materials derived therefrom or translation or adaptation thereof to any person or organization, nor allow others to do so.

5. The purchaser acknowledges and agrees that the purchaser will be liable for damages to LJK for any violation of this Agreement.

6. The purchaser acknowledges that LJK makes no warranty or representation whatsoever with respect to the data and programs recorded on the diskettes and that neither LJK nor any author thereof will be responsible for error or omissions therein or erroneous or inaccurate application of any results from the use thereof.

LJK ENTERPRISES INC.

PURCHASER_____

DATE_____

This manual is divided into sections which include each option on the main menu in addition to this introduction and the appendix. An index is included at the end of the manual for reference purposes.

READ THIS INTRODUCTION BEFORE LOADING THE PROGRAM. THE INTRODUCTION CONTAINS THE INFORMATION THAT WILL MAKE THE USE OF THE PROGRAM EASIER TO OPERATE AND UNDERSTAND. INSTRUCTIONS ON HOW TO LOAD THE PROGRAM ARE FOUND AT THE END OF THIS INTRODUCTORY SECTION.

The program is on a single diskette and **ONCE LOADED THE PROGRAM SHOULD BE REMOVED FROM THE DISK DRIVE**. A single load program, such as DATA PERFECT, is loaded into memory upon loading and is not necessary for any of the operations that are available in using the program. You will create two diskettes for each database you create, a source and and backup diskette. The source diskette will always be placed in drive #2 and the backup in drive #1 on a two drive system. If you have only one drive you will have to remove the source diskette and replace it with the backup diskette in those operations that require two drives. You can perform all of the operations of the program with one drive, you must physically swap the source and backup diskettes as directed in the program.

STATUS LINES

The top line of the screen will always show what is referred to as the "STATUS" line of the program. The status line is a constant reminder of the name of the file, the date your are currently entering, and the record number of the file. If no filename appears after the word "FILE:", then there is no file loaded in memory. A file that had the name "SAMPLE", and was created on December 31, 1981 would have a status line that would appear as follows upon being loaded:

File: SAMPLE Date: 12/31/81 Rec: 0

The file name when created should not exceed 12 characters in length and only 8 characters maximum will be displayed on the status line. The record number is expressed as "REC:." This is the current record number and may often times be a meaningless number in that it will be the result of a record number plus one as a result of a search through the entire disk file. It is handy during searches, adding records, and editing records to show the user where they are located in terms of the length of the file, i.e. front, middle, or end. During the creating of a file the "REC:" keeps a total of the number of single characters that are being used in the data base. The more characters that are used then the fewer number of records you will be able to place on a single diskette. There is a maximum of 511 single characters that can be used in a single record.

KEYBOARD EDITING You have several editing commands for your use with DATA PERFECT. Editing commands enable you to do things in an easier and quicker manner for greater ease of operation. You may use these commands any time you are creating a record, entering data, or editing data. Following is a list of these editing commands, with an explanation of each in the following section.

CTRL	+	A	Accept input line up to cursor location.
CTRL	+	B	Go to the beginning of that line.
CTRL	+	Del	Delete a character at cursor location.
SHIFT	+	Del	Delete a character at cursor location.
CTRL	+	E	Go to the end of the current input line.
CTRL	+	F"n"	Find the next occurrence of "n".
CTRL	+	I	Insert a character at cursor location.
SHIFT	+	I	Insert a character at cursor location.
CAPS/LOWR			Shift lock or unlock toggle.
RETURN			Accept line input on both sides of cursor.
TAB			Tab to next tab position.
CTRL	+	Clear	Erase all on current line and start all over.
SHIFT	+	Clear	Erase all on current line and start all over.
BREAK			Break the operation and return to menu.
BACKS			Delete previous character typed.
<-			Move the cursor back one space.
->			Advance the cursor to the right one space.

When a single character is asked for, an example would be the "Y"es or "N"o on loading a file, the computer can be in either upper or lower case and the program will accept the answer even though an upper case "Y" and "N" is shown as the correct response.

When a line of input is asked for, for example when entering the first name of an individual in a record, the program will accept an entire line rather than grabbing a character at a time, and checking its validity as is common in most data bases. It is felt that the practice of grabbing each character is not in the best interest of the user. While it does protect the user from entering an invalid character, it also prohibits him from editing data before it is accepted into the data base. This program allows the user to enter any number of input as an expression and allows several input keyfunction. This allows for high speed input of data.

CTRL A - Accepts all information up to cursor location and erases all information that follows it in location. A good example of this can be found in the following example:

Address: 5811 First Avenue Street

Above is a example of the typical type of information you might have in a a data base. It is a field called "Address:." If we were editing this field in a record because the word "Avenue" should not have the word "Street" following it we could use the [CTRL] [A] editing command. First, we could tab over to, or use the advance cursor key [->], to move the cursor to the space between the two words. We could then perform the [CTRL] [A] function remembering that it accepts line input up to the location of the cursor. In as much as the cursor is located between the words "Avenue" and "Street", it will accept the first part of the address (5811 First Avenue) only. The rest of the input line (i.e. Street) will be erased. If we had pressed [RETURN] with the cursor in the same location we would have accepted the entire input line.

CTRL B - Returns the cursor to the beginning of the line. This allows one to move quickly from any location in the input line to the beginning of that line. Consider the following example:

Address: 5899 First Avenue

Lets consider a situation where we are entering data into a typical record. In the proceeding "Address" field lets assume that we had entered the information and were preparing to press [RETURN] to go to the next field when we noticed we had incorrectly entered "5899" instead of "5811" which was the correct address. Instead of holding down the backcopy [<-] key, we could instead move immediately to the beginning of the line with the [CTRL] [B] command, move over two spaces with two forward copy, [->], keystroke and type in the correct numbers. Pressing the [RETURN] after editing the address would accept the information, as is, and move to the next field.

BREAK - Holding down the [BREAK] key will cause a break to occur and return the user to the menu section of the particular part of the program that you are located. If you were in the middle of editing a file and decided for any reason that you wanted to abort the operation you could use this system break operation to return to the "UPDATES" menu. Any time you want to abort an operation you should use the [BREAK] as the safe way to abort the operation. When in menu select mode, a break will function as a return and perform the select option.

CTRL Del or SHIFT Del - Holding the [CTRL] key and then pressing the [Del] key will cause the program to delete a character at the cursor location. Let us consider an example of an address field in a record as in the example following:

ADDRESS: 5811 Firsst Avenue

As you can see in this example the word "Firsst" has an extra "s" in it. By placing the cursor on the first "s", and then holding down the [CTRL] key and then pressing the [Del] key you will delete the "s". This is much easier and faster than retyping the entire line. By pressing [RETURN], even though the cursor is resting in the middle of the line, you will then accept the entire line of input and move to the next field.

CTRL E - This command allows you to move to the end of the input line with one simple key combination. If you were at the beginning of a line and wanted to move quickly to the end of the line for editing you could use this command, i.e. hold down the [CTRL] key and then press the [E] key. Consider the following example:

ADDRESS: 5811 First Avenuue

As you can see the word "Avenuue" has an extra "u" in it which you would want to edit out. During the editing operation you will move to this address field, press "S" to indicate you want to edit this selection and then find the cursor located on the "5" of the address field. To move quickly to the end of the field, you hold down the [CTRL] key and then press the [E] key. The cursor will now be resting at the end of the input line. Use the backcopy key two times to move the cursor back over to the unnecessary "u" and perform the [CTRL] [D] operation to delete the unnecessary "u." After making this correction, pressing the [RETURN] key will accept the information, as is, and continue with the editing.

CTRL F - This command allows one to "find" the first occurrence of a letter in a file with ease. Consider the following example:

ADDRESS: 5811 First Avenuue

In this address field the word "Avenuue" has two "u's" in it. During the editing process you would find the cursor on the "5" upon starting the editing procedure. You could move to the first "u" by holding down the [CTRL] key, pressing the [F] key and then pressing the [U] key. You would move the cursor laying on the first "u", in this case the extra one. You could then delete the extra "u" with the [CTRL] [Del] command and press [RETURN] to indicate to the program you had complete the editing function on this particular field.

<- - Holding down the [CTRL] key and then pressing the [\] key is a non-destructive backspace key, or backcopy key.

CTRL Ins or SHIFT Ins - This key combination allows one to insert a character at the cursor location. This can be used to create an extra space in the middle of a line and editing a word without typing the entire line. This is demonstrated in the following example:

ADDRESS: 5811 Firt Street

As you can see, the word "Firt" has the character "s" left out and the word should be "First." In order to edit this address field, you would first want to move the cursor to the "t" and add an "s". The easy way to move to the "t" is with the [CTRL] [F] [T] command sequence. This command sequence says, "find the first occurrence of the letter 't'." After initiating the command sequence, you will move the cursor upon the letter "t." You should then hold down the [CTRL] key and then press the [Ins] key and insert a blank space. You should then type in the character "s," and your editing will be complete.

CAPS/LOWR - Pressing the CAPS/LOWR key will place you in lower case mode (this is the default case). Holding down [SHIFT] and pressing CAPS/LOWR will place you in

upper case mode. Holding down [CTRL] and pressing CAPS/LOWR will place you in control lock mode. It is generally not desirable to be in control lock mode, as only a few control keys are ever required.

TAB - Holding down the [TAB] key will cause you to tabulate over to the next multiple of 8 column. If you were two spaces past the previous tab location it would only go over 6 spaces to the next tab location. The tab locations are fixed at every 8 spaces and you cannot go farther than the next tab location.

CLEAR - This command can be used to discontinue the input of information, erase the information already entered, and return you to the beginning of the field for reentering data. Let's assume for illustration that you were entering the following information into an address field:

ADDRESS: 5811 First Avenue N.E. _

This example shows an address field, "5811 First Avenue N.E.," and the cursor located at the end of the field. You have entered the field and are about to press [RETURN] to accept the field when you realize the you have entered in the wrong address, and that it should be "31144 East 42 nd. Street." The information you have entered is completely unusable and simple editing will not correct the entry. The easiest way to erase the entered information is to go to the beginning of the field and reenter the data with the [CLEAR] key combination. It will do just this, erase the current entry, and move the cursor to the beginning of the field for reentry.

Editing of formatted numbers may cause some confusion initially but will become automatic after a short period of time. It is important to remember, that pressing [RETURN] will accept the entire line of input regardless

of where the cursor is located on the input line. If you were changing numbers in a dollar field, pressing [RETURN] would cause the entire field to be saved and could cause some erroneous information to be saved. It is a good practice to get into the habit of using the [CTRL] [A], copy to the cursor position, to end an input function. This eliminates the possibility of entering unwanted information and the act itself becomes second nature in a short period of time.

In this program, spaces are ignored in any input entered except in the case of strings. When the spaces are entered prior to the entering of input data prior to the string itself they are entered as blank spaces, but they are left intact when entered as part of the data input when entered in that fashion. Trailing spaces are never removed and will be displayed as blank spaces on the video screen.

LOADING THE PROGRAM NEVER CUT A NOTCH IN THE DISKETTE OR REMOVE A WRITE PROTECT TAB IF THERE IS ONE. No data will ever be written on the program diskette. You should first with the power off, remove any cartridges that may be in the machine. The program will operate with the cartridges in there but will not be able to take advantage of that memory space. With the power off on the Atari and the drive door open, turn the power on to the disk drive. When the drive has stopped spinning and the in-use light goes out, place the program disk in the drive and turn on the computer. If the message BOOT ERROR appears on the video screen, try the process over from the start using the other side of the diskette. WHEN THE PROGRAM IS SUCCESSFULLY LOADED, YOU SHOULD REMOVE THE PROGRAM DISKETTE FROM THE DRIVE. This is a single load program and the program disk will not be required again.

The following message will now be on the screen:

```
Options: numbers
Command: Drive: _
```

REMOVE THE PROGRAM DISKETTE FROM YOUR DRIVE AT THIS TIME. THE ENTIRE PROGRAM HAS BEEN LOADED AND YOU CAN PUT THE PROGRAM DISKETTE IN A SAFE PLACE. LEAVING THE DISKETTE IN THE DISK DRIVE INCREASES THE CHANCES OF ACCIDENTALLY ERASING THE PROGRAM DISKETTE.

The question asks you to indicate if you have a one or two drive system. Enter the correct number. You do not have to press [RETURN]. If you have two drives, drive #2 will always be reserved for the source or original diskette and drive #1 will be reserved for the backup diskette. If you have a single drive you will have to follow directions and swap source and backup diskettes as directed. After entering the the number of drives the following question will appear on the screen:

```
Options: -Input-
Command: Date: _
```

At this point you should enter the month, day, and year. You should enter them in the format month/day/year. The month must be a number between 1 and 12 or you will get an error message displayed. The day cannot be larger than 31 without getting an error message. The year must be entered as a two digit number or it will generate an error message (i.e. 1982 should be entered 82). When entering the date, the decimal numbers representing the date can be separated by any character other than a number (i.e. periods, commas, backslash or even alpha characters). Regardless of how you enter the date, it will always be displayed in the dd/mm/yy format, with slash separating the number representations.

The main menu of the program will now be displayed as shown in the following screen representation. Each section of the manual that follow deals with each of the menu items in the order they are displayed on the main menu.

```
File:SAMPLE    Date: 12/31/81      Rec:Ø

Options: < > CR
Command: -Select-

       Main Menu
       Drive: 2

=>   Load a Data Base          <=
     Create a New Data Base
     Updates
     Utilities
     Reports
     Mailing Labels
     Change Drive, Date
     Change Drive
     Quit

        DATA PERFECT
```

SECTION I - LOADING A DATA BASE

1.1 Data Perfect has been loaded into the computer you will be on the section of the program that is referred to as the main menu. You desire to load a data base file into the computer so that you may do some editing or adding of records. The following pages will describe the process of loading a data base file into the computer.

```
File:SAMPLE    Date: 12/31/81      Rec:Ø

Options: < > CR
Command: -Select-

      Main Menu
      Drive: 1

=>    Load a Data Base          <=
      Create a New Data Base
      Updates
      Utilities
      Reports
      Mailing Labels
      Change Drive, Date
      Change Drive
      Quit

      DATA PERFECT
```

1.2 You will have two diskettes for each data base. One diskette will be the source diskette and one will be the backup diskette. If you have two drives you should place the source diskette in drive # 1 and the backup diskette in drive #2. If you only have one disk drive you will have to place the source and backup alternately in your drive when you want to do any backup procedure. For the loading process, it will be necessary to place the source diskette your drive. After placing the diskette in the disk drive you should press [RETURN] as directed on the main menu. You would use the greater than key, [>], to move down the main menu and the less than key, [<], to move up the main menu and the [RETURN] key (or the BREAK key) to indicate your selection.

1.3 Pressing [RETURN] will cause one of two things to happen. You will either have to verify the loading procedure or go directly to the loading procedure. The verifying is caused when you have been working on another data base and the program verify the fact that you want to erase that data base before you attempt to load another one. If you had a data base file in memory you would have to indicate to the program that it was "ok" to erase that data base file. This verifying process will be asked in the following manner:

```
Options: [Y]es, [N]o
Command: -Verify-


Erase This Data Base?
```

1.4 The choices are [Y] for "YES," and [N] for "NO." Answering "NO" will cause the loading procedure to be aborted and return you to the main menu. Pressing [Y] for "YES" will allow you to proceed to the second step of loading a data base. This screen is represented below and instructs you to insert the data base diskette you desire to load into the disk drive.

```
Options: [Y]es, [N]o
Command: -Verify-

Drive: 2


Insert Disk
```

1.5 You should insert the data base diskette that you want to load at this point. You should then press the [RETURN] key in order to cause the loading procedure to continue. Data Perfect has been designed to offer as much help as possible in the loading procedure. Next, you will be allowed to preview the data base and verify that it is the data base you want to load.

1.6 This section allows you to view the data base file you have just loaded and verify you want to load it. This is for those individual who will have several data bases. By viewing the format information, which includes the name of the data base, you will be allowed to confirm that this is the data base you did desire to load. The status line will have the name of the data base filled in after the name location and the screen mask will be the same as if you were going to add data to the data base.

```
File: SAMPLE   Date:12/31/81  Rec:Ø

Options: CR
Command: Press RETURN _

KEY _ _ _ _ _   DATE: D _ _ _ _ _ _ _ _ _

NAME: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ADDRESS: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

CITY: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

STATE: _ _   ZIP: _ _ _ _ _
```

1.7 Your only option is to press [RETURN] or do a break operation (BREAK). The break operation will cause you to abort the load and go back to the main menu. Pressing [RETURN] will allow you to continue the verifying procedure by getting some additional information about the data base file. That information includes the name of the data base (status line), the number of fields in the data base, the length of a record, the maximum number of records that would be allowed under this format, the number of records that has been entered into the data base, the number of active records that have been currently entered into the data base, the date the data base was created, the date the data base was last updated, and the number of formulas's that are in the data base. You will be asked to indicate with a [Y]es or [N]o if you want to "LOAD THIS DATA BASE."

```
File: SAMPLE   Date:12/31/81  Rec:0

Option: [Y]es, [N]o
Command: -Verify-

Fields: 5
Record length: 178
Max # of Rec: 782
# of Rec: 382
Active Rec: 380
Created: 07/04/81
Updated: 12/17/81
Formula: 0

Load this Data Base?
```

1.7.1 The "# OF REC: 382," and "ACTIVE REC: 380" are not the same. In this example, it would indicate that two records have been deleted. Deleted records are kept but can be removed at the user's option. If you have a check register for example, and were using one of the fields to keep the check numbers, you would not want to remove the deleted records. Removing the deleted record (for a voided check), would cause the check numbers to be out of order. The above example shows that two records have been delete. To remove deleted records you should see the utilities section under "PACK A DATA BASE."

1.8 Press [Y] if this is the correct data base and the computer will cause the data base to be loaded and you will be returned to the main menu. If this is not the data base you want to load press [N] for "NO," and continue the loading procedure over again with a different data diskette that you think is the correct one. When at the main menu, the only difference you will note in the main menu is that the name of the file you have just loaded will be in that spaced reserved for the name.

2.0 The CREATE A DATA BASE option is the second selection on the main menu of DATA PERFECT. In this menu level you will create your screen mask for the data base format you want. You will have the opportunity of creating a data base in this section, design the screen mask, (the way the screen will look), and preparing the information you want organized in the way that will be most meaningful to yourself.

2.2 Move the arrows to this menu selection and press [RETURN]. The screen will do one of two things. If a different data base file has previously been loaded it will "VERIFY" the fact that you want to erase that data base and start a new operation. This is a "fail-safe," or safety feature that prevents you from accidently erasing important information. This "verify" operation will appear as follows on the screen.

```
File:SAMPLE Date:12/31/81    Rec:0

Options: [Y]es,[N]o
Command:  - Verify -



Erase Data Base?
```

2.2.1 The screen mask in the example above allows for two options, "YES," or "NO." The "COMMANDS" option tells you are to "VERIFY" the question that is asked at the bottom of the screen. That question is "ERASE DATA BASE?." In this screen mask you have to push either the "Y" for "YES" or the "N" for "NO." If you are creating a new data base and you have one in memory you will erase that data base. Answering "N" will return you to the main menu. Answering "Y" will take you to the screen mask as follows:

```
File:          Date:12/31/81   Rec:0

Options:  -Input-
Command: Name: _
```

2.3 Enter the name you are going to give the data base you are creating. The only restriction in creating a name is that it be a maximum of 8 characters. The extension of '.DB' will automatically be appended to the name of your data base file. It is suggested for ease of remembering that you follow these guidelines. For this example, let's assume that the name "SAMPLE" was entered, as the option permitted, as the "NAME" of the data base you were creating and pressing [RETURN]. Upon pressing [RETURN] the screen will appear as seen following. A failure to enter a name for the file, and just pressing [RETURN], will abort the operation and return you to the main menu.

```
File:SAMPLE   Date:12/31/81  Rec:0

Options:  ↑ ↓ <-->,Begin,CR-sel,Quit
Command: -Position-

  Key:  _____
```

2.4 The "KEY" field has already been set for you with a 5 character string following it. This can be found just under the title "COMMANDS." This field can be changed later to a longer length. The four arrow keys will move you around the screen in four directions.

2.4.1 The other "OPTIONS" at your command are "B", "CR," and "Q." The "Q" stands for "QUIT," is used at the end of the create procedure to start the procedure to save the screen mask to the source and backup diskette. "CR - SEL" means "Carriage Return for Selection." When you have moved to the position where you want to place a name, you would use this option, [CR],

to indicate to the program that this is where you want to enter a name. "B," stand for "Beginning." Pressing this key will return you to the default position for that field. If you are adding fields it will place the cursor in column 2 one line below the previous filed, if you are editing fields, it will place the cursor where the field was previously located.

2.5 You have to use the above keys to move the cursor around and indicate to the program where it is you want each of the fields to be located. Careful thought should be given to this operation. It is best to sit down with a paper and pencil and map out the formation of the data base. Quadrille paper can be used to lay out the exact format you want to design on the screen prior to actually entering the information on the screen. This type of preparation will make the final appearance and the ease of entering the information much more satisfying. Fields start with field "Ø," the key field, and can continue up until you have entered a total of 32 fields. You also have a maximum of 511 characters that can be used in a single data base record. Data bases that are to be merged with LETTER PERFECT are limited to a record length of 255 characters. As you enter fields into the data base the "Rec:" number will keep a running total of the number of characters that you have used. You should leave the key field as it is during creation for maximum use of the program. The key field is of great use when combined with LETTER PERFECT word processing for prepared form letters. Fields can be of many different types. They can be strings, numbers, formulas, or date fields. The exact procedure for creating each of these types will be explained in full in this section.

2.5.1 Entering the name of the field is accomplished after locating the position on the screen where you want the name to occur. Use the diamond keys to locate the exact location where you want to place the name and then press the [RETURN] key. Pressing [RETURN] fixes the location for the program and indicates that this is where you want the name. When you indicate to the program that "this is the position," by pressing [RETURN] the following will can be found on the screen:

```
File:SAMPLE   Date: 12/31/81 Rec:Ø

Options: -Input-
Command: Name: _
```

2.5.2 You type in the name of the field you want at this location. The field name should not be longer than 12 characters in length. Field names longer than 12 characters will be truncated to only 12 characters. Leading blanks are ignored when you input the field names.

2.5.3 After entering the name of the field you press [RETURN]. If, for example, you wanted to enter the field "SOC SEC NUM:", you could do so with little problem. This is a field 12 characters in length (the spaces between words count also). After pressing [RETURN] you will find this name in inverse video (black lettering in a white box) at the position you indicated to the program you wanted the name located. The screen will change, as will the "OPTIONS" and "COMMANDS" available for your use. The new commands and options are as shown on the screen mask that follows:

```
File:SAMPLE   Date: 12/31/81   Rec:Ø

Options: [D]ate, [N]umbers, [F]ormula, numbers
Command: Length: _.
```

2.6 As you can see, you have four different options at your command. You can press the "D", "N", or "F" keys or you may enter a number (i.e. 8, 14, 17, etc.). These four alternatively are explained in full in sections 2.6.1 to 2.6.4 which follows.

2.6.1 The last option is the selection "NUMBERS." You have but to enter a number for a string which will be equal to the length of that string. Strings can be either numbers or letter (i.e. 1,2,3 or a,b,c), or they may be combinations of both. A good example of a string that uses both would be an address field

(i.e. 123 Maple Street). Any time that you use just a string of characters and you will never need to do a mathematical calculation on the field it is best to use this type of string. You would just enter the number (i.e. 11) and press [RETURN]. The screen would then show 11 underlined characters after the field name to indicate you could enter up to a maximum of 11 characters in this space. The "Rec:" number on the status line would be updated to show the number of characters you had used in creating this field.

2.6.1.2 Social Security Numbers are best entered as strings. The number "11" would be the length of the string that would work for the social security number. Social Security numbers are never added or subtracted and it would serve no purpose to enter them as a field that would allow such an operation. "number" fields are assigned lengths according to your needs and you should enter the "length" of the field numerically in the appropriate place. Take care in entering the length of a "number" field length. It is a poor utilization of space to assign a number value of "45" for an address field that will never be longer than "25" characters in length. Allocating space for fields longer than will ever be used will restrict the space and number of records that will be available on a diskette. Care should be shown that the fields are not too short. Making the field too short, will cause a truncation of information in the event you enter in information that is longer in nature than the length of the string that has been allocated for it.

2.6.2 "D" is pressed when you want to make a date field. Entering a date field requires no other information to be entered. When you press this key you will automatically set aside an 8 character field at the position on the screen where the cursor was positioned. Date fields are always expressed as DD/MM/YY. Date fields will always be easily recognized on the screen because the date field will have the letter "D" just prior the eight character set aside for it.

2.6.3 Pressing "N" for "NUMBER," indicates to the program that you want the field to be a numeric field. Number fields are always proceeding with a capital "N" prior to the string that is

set aside for this type of field. "NUMBER" fields can be distinguished from "NUMBERS" on the option line in the following manner. The "NUMBERS" when selected is the number of spaces you want to set aside for the string length and should not be considered a "number" that would require a calculation be performed upon it. [N]UMBER fields on the other hand require you to press the "N" key. "[N]UMBER," or numeric fields require more information be entered, so that mathematical computation can be performed upon them. "[N]UMBER" fields can be entered with or without decimal points. This means that you can have dollar and cents fields as well as unit fields as "[N]UMBER" fields as explained in sections 2.6.3.3 and 2.6.3.4.

2.6.3.1 When you press "N" for "[N]UMBER," you will have a capital "N" appear before the string length set aside for this field to indicate that it is a "numeric" field. The command line will change and ask for the "LENGTH", the length will indicate the format, that you want set aside for this field. It is at this point you will determine if this is to be a units number or a dollar and cents numbers field.

2.6.3.2 Unit fields are those fields where you want to enter a value to be kept that is other than a dollar and cents value. It could be the number of units sold, the number of units ordered, or any value that you want to keep. Pressing the letter "N" indicates the desire for a number field and then you must indicate the format you want the number to be represented and the length of the field as well. You indicate the format with either Upper case "X'S" or lower case "x's" following the letter "N." "Nxxxxxxx" would indicate that you want the number field to be a unit type number field with no decimal points and carried to 8 places (the number of x's + 1). The largest number that can be represented before going to exponents is 142,300,000. If you want the number represented to be separated by commas (i.e. 1,234,567) you would indicate that in this line by either placing the comma's between the "x's" as they would normally be placed or by placing a single comma anywhere in the format line after entering the "N" (i.e. xxx,xxx,xxx or ,xxxxxxxxx or xxxxx,xxxx). The location of the comma is unimportant, the presence of it is the determining factor. You should give some consideration to the length (number of X's) that you want the field to be assigned. It is more important with this type of field that the field not be too short. Number

entered that are larger than the last field will be truncated and would cause a mathematical error in computations made on the field. While it is not wise to waste space with unnecessary characters in this case it is also important to keep in mind the size you might want to expand your information to.

2.6.3.3 "N" for "[N]UMBER" could also be used to indicate a dollar and cents field. This is indicated to the program by the use of the format representation that is entered after entering the "N" for "[N]UMBER" after the "LENGTH_" on the "Options:" line. Entering "Nxxx.xx" would indicate to the program that you wanted the field to be a "N"umber field and that the format should be "xxx.xx." Note that the decimal point is entered indicating to the program that the number should be carried to two places. If you wanted to work with numbers that were to be carried to 5 places you could enter the format as "xx.xxxxx."

2.6.3.4 You can also have comma's entered where indicated by placing a comma somewhere in the format line. Entering the format "N,xxxxx.xx" would cause the number "123,456.78" to be represented with comma's and a decimal point. The comma can be anywhere in the format line.

2.6.3.5 When entering numbers at a later date, numbers that are smaller than the format representation, all leading "Ø's" will be removed. Thus, the number 237.68 when entered into a field that was created with the format "xxxxxx.xx" will be represent without the five leading "Ø". Numbers that are positive in nature will not be indicated as such. Numbers that are negative in nature will be represented as such by proceeding them with the minus, "-", symbol.

2.6.3.6 Exponents will be represented with the sign "E" prior to the number.

2.6.4 "FORMULA" fields are indicated in the "COMMAND" line by placing an "F" in the space provided after the "LENGTH" prompt.

After placing the "F" you have to indicate the type of formula field that you desire. Formula fields can be of two types the same as number fields. They can be either unit type of formulas (see section 2.6.3.2) or they can be separated by decimal points as in dollar and cents fields (see section 2.6.3.3). This method of indicating the format of the formula is identical to the way that "[N]UMBER" fields are entered. You should read sections 2.6.3 to sections 2.6.3.5 for a better understanding of just how this is done.

2.6.4.1 Formula also allow the placement of comma's in large numbers where appropriate. This is the same as for numbers and is explained in sections 2.6.3.2 and 2.6.3.4. Let's say for example you were creating a formula field that was to be the product of the number of units shipped multiplied by the cost of each unit. This type of field would be the product then of a unit field (number of units) multiplied by a dollar and cents field (cost of each unit). The new field, a formula field, will be in a dollar and cents format because the product of the number of units times the amount will be represented as such. You will type "F" and the format (xxxxx.xx) after the "LENGTH" prompt. Upon pressing [RETURN], the screen mask will change and you will have to enter the formula. The screen mask will appear as follows:

```
File:SAMPLE   Date:12/31/81  Rec:187

Options: -Input-
Command: Formula: _

#  Name          Len  # Name          Len
Ø  KEY             5  1 CUSTOMER       25
2  INV. Date:      8  3 UNITS SHIP:     9
4  UNIT COST$      9
```

2.6.4.2 Enter the formula at this point on the commands line after the "FORMULA" prompt. The screen mask has changed to show you the fields that are on the diskette and the string number that has been assigned to each. In this example you would have field 3 "UNITS SHIP:" be multiplied by field 4 "UNIT COST$." This would be expressed as "F(3)*F(4)[RETURN]."

2.6.4.3 The formula is expressed with the capital letter "F" to representing the word "FIELD" and the number of the field is represented, as a number, and that field number is enclosed in parentheses. After entering this formula and pressing [RETURN] you will be returned to the create screen mask where you will have the option of adding additional fields.

2.6.4.4 Formula fields are always fields in which you have the opportunity to have two or more fields be involved in some type of formula. The fields can be added, subtracted, multiplied, divided, or have a variety of mathematical functions performed upon them. These mathematical function are explained in section 2.6.4.5. As with any computer, the precedence or order that the expressions are performed is important. Precedence can be likened to determining "who's on first." Precedence is the order in which the mathematical calculations are performed and following in that order:

1. ( )	Highest Priority
2. Functions	-(unary) +(unary)
3. ^	powers
4. * /	multiplication, division
5. + -	addition, subtraction
6. < = >	(booleans lowest priority)

2.6.4.5 You have the following functions that are available for use. They can be used in either upper or lower case or in a combination of the two.

R(Ø)	Returns the current record number and must have a dummy argument.
F(n)	Value of field number "n". Field "n" should be a numeric string. Date fields should not be used. "n" can be a mathematical expression.
INT(x)	Returns the integer value of "x" where the integer is the highest integer less than "x."

LN(x)	Returns the log base "e" of "x."
LOG(x)	Returns the log base 10 of "x."
ABS(x)	Returns the absolute value of "x."
EXP(x)	Returns "e" raised to the power of "x."
SQR(x)	Returns the square root of "x."

2.6.4.6 After you have finished creating the data base, you should prepare to save it to diskette. You will need two blank diskettes for this purpose. The diskettes will be erased and rewritten so it is important that no information of value be on them if they have been previously used. You will be saving the screen format you have just created to each of the diskettes. One diskette will be the source diskette and the second diskette will be the backup diskette.

2.7 After you have created the file you would then press the "Q" for "QUIT" as the option you wanted to perform. This indicates to the program your intention to save the information to diskette and that you have completed the create operation. The screen mask will appear as follows on the video screen:

```
Options: ↑ ↓ <-->,[B]egin,CR-sel,[Q]uit
Command: -Position-
```

2.7.1 Pressing "Q" for quite will cause you to display the editing menu. This is to give you one final opportunity to change the screen mask to the desired format of the data base. The command and options line looks as follows in this screen mask:

```
Options: [I],[K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-
```

2.7.2 After making the decision to "Q"uit and do no further editing (pressing any other key will recycle the editing procedure). After pressing the "Q" key to "quit" the editing mode the following screen mask will appear:

```
File:SAMPLE    Date:12/31/81  Rec:187

Options: -Input-
Command: -Data-
KEY: _ _ _ _ _ _  Date: D _ _ _ _ _ _ _

ACCT. NAME: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

UNITS ORDERED: N _________

UNIT COST$  N ___________

TOTAL COST$   F ___________

Default
```

2.7.2.1 The options line tells you you can "INPUT" data which are default values. The last line asked for "DEFAULTS" and the cursor is resting upon the key field data entry line. At this point you either press [RETURN] to indicate you do not want to enter any default values, and tab to the next field or you enter the default value you want entered. Default values that are entered at this point mean that each time as you enter data, in the add mode, you will not have to enter that data but just press [RETURN] and it will be entered from this default table. In the example above if the unit cost were always the same (i.e. 19.95) you could enter that value as you tab through the default setting and it would always be entered by just pressing [RETURN] when you were adding records to the data base in the add mode. This is very useful for entries such as zip codes when you always are entering the same zip code. If you were entering zipcodes, in the add mode, and wanted to enter a zip code that was the default code you would just press [RETURN]. If it were a zip code other than the default zip code that had been entered at this point, you would enter that particular zip code before pressing [RETURN]. In the add mode, you would therefore not have to always enter the default value. If you just press [RETURN] on each field and enter no default value, then there

will be no default values entered. The only exception to this is a date field. Date fields are always defaulted to the date that you entered when loading the data base and you must always enter a different date on data entry to get other than the default dates.

2.7.2.1.1 You tab from field to field by pressing [RETURN], you have the choice of entering default values or not. Upon pressing [RETURN] for each field in the data base you will have the following screen mask appear:

```
File:SAMPLE    Date:12/31/81  Rec:187

Options: [E]dit,[Q]uit
Command: -Select-
KEY: _ _ _ _ _ _  Date: D _ _ _ _ _ _ _

ACCT. NAME: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

UNITS ORDERED: N _______

UNIT COST$ N 19.95_____

TOTAL COST$   F _________

 Default
```

2.7.2.1.2 This screen mask allows you to either edit the default values you have just entered, or to "QUIT" the operation and continue with the saving of the screen mask to the source and backup diskettes. All of the default values that have been entered will be displayed (i.e. 19.95). Press "E" to EDIT and press "Q" to QUIT. Pressing "E" to edit will recycle the entering of default values, and pressing [Q] to quit will provide the following screen mask:

```
File:SAMPLE    Date:12/31/81  Rec:187

Options: [E]DIT,[Q]UIT
Command: -SELECT-
KEY:                Date: D 12/31/81

ACCT. NAME:

UNITS ORDERED: N

UNIT COST$      N      19.95

TOTAL COST$      F      Ø.ØØ
```

2.7.2.1.3 This is your final opportunity to edit the default values. As you can see, all of the default values have been displayed as entered for your final review. You should either edit or quit.

2.7.3 Entering "Q" to quit the editing operation will cause you to go through two different operations. Two different screen mask will be displayed in order. If a formula has been used in your data base, a third mask will be displayed which will show the formula. These screen masks review the composition of the data base, and are intended for the user's use in confirming the information desired and in the proper format. This is the same information that is displayed in loading the data base to confirm that you are loading the desired data base and is the same information that would be displayed in the "View Format" operation in the utilities menu. The first thing you would be shown is the names of the fields, the string numbers assigned to each of them, and the length of each field. This will appear as follows:

```
File: SAMPLE   Date:12/31/81        Rec:88

Options: RETURN
Command: PRESS RETURN
#  NAME:        LEN  # NAME              LEN
Ø  KEY           5   1 CUST. NAME:        48
2  INV. DATE     8   3 UNITS SHIPPED:      8
4  UNIT COST$    8   5 TOTAL COST $        9
```

2.7.3.1 It is necessary that you only press [RETURN]. If you see at this point that you do not want to continue but want to go back to the editing mode you may do so. The [BREAK] operation will cause this operation to stop and will have you type in the name of the file. If you type in the name of the file as prompted you will be returned to the editing menu for further editing. If you do not type in the file name but instead press [CTRL A] the entire file that you have just created will be lost and you will be back at the main menu. In this case, the entire file that you had created will be lost and you will have to go back through the create procedure to recreate the file. If you accept the information as correct and press [RETURN] the following screen mask will appear:

```
File: SAMPLE   Date:12/31/81  Rec:88

Options: [CR]
Command: PRESS RETURN

Fields: 6
Record length: 88
Max # of Rec: 1396
Active Rec:Ø
Created: 12/31/81
Updated: 12/31/81
Formulas: 1
```

2.7.3.2 In this example you have a formula so the pressing of the [RETURN] key will cause the formula to be displayed for your review. If you had more than one formula then all of them would be displayed. The formula will be displayed as entered. In this case the formula is F(3)*F(4).

2.7.3.3 Press [RETURN] as instructed and you will have completed the create operation. If you have two drives you may place the two <u>blank</u> diskettes in each of the drives. Drive "2" will be the source drive and drive "1" will be the backup drive. If you have only one disk drive you will automatically be taken through the saving procedure so that you create your backup diskette at the same time you create your source diskette.

2.7.4 Two disk drives systems will cause the data base to be saved in the following fashion. After pressing [RETURN], the following screen mask will be displayed:

```
File: SAMPLE   Date:12/31/81  Rec:88

Options: [Y]ES,[N]Ø
Command: -VERIFY-

Drive: 2



Insert BLANK Diskette
```

2.7.4.1 Pressing [N] key will abort the create operation. You will be asked to input the name of the file, and pressing [RETURN] to be cycled back through the create procedure. Failure to enter the file name and just press [RETURN] will cause the entire file created to be lost. By pressing the "Y" key in response the above command will start the save procedure. The data diskette will be formatted. ANY INFORMATION CURRENTLY ON THAT DISK WILL BE LOST. Make sure that you either use a blank diskette or one that does not have any information of value on it.

2.7.4.2 This will give you the opportunity to abort the erasing of a diskette that has important information on it. Pressing "N" at this point will abort the operation. Pressing "Y" will cause the diskette cataloged to be erased and reformatted with the data base that was just created. After pressing "Y" the diskette will spin for a few seconds and then the display of the same descriptive information found in sections 2.7.3 and sections 2.7.3.1 proceeding will appear. After completing this procedure it will repeat the same steps on the backup diskette in drive #1.

2.7.5 A single disk drive system will cause the same things to happen as described in sections 2.7.4 above except it will cause you to repeat the procedure with the same disk drive. The "SAVE" operation is designed so that you must create your back up diskette at the same time you create your source or master diskette.

SECTION III - UPDATES

3.0 The updates section of the Data Perfect program is used primarily to add information to the data base, edit existing information, globally update records, delete records, or to total a numeric field on a specified basis.

3.1 Move to the updates menu which is the third selection on the main menu and press [RETURN]. If there is no data base in the program you will get an error message, that says "NO DATA BASE." You will have be load a data base file from diskette, therefore, before you can use this menu selection.

3.2 If a data base has been loaded into the program, and you press [RETURN] while on the main menu at the "UPDATES" selection you will get a new menu called the "UPDATES MENU," which is illustrated as follows:

```
File:SAMPLE    Date:12/31/81  Rec: 1

Options: <- -> CR
Command: -SELECT-

     Updates Menu


    Drive: 2

=>  Add              <=
    Edit
    Global Update
    Delete
    Total
    Return to Menu


     DATA PERFECT
```

3.3 ADD - "Add" is for data entry of new records to the data base files. The cursor will be on the first field entry, the key field. The options and commands line will appear as follows:

```
Options: -Input-
Command: Data
```

3.3.1 Enter in the information, and press [RETURN] to tab to the next information. You may use all of the editing commands available as explained in the introduction of this manual. After you have entered the information in the last field you will have the options and commands lines change, all formulas will be calculated and you will have the following options:

```
Options: [E]dit,[S]ave,[N]ext,[Q]uit,[A]bort
Command: -Select-
```

3.3.2 Press any of the keys that you desire for the correct action you want to take. The options are as follows:

3.3.2.1 [E]DIT - Go back and edit this record as there is incorrect information entered.

3.3.2.1.1 The options, and commands lines will have the following information on them:

```
Options: [B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-
```

[B] MOVE TO THE BEGINNING FIELD
[U] TAB THE CURSOR UP ONE FIELD POSITION
[D] TAB THE CURSOR DOWN ONE FIELD POSITION
[S] SELECT THIS FIELD FOR EDITING
[Q] QUIT EDITING AND RETURN TO THE ADD MODE

3.3.2.2 [S]AVE - Save this record to the data diskette, but leave the information as entered on the screen because of the similarity of the next record.

3.3.2.3 [N]EXT - Save this record to the data diskette and display the next blank form to be entered.

3.3.2.4 [B]EGIN - This selection will allow you to abort adding information in the present file and begin the adding procedure all over.

3.3.2.5 [Q]UIT - You will save the newly entered data file to your data base record and exit the adding procedure and return to the updates menu.

3.3.2.6 [A]BORT - This will abort the entering of a record and return you to the updates menu.

3.4 EDIT - The edit section of the updates menu has two functions:

3.4.1 To use the data base as you would a filing cabinet. In this use you search for a record because you need some of the data that is contained on the file.

3.4.2 To find a record, much as you would in 3.4.1 above but edit or bring the record up to date with new or more current information.

3.4.3 In order to use this section for either of these two purpose requires that you find the record. Finding a record is called searching for a record. There are three ways in which to search for a record; 1. Search for the record number. 2. Match an exact part of the record that you know exists. 3. Match a partial part of the record you know exists. Lets us examine how to do each of these in turn. Following you will find a representation of the record options and commands when you press [RETURN] while on the edit selection of the "UPDATES MENU."

```
Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-
```

3.4.4 [R] stands for "record number." This is the number found at the right end of the status line. Pressing "R" for record number will cause the following options, commands line to be displayed:

```
Options: numbers
Command: Min,Max _
```

3.4.4.1 You can enter two numbers separated by a comma. The two numbers being in the range of record numbers you want to search for. Entering a number for "MAX" that is greater than the total number of records on your data base would result in a range error message. You would now be able to examine those record numbers that you had specified in the "MIN,MAX" entries. Record number entries can be of the following forms:

1.) Min -- find only record # Min.
2.) Min, -- find all from min to end of file.
3.) Min,Max -- find all from min through max.
4.) ,Max -- find all from beginning through max.
5.) [RETURN] -- search through all records.

3.4.5 The other two methods for finding a single record in a file is by matching exactly, or partially part of that record number that you knew existed. Let us consider the following record as one that we were trying to find in a file that has several hundred entries:

```
File: SAMPLE Date:12/31/81  Rec: 1

Options:">=<, *?, \
Command: -Data-
KEY: S____   Date:D 11/10/76

NAME:John Paul Jones Jr.____

ADDRESS:123 N. Main Street__

CITY: Annapolis____________

STATE:MD__  ZIP CODE:21401__

SHIPS ORDERED:N _______16

COST OF SHIP$:N __5234.37

COST OF NAVY$:F _83749.92
```

3.4.5.1 This is the file you want to find however the screen mask that you will be presented with will have the following appearance:

```
File: SAMPLE Date:12/31/81  Rec: 1

Options:">=<, *?, \
Command: -Data-

KEY: _____   Date:D _______

NAME:_____________________

ADDRESS:__________________

CITY: _____________________

STATE:____  ZIP CODE:_______

    SHIPS ORDERED:N _________

    COST OF SHIP$:N _________

    COST OF NAVY$:F _________
```

3.5.1.1 The search will allow you to find this record knowing certain things about the information that is contained in the file. Searches may be divided into several types. The matching type searches will be discussed first.

MATCHING SEARCHES

1.	nothing	implied =
2.	<	data less than criteria
3.	<=	data less than or equal to criteria
4	=	data is equal to the criteria
5.	>=	data is greater than or equal to the criteria
6.	>	data is greater than the the criteria
7.	"	data in included is some form in this field

3.5.1.2 When no search criteria is entered it is assumed you want an equal to (=) search initiated.

```
STATE:MD__   ZIP CODE:_______
```

3.5.1.3 Moving to a state field, pressing [S] to select this field for a search, entering the letter "MD" for Maryland, pressing [RETURN] to indicate you have complete the field search criteria, and pressing [Q] to begin the search, will return all entries that have the initial "MD" as the state entry.

3.5.1.4 If the less than symbol "<" is used then the search will find all occurrence that match this criteria. If we wanted to find the accounts available that could produce a ship for less than $6000 we could initiate a search on this basis.

```
COST OF SHIP$:N <6000____
```

3.5.1.5 Move the cursor to this field, press [S] to indicate that this is the field you have selected to search on and then

enter the search criteria. Enter in the less than (<) symbol and the amount. Press [RETURN] after you have entered the criteria, and then [Q] to start the search. All fields that match will be found.

3.5.1.6 The less than (<) symbol when combined with the equal to (=) symbol will cause the match to occur only if they meet both criteria. Searching a date field could be done on this basis.

```
KEY: _____  Date:D <=11/31/76
```

3.5.1.7 Move the cursor to this field, press [S] to indicate that this is the field you have selected to search on and then enter the search criteria. Enter the search criteria (<=) and then the date. Press [RETURN] after you have entered the criteria, and then [Q] to start the search. All dates that met the criteria would be retrieved.

3.5.1.8 The equal to,(=), criteria would be the same as explained in #1 above, except that the equal symbol "=" would be entered. Move the cursor to this field, press [S] to indicate that this is the field you have selected to search on and then enter the search criteria.

```
STATE:=MD_  ZIP CODE:_______
```

3.5.1.2.8 Press [RETURN] after you have entered the criteria, and then [Q] to start the search. All the criteria that match the criteria on an equal basis will be retrieved.

3.5.1.2.9 The greater than (>) and equal to (=) when combined will return all criteria that match both criteria. To find all manufactures that could build a ship for $5000 or greater we would enter the following:

```
COST OF SHIP$:N >=5000___
```

3.5.1.2.10 Press [RETURN] after you have entered the criteria, and then [Q] to start the search.

3.5.1.2.11 Greater than search (>) will match all criteria that is greater than the number entered. If we were to search our records to find all ship builders who had more than 10 ships we would enter the search criteria as follows:

```
SHIPS ORDERED:N >10_____
```

3.5.1.2.12 Press [RETURN] after you have entered the criteria, and then [Q] to start the search.

3.5.1.2.13 The quotation mark " when entered as the part of a search criteria by itself will cause an "include" type of search to occur. "Include" searches means that you will find any record that has any of the search characters as a part of its string. If you were to do an include search on the NAME: field it might look as follows:

```
NAME:"J____________
```

3.5.1.2.14 Press [RETURN] after you have entered the criteria, and then [Q] to start the search. This include search would match all records that had the capital letter "J" in them. It would return James Madison, John Hancock, and John Paul Jones in addition to any other records that had a capital "J" as a part of the record. Include type searches when used on numbers, formulas and dates will act an an equal to search. The include search is best reserved for use on the key field where you would

normally key fields according to groups and wanted to search out a group that would be similar in nature.

3.5.1.2.15 MULTIPLE MATCHING CRITERIA - You have the ability to use the above matching type of searches on four different fields at the same time with a maximum of two different criteria on a given field. To perform a matching search with two different criteria on the same field the criteria must be separated with a backslash (\) character. Consider the following example for multiple searches:

```
KEY:_____  Date:D >11/01/76 \ <11/30/76
```

3.5.1.2.16 This example is of a date field in which two matching criteria are searched on the same field at the same time. In this date field the program is asked to return all dates that are greater that November 1, 76 (>11/01/76) as well as all dates that are less than November 30, 76 (<11/30/76). The two criteria are separated with the backslash symbol (\).

3.5.1.3 PARTIAL ITEM MATCHING - You also have the ability to also match partial items which is generally called "WILDCARD" searches. The wildcard searches are indicated by the use of the asterisk (*) and the question mark (?). The asterisk (*) is used to replace a block of characters, while the question mark (?) is used to replace a single character. Following is a description of how they differ in their use.

3.5.1.3.1 The * is used to replace a block of characters, and can be used prior to the search string, after the search string or in both places. If for example we knew that there was a ship builder whose middle name was Paul and could not remember the entire name we could search for his record in the following manner:

```
NAME: *Paul* _ _
```

3.5.1.3.2 The program is saying ignore a block of characters, find Paul, and ignore what follows the string "Paul." Any record that had the same Paul in this format would be retrieved. John Paul Jones would be retrieved in this illustration. You would press [RETURN] after entering the search criteria, and press [Q] to initiate the search process. This match criteria would also find all records that began with the name Paul.

3.5.2.3 If you wanted to search for an individual that you could remember the first name, only, you could use the asterisk wild card. If you wanted to search for John "something," you would do it in the following manner:

NAME: =John* _ _ _

3.5.2.4 This search criteria says to find the files that have as the first name John. This would return as matches, John Paul Jones, John Hancock, John Quincy Adams and Johnny Carson.

3.5.3 SINGLE PARTIAL MATCHES - Single character partial matches (wild cards on a character basis) are accomplished with the use of the question mark (?). This is best used when you want to search for a record in which you do not know the nature of a single character, and therefore replaced it with a question mark (?). Consider the following example:

NAME: *La?ayette* _ _ _

3.5.3.1 In this example, you would be searching for the name "General LaFayette," but do not know if the "F" is a capital or a lower case "f." Entering the search criteria in the above fashion would allow you to find the record in which this name were spelled in either fashion.

The use of the asterisk's would also also for the entry of "General Lafayette Esq. to be retrieved.

3.5.4 AND/OR SEARCHES - Any time that you enter more than one search criteria on a particular file you will have the option of choosing the degree to which you want to search to match. After entering the criteria, you initiate the search by pressing the [Q] key for "QUIT." The screen mask will appear as follows:

```
Options: [Y]es,[N]o
Command: -Verify-

KEY:                Date:D

NAME: *Jones*

ADDRESS:

CITY:

STATE: =MD      ZIP CODE:

SHIPS ORDERED:N

COST OF SHIP$:N

COST OF NAVY$:F

And type search?
```

3.5.4.1 Answering this question with a [Y] means that all of the criteria have to match in order for the search to be successful. If you answer [N]O, then if any of the criteria are met in the search, the the search will return a record in which one of the criteria was met.

YES	=	ALL SEARCH CRITERIA HAVE TO BE MET FOR A SUCCESSFUL MATCH
NO	=	IF ANY OF THE CRITERIA ARE MET YOU HAVE A SUCCESSFUL MATCH

3.5 GLOBAL UPDATE - This is the third operation you can perform on the updates menu. Press [RETURN] while the arrows are resting on this selection. You will get the following screen mask.

```
File:  SAMPLE    Date: 12/31/81 Rec: 0

Options: [B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: Formula:
KEY:                          Date: D

NAME:

ADDRESS:

CITY:

STATE:          ZIP:

SHIPS ORDERED:

COST OF SHIP$:

COST OF NAVY$:
```

3.5.1 You use the "U," "D," and "B" key to move to the field you wanted to globally update. When you are on the field and want to update, you press the [S] key for "select." For this example, let us assume that Uncle Sam has decided that the cost of a ship is going to go up because of inflation. To update all records of ship builders, he would move the cursor first to the item he wanted to update; in this example, "COST OF SHIPS$:." Using the cursor, move keys, (U,D, and B), place the cursor on this field, and press the [S] key for "select." After pressing the [S] key, the options and command line would change as follows:

```
Options: -Input-
Command: Formula: _
```

3.5.2 Following these directions, you would input the new data that you wanted to globally update. Let us assume that Uncle Sam wanted to increase the cost of the ships to $7478.19. You would enter the numbers "7478.19," and press [RETURN]. Upon pressing [RETURN], you would get the following options and command messages:

```
Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Search by-
```

3.5.2.1 You would again, use the same search functions that were explained in the section of this manual proceeding. (see section 3.5.1 to section 3.5.4). Use the same matching, partial matching, wildcard, or record number criteria for the search. Failure to enter any criteria, would cause all records to be updated. For this example, let us match the key field that has the character "S" in them. Move to the key field, press [S] for "select," and then enter the search criteria as illustrated following:

```
Options:">=<, *?, \
Command: -MATCH-

KEY: =S
```

3.5.3 This search criteria would find all records that have the letter "S" (for Shipbuilders) in them, and globally update the new cost that Uncle Sam has calculated ships will now cost. You have the ability to search identically to those in the search section of this manual. You can search on 4 fields, (2 different criteria per field maximum) in addition to the record number for a total of 9 different criteria. After entering all the search criteria, you would press [Q] for "QUIT," and the options and commands line will change as follow:

```
Options: [Y]es,[N]o
COMMANDS: -Verify-

KEY: =S          Date:

NAME:

ADDRESS:

CITY:

STATE:           ZIP CODE:

SHIPS ORDERED:

COST OF SHIP$: 7478.19

COST OF NAVY$:

     -Verify-
```

3.5.3.1 You have the option with this answer, to either view each record that matches and either update, or not update it. You may also tell the program to just go and update all of the records without you viewing each one of them individually.

3.5.4 Press [Y] to indicate you want to verify each record separately. When you press [Y] the search will begin and when the first record is found that match the search criteria it will be displayed on the screen with the following options and commands available:

```
Options: [Y]es,[N]o
Command: -Verify-
```

3.5.4.1 Pressing the [N] key will cause this record to not be updated and the program will continue to look for additional matches. Pressing the [Y] key will cause the record to be updated in the way you had indicated and continue to look for

additional matches. After going through the entire data base file and updating the records you have the following message appear on the video screen:

```
Options: CR
Command: Press RETURN

# of Rec: 11
```

3.5.5 This message will tell you the number of records that have been updated and tells you to press [RETURN]. When you press [RETURN] you will be returned to the updates menu.

3.5.6 If you had indicated that you did not want to -VERIFY- each record in the data base on an individual basis you would have answered the verify command with the letter "N." All of the records that matched the search criteria would be updated with the new information. When the update was completed, the following message would appear on the screen:

```
Options: CR
Command: Press RETURN

# of Rec: 16
```

3.5.7 This example assumes that 16 records were found that matched the search criteria and have been updated.

3.5.8 FORM LETTERS - The global updates will be very useful when used with LETTER PERFECT (tm) word processing in order to generate form letters. LETTER PERFECT is capable of merging with DATA PERFECT (tm) data processing files and incorporating the the data stored within into letters. You address a DATA

PERFECT data file from the "DATA BASE MERGE" option under LETTER PERFECT. When you do this you will be asked to search the data file on the basis of the key field. The searches are include type searches. If you had globally updated the key field with the letter "S" to indicate you wanted to send a letter to all of these records. In LETTER PERFECT, you would just enter the letter "S" when asked for the search criteria and the program would load each data file and print the data from it that you had indicated in your letter. If you entered no letter, and instead pressed [RETURN], all records will be considered a match.

3.5.9 GLOBAL UPDATES is a quick and efficient way to globally mark a large group of files on a very selective basis for incorporation them into a form letter. You could mark all of the records "Key Field" with the character "A" that were in the state of California if you wanted to so a selective mailing to those customers in that state. When you merged from LETTER PERFECT you would just match the letter "A" when searching the data base and the letter could be generated to each of those customers. Preparation of the letter itself would is explained the the LETTER PERFECT manual.

3.5.10 After you had finished the form letter you could go back and remove the "A" from the key field with the same global update procedure. You would move to the key field, press the [S] key to indicate you want to update the key field and then enter a blank space (press the space bar once) for the information you wanted updated. You would search the "KEY" field on the "=A" basis, press [RETURN] to indicate you were finished entering the search criteria and finally press [Q] to start the global update procedure. Again, you would be asked if you wanted to verify each record, [Y], or just have the update occur without your examining each record, [N]. The number of records that were updated, would be displayed at the end of the global update process, and the "CR" would return you to the "UPDATES MENU." You would, by following this procedure, have globally updated the files that had an "A" in the key field with a blank space in its place.

3.6 DELETES is the fourth entry on the updates menu. This menu selection allows you to delete records in the same manner that

you would have globally updated record. The exception is that instead of updating them, you are making a decision to globally or selectively delete them from the data base file.

3.6.1 You initiate the "DELETE" operation, by pressing [RETURN], while the arrows are resting on this selection. You move from field to field with the standard cursor movement options (U,D,B), and press [S] to indicate the field you want to search, on the basis of, and delete those records. Pressing [S] while on the state field, and entering "=CA" will cause all of the records that match "CA" as the state field to be deleted. Press [Q] to initiate the delete process, (you can search on the same 9 different criteria) and you will be prompted with the same ([Y], [N]) options if you want to -VERIFY- each record. The number of records deleted will be displayed at the end of the delete operation and pressing [RETURN] will take you to the updates menu.

3.7 TOTALS - The "TOTAL" option on the updates menu is a very useful tool that has been provided in DATA PERFECT. This option allows will give the total value of any numeric field on any search criteria that is desired.

3.7.1 When the arrows are resting on this option on the updates menu press [RETURN]. You will have the following appear on your screen.

```
NAME: SAMPLE   Date:12/31/81  Rec:1

Options: [B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: Formula:

KEY:     Date:

NAME:

ADDRESS:

CITY:          STATE:  ZIP:


PREVIOUS BALANCE:

       PURCHASES:

     NEW BALANCE:
```

3.7.2 You use the "B," "U," and "D" keys to move the cursor to the numeric field that you want to total. Totals can work only on numeric fields and formula fields where they represent the result of an operation on numeric fields. Date fields would return meaningless information. Attempting to select other than a numeric field will return an "INVALID ENTRY" error message where the status line is located.

3.7.3 If you had a file that kept track of invoice records as the one illustrated in the example above you could move the cursor down to the "NEW BALANCE:" field. With the cursor resting on this field you would press [S] for select, to indicate to the program that this is the field you would like to total. After indicating to the program you selection to be total you the options and commands line on the screen mask will change to look as follows:

```
Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Search by-
```

3.7.4 Having selected the field you want totaled you now have to select the fields and the criteria on which you want to serach and you will get the following options and command line:

```
Options: "<=>, *?, \
Command: -Data-
```

3.7.5 You can search on all of the same criteria as explained in detail in paragraph 3.5.1-4 of this manual. In this example, let us search the record by a date field. Moving to the date field on our screen mask with the cursor movement keys (B,U,and D), we press [S] to indicate that we want to search on the date field. We could search for a particular week: >12-01-81\<12-09-81. This would search all records from December 2 thru December 8, 1981. Note that the back slash key has been used to indicating you are searching this field based on two criteria. You could also search for all dates in December with the criteria: 12/00/00. This criteria would search for all records in the month of December. To initiate the search you would press [RETURN] which would give you the same search menu:

```
Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Search by-
```

3.7.6 You could then continue to search on multiple criteria (the record field in addition to four fields of two criteria each) or you can start the totally procedure by pressing [Q] for "QUIT."

3.7.7 The time it takes to total the records will depend upon the number of records that will be examined. To examine all records on the diskette will take a few seconds. When all information has been compared the screen mask will change to look as follows:

```
File: SAMPLE   Date: 12/31/81  Rec: 237

Options: CR
Command: Press RETURN


     # OF Rec: 48
    Total:  34,395.82
    Average:  145.13
```

3.7.8 Press [RETURN] and you will be returned to the updates menu. You may total other fields on the same file if you so desire, or you may total records on the basis of different search criteria.

4.0 The "UTILITIES" selection on the main menu allows you to perform a series of very useful and necessary house keeping operations in the data base. If you are in the main menu and move the arrows down to "Utilities," and press [RETURN], you will get a new menu which is the utilities menu. This menu is represented in the screen mask representation that follows:

```
File: SAMPLE   Date: 1/31/81  Rec:0

Options:   <-, ->, CR
Command:  - SELECT -

UTILITIES MENU

Drive: 2


=>  Back up Data Base*      <=
    Pack a Data Base
    Disk Sort*
    View Format
    Reformat Data Base
    Merge*
    Return to Menu


DATA PERFECT
```

4.1 The Utilities Menu allows you to perform a series of housekeeping functions and in addition gives you some greater flexibility in what you can accomplish with DATA PERFECT. You will notice that after 4 of the options, Back up a Data Base, Disk Sort, Reformat Data Base, and Merge, there is an asterisk [*]. The asterisk indicates that this is a two disk drive function, and requires swapping of diskettes if you only have one disk drive. Remember when using two disk drives, drive "2," is the default drive and drive "1" is the backup drive. You would always want to place your original data base in drive "2," and your backup copy in drive "1." The status line will show the name of the data base, the date entered upon loading the program and the current record number. You will use the greater than,[>], and less than, [<], keys to move the arrows as with standard menu selection operations and push the [RETURN] key in

order to indicate you desire to perform that operation. Under the inverse Utilities Menu display the current drive will be displayed.

4.1.1 BACK UP A DATA BASE* - The back up a data base allows the user to easily make a back up copy of the data base for safety purposes. It is a good idea to back up a data diskette anytime a significant number of entries have been added or edited in a data base. The back up will copy the entire diskette including entries that have been deleted. The backing up of a diskette will also copy any "print" formats that may be stored on the master diskette. The back up operation will not copy any field names or formulas that are on the "source" diskette. It is expected that the user will create the master and the backup diskette as described in that section of this manual that deals with creating a data base. This feature allows the user to reformat a data base by changing the name and/or formulas and use the backup up rather than the the merge option to copy the data to the new data base format. The user should never break (push the break key) during the middle of a backup procedure, as the backup copy will not be valid in terms of the data present or the number of records present. The asterisk indicates that the operation is a two disk operation if you have indicated "2" as your number of drives and you will have to swap between original and backup if you only have one drive. Remember that drive "2" is where you will want to keep the original and drive "1," is where you will want to keep the backup diskette. Pressing [RETURN] with the arrows pointing towards this menu selection will cause the following screen to appear:

```
File: SAMPLE   DATE 1/31/81   Rec:Ø

Options:  [Y]es,[N]o
Command: -Verify-

  Drive: 1

Insert [BACKUP] Disk
```

4.1.2 Remembering that the options line tells you how to do something and the commands line tells you what it is you are doing, you have the options of entering either a "Y" or an "N" to indicate to the program your intentions. If you have made an error and you do not wish to backup the data base diskette then press "N" for "NO." If it is your intention to backup the data base then insert the backup diskette in drive "1," and the original, "source," diskette in drive "2" and press [RETURN]. The disk drives will spin in their normal fashion alternating from reading drive "2" to writing drive "1." When the backup procedure is finished you will be returned to the utilities menu. If you only have one drive, the screen will display the format as illustrated in section 4.2 and determine if the backup diskette is a data diskette. The screen will then instruct the user to "INSERT SOURCE DISKETTE" and press [RETURN] to indicate to the program your intentions to begin the backup. The disk drive will read information, stop spinning and print the message "INSERT BACKUP DISKETTE." This alternating of reading and writing will continue until the data base diskette has been backed-up and the user will have to manually swap diskettes until the procedure is completed. NOTE: IT IS A GOOD IDEA T O WRITE PROTECT THE SOURCE DISKETTE PRIOR TO PERFORMING A BACKING UP PROCEDURE. THIS IS ESPECIALLY THE CASE WHEN USING ONLY ONE DISK DRIVE. THIS COULD PREVENT YOU FROM ACCIDENTLY INSERTING THE WRONG DISKETTE, IN THE EVENT YOU WERE DISTRACTED, OR MADE A MISTAKE IN PLACING THE WRONG DISKETTE IN THE INCORRECT DISK DRIVE.

4.2 PACK A DATA BASE - The pack a data base allows for the removal of deleted records. During the adding of records in a data base and during the subsequent editing, records that are deleted are not removed from the diskette. They are not addressable from the program itself but are on the storage diskette. If a large number of them are there they will occupy space on the diskette that could be utilized for storing records. If the records are not important in terms of values that are stored then you may delete them. The deleted records are removed with the "pack a data base" option on the utilities menu. The deleted records are removed by pushing down all succeding records after the deleted record(s). This will change the record numbers themselves but will not change the way records are stacked if they have previously been sorted. There are times when you may not wish to remove deleted records. This would occur most likely in a case where the record number was a part of a formula as in a check register. In most cases, it is

recommended that record numbers in fields be accomplished by the use of global updates rather than using formulas. By doing your record numbers in fields you will be allowed to remove records that are occupying space on a diskette and not allowing for the maximum utilization of disk space. You should never break (by pressing BREAK) during a Pack a data base operation as it may result in duplicate records appearing on the diskette. Following is a screen representation of what happens upon initiating a "pack a data base" operation:

```
File: SAMPLE   Date: 1/31/81  Rec:586

Working...
```

4.2.1 Upon pressing [RETURN] the Utility Menu will be replaced with the "WORKING ..." message on the screen and the disk drive will begin spinning. Depending upon the length of the file and the number of records in the file, this procedure could take from a few seconds to two minutes. Long records with a great number of records to be removed could take up to several minutes. You have nothing further to do and must wait until the operation is completed. You should not break the operation with a BREAK as you may cause for duplicate records to be created. When the operation is completed you will get the following screen mask to appear:

```
File:  SAMPLE  Date: 1/31/81  Rec:545

Options:  CR
Command: Press RETURN


Number of Rec: 11
```

4.2.2 This screen mask shows you that the operation has been completed. It shows that 11 records in this case have been removed and that the total number of records in the status line have been reduced by that amount. Upon pressing [RETURN], you will be returned to the utilities menu.

4.3 Sorting is the rearrangement of file records according to some criteria in an organized way. Alphabetizing is the most common method of sorting information. In a record, you might want to sort the file so that the field that has the last names of a customer record in alphabetic order. You might also want to sort on the basis of invoice number, zip code, or any criteria that would make the order of your records more meaningful. You can do this easily with DATA PERFECT.

4.3.1 DISK SORT* This option is the third option on the Utilities Menu. When the arrows are resting on this selection press [RETURN] and the following type of information will appear on your screen.

```
File:SAMPLE    Date: 12/31/81      Rec:1

Options: numbers
Command: Sort: _

#  Name:      Len     #  Name:      Len
Ø  KEY          5     1  DATE         8
2  ACCOUNT     15     3  INV #        5
4  UNITS        4     5  UNIT COST$   8
6  TOTALS $     8     7  ZIP CODE     7

     255 Characters
```

4.3.2 The options line indicates that you are to enter numbers at this point behind the "Command: SORT: _ " prompt. The numbers you are to enter are for the field you want to sort and the depth to which you want the sort to take place. The field number, name, and length are displayed on the screen to help in making the correct choices. The bottom most line "255 CHARACTERS" tells you that you are limited to 255 characters in sorting capability. That means you can sort a maximum of 255 characters on a single file at a give time.

4.3.2.1 String fields such as field 2 above always count as the entire length of the string (i.e. 15 characters for ACCOUNT),

unless you indicate otherwise. To sort the accounts alphabetically you would enter the number 2 and press [RETURN] to initiate the sort. If you wanted to sort on only the first four characters of the field and limit the sort from 15 characters to four characters you may do so by entering the field, a period, and the value for the depth to which you want to sort, i.e. "2.4." This would indicate to sort field "2" on the basis of the first "4" characters alphabetically. Later you will be asked if you want this is ascending or descending order (i.e. a to z, or z to a).

4.3.2.2 Formula, and Number Sorts lengths are not determined by the length of the field but by the fact they are number and formula fields. Each of these type take "5" character, and the length value on the screen has no effect on the 255 restriction.

4.3.2.3 Dates can be sorted also, like numbers and formula's are not sorted on the value of their length. The characters needed to sort dates are 3.

4.3.2.3 SORTING ON MULTIPLE CRITERIA may be done with Data Perfect. When you initiate a sort on multiple criteria you enter the fields in the order you want them sorted on first, followed by the criteria that you want that field sorted on next. The fields are to be separated by a comma, "," to indicate you want a multiple sort on those two fields. You can sort by a maximum of 4 different fields in a single sort. As an example let us consider the data base file in section 4.3.1. If you wanted to sort on the basis of the date (i.e. have the file sorted with the only the month, day, year) you would enter the field number for the date, a comma, and the field number for the invoices to indicate you wanted the invoices arranged in numerical order after sorting on the basis of the date. This would appear as follows:

```
Command: SORT: 1,3
```

4.3.2.3.1 The sorting of multiple criteria can also be done so as to limit the level to which the sorting is done as explained in section 4.3.2.1. To sort the same record alphabetically by date and then the account name with a limit of 5 characters in depth on the account name you would enter the line as such:

```
Command: SORT: 1,2.5
```

4.3.2.3.2 The above sort criteria tells the program to sort field 1 first. After separating the dates then it should sort the account alphabetically on the basis of the first five characters only. Any time that you are sorting a long string field you may want to limit the number of characters deep that you want the sort to occur upon. Going beyond four or five characters in depth will cost a great deal of time and change the alphabetic sort very little.

4.3.3 After you have entered the "NUMBERS," or the sort criteria you should press [RETURN] to indicate you have selected the field(s) and depth to which you want the sort to take place. When you do this the options and command line will change and the questions "ASCENDING?" will appear on the bottom of the screen as follows:

```
File:SAMPLE    Date: 12/31/81      Rec:1

Options: [Y]es,[N]o
Command: -Verify-

#  Name:      Len     #  Name:      Len
Ø  KEY          5     1  DATE         8
2  ACCOUNT     15     3  INV #        5
4  UNITS        4     5  UNIT COST$   8
6  TOTALS $     8     7  ZIP CODE     7

     255 Characters

     Ascending?
```

4.3.3.1 This question prompt you to answer "YES" OR "NO," as to how you want the sort to occur, (i.e. "yes" for ascending; "no" for descending). Pressing the "Y" key will cause the sort to be from smallest to largest in numbers, or from "a" to "z" in alphabetically. Pressing "N" for "NO," will cause the reverse to occur. After indicating the ascending/descending nature you desire the screen will change as follows:

```
File:SAMPLE    Date: 12/31/81 Rec:1

Options: [Y]es,[N]o
Command: -Verify-

Drive: 1



Insert [BACKUP] Disk
```

4.3.4 This is the instructions that will be seen if you have a two drive system. The backup diskette will go into drive 1 and the source diskette will go into drive 2. If you have only a one drive system you will be instructed to also place the backup first in drive 1 and press [RETURN]. Pressing [RETURN] with two drives will initiate the sorting procedure, and the words "WORKING ..." will appear on the video screen. With two drives, you have nothing further to do but wait until the sorting is done between the source and the backup diskette. With one drive you will have to swap between source and backup diskette as instructed to do at the bottom of the screen. The same results will occur, regardless of a one or two drive system. If you have only one drive you should be careful in following directions as to the placement of either "source" or "backup" diskette in the drive. YOU SHOULD ALWAYS ALLOW A SORT TO CONTINUE UNTIL IT IS COMPLETED. THE ABORTING OF A SORT AFTER IT HAS BEEN INITIATED COULD CAUSE INCORRECT DATA TO BE TRANSFERRED OR FOR DATA TO BE LOST COMPLETELY.

4.4 View Format allows the user to either view on the video screen or have a print out made of the format for the particular data base in memory. This can be particularly helpful for the person who either wants to confirm that the file in memory is indeed the file desired without repeating the loading procedure. The view format options shows/prints out two screen masks. Upon initiating the view format operation the following screen mask appears:

```
File: SAMPLE   Date: 1/31/81  Rec:545

Options:  [P]rinter,[S]creen
Command:  -Select-
```

4.4.1 The user selects in which fashion he wants the information to be provided. Pressing "P" for printer will provide a print out of the information, while pressing "S" for screen will display the information on the video screen. If a person were about to prepare a form letter with the data base displayed above, he might want a printed output from which to refer during the preparation of the form letter. If he simply wanted to confirm the validity of the data base in memory and the particular computation of the formula if a formula were involved then he might choose the screen option. It is possible that a person might want to confirm visually and then have a print out after confirmation that this was indeed the correct data base he was wanting to work with. After pressing either "P" or "S" he would get output depending upon his selection. That output would have the following appearance:

```
File: SAMPLE   Date: 1/31/81  Rec:545

Options:  CR
Command: Press RETURN

# Name:          Len  # Name:          Len
Ø KEY:             5  1 FIRST NAME:    15
2 LAST NAME:      15  3 ADDRESS:       15
4 CITY:           12  5 STATE:          2
6 ZIP CODE:        5  4 BALANCE:        8
8 PURCHASES:       8  9 NEW BALANCE:    8
```

4.4.2 This is an outline of the data base in terms of the names of the key fields and the string number that has been assigned to each of them. This information would be helpful in preparing a form letter where you wanted to include some or all of the above information. You can only do one thing in the above situation and that is press [RETURN]. Upon pressing [RETURN] the following information will appear on the screen:

```
File: SAMPLE   Date: 1/31/81  Rec:545

OPTION:  CR
Command: Press RETURN

Fields: 9
Record length: 169
Max # of Rec: 649
# of Rec:  545
Active #:  538
Created: 1/11/81
Updated: 1/31/81
Formula: 1
```

4.4.3 This information is about the size of the data base and the dates that was created and last updated. By comparing the "MAX # OF REC" and the total number of records that are in your record according to the status line you can see how much room you have left before you fill the data base. The "RECORD LENGTH" tells you how long the entire 9 field record is. The longer the record length is then the fewer the number of records you will be able to place on a diskette. Your only option is to press [RETURN], which will cause the following information to appear:

```
File: SAMPLE   Date: 1/31/81  Rec:575

OPTION:  CR
Command: Press RETURN


8  F(6)+F(4)
```

4.4.4 The proceeding screen mask shows that formula field "8" has the formula: F(6) + F(4). This means that in field "8" the total of field "4" and field "6" will be displayed. All formula fields will be displayed in this fashion. Upon pressing [RETURN] you will be returned to the utilities menu.

4.5 This option, "REFORMAT DATA BASE*," is a very useful tool in allowing for greater flexibility in designed your data base. The asterisk [*] indicates that this operation is best performed with two disk drives. If you only have one, you will have to continually replace your source diskette with your backup diskette as directed.

4.5.1 The reformat data base is used to add or delete fields to an already existing data base. If you have a data base with information that is not necessary this allows you to delete that field and create more space on the data diskette. If you have a data base and want to create a new field you may do so with this operation. It is not uncommon weeks or months after you have created a data base to find that you need and additional field or fields. You would do so with the reformat function, and merge the old data onto the new format with the "merge" operation in the utilities section.

4.5.2 The reformat operations is performed from the utilities menu. You first have to load the data base into memory that you are going to reformat. After loading the data base into memory your should remove it from the drive and get two blank diskettes out. You do not want to erase the data base files until you have created the reformatted data base and merged the files from the old data base onto them. After loading the data base then move to the utilities menu. With the arrows resting on the reformat selection press [RETURN]. The utilities menu will be replaced with format of the data base in memory, displayed in the same format as if you were adding information. Following is representation of what you would see in the "sample" file we have been used to illustrate this manual:

```
File: SAMPLE   Date: 12/31/81 Rec:Ø

Options: [I],[K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-

KEY:_____          Date:D_______

FIRST NAME:_________     LAST NAME:____________

ADDRESS:_____________________________

CITY:_________________________ STATE:__  ZIP:_____

PHONE NUMBER _______SOCIAL SECURITY # __________
```

4.5.3 Let us assume for this example that you wanted to create a field called "BIRTHDAY:" after the phone number file, and at the same time you wanted to delete the "Social Security #" file, because you found it unnecessary. The options commands tells you what you have available that you may want to do. Those options and their meaning are listed in the following chart:

[I]	Insert a field before cursor position.
[K]	"Kill" the field at cursor position.
[R]	Return to add mode.
[B]eg	Move cursor to first field.
[U]p	Move cursor up one field.
[D]own	Move cursor down one field.
[S]el	Select this field for editing.
[Q]uit	Quit this operation.

4.5.4 The cursor will be resting on the first field in the file. Pressing [B] for Beginning field will not move the cursor, because that is where the cursor is located. Pressing [D] will tab down to the next field, and repeated [D's] will move down one field for each keystroke. If you pass the field you wanted to delete you could tab back a field or fields with the [U] for "UP" tab command. When you had the cursor resting on the "Social Security #" field which you wanted to delete you would just press the [K] for "KILL" and the screen would change with the following message being offered:

```
File: SAMPLE   Date: 1/31/81  Rec:Ø

Options: [Y]es, [N]o
Command: -Verify-



Delete
```

4.5.5 This is a verify message, which is checking to see if you really want to delete this field or to change your mind in the event you have made a mistake. If you have pressed the wrong key, and meant to do some other function you may just press press [N] for "NO" and resume what you were doing. If you did indeed want to "KILL" this field, you just press [Y] for "YES" and the field will be deleted and you will be back at the video screen design you were in section 4.5.2 minus the field you just deleted. You then will be able to continue with the operation of adding a field after the "phone number" field. By pressing the [R], for return to add mode you will find the following screen mask appear which is the same screen mask that appeared in the "Create A Data Base" option on the main menu.

```
File: SAMPLE   Date: 12/31/81 Rec:Ø

Options:  ↑ ↓ <-->,[B]egin,CR-sel,[Q]uit
Command: -Position-

KEY:_____          Date:D_______

FIRST NAME:_________  LAST NAME:_____________

ADDRESS:_____________________________

CITY:_________________________  STATE:__  ZIP:_____

PHONE NUMBER:___________
```

4.5.6 This is the same options and commands you had in creating the data base when you first created it. You use the arrow keys to move the cursor to the position on the screen you what to locate the new field. [B]egin moves you to the first field position, which is the key field. The pressing of the [RETURN] key will tell the computer that this is the position you have "selected" for the location of the new field. Use the arrow keys to move to the desired position and the press [RETURN] to indicate that this is the desired position. The screen will go blank, the cursor will remain on the screen where it was and the following message will appear on the options and command lines at the top of the screen:

```
File: SAMPLE   Date:1/31/81   Rec:Ø

Options: -Input-
Command: Name: _
```

4.5.7 You are to input the name of the file you wanted to create at this location. The file we are using in this example is "BIRTHDAY:" so you just type in this name and press [RETURN]. The message now changes and the options and commands line now appear as follows:

```
File: SAMPLE   Date:1/31/81   Rec:Ø

Options:[D]ate,[N]umber,[F]ormula,numbers
Command: Length: _.
```

4.5.8 You can at this time do the same things you did in the create a data base operation. Entering a "D" for "DATE" and pressing [RETURN] will make the field a date field and reserve 8 characters for for the field. The date format will be: mm,dd,yy. The "m" being for month, the "d" for day, and the "y" for year. If the new field you were creating were other than a data field you would have to provide the same information that you would under the create a data base operation. Following is a brief description of how each is done. For a

more complete description see that section of the manual on the create a data base.

4.5.8.1 The last selection of "number" is in lower case to designate that you are entering is a "string" field and you have to set aside so many numbers. This is the same type of field you would have for name or address where it could be alpha characters or a mix of alpha characters and numbers. If you wanted to set aside 10 characters for lets say the secretary's name you could call this field "SECRETARY:" and answer this question with a numeric value and press [RETURN]. The largest number value you could enter would be 127. Thought should be given to the length of the string. If you enter a number like 25 but rarely use more than 12 character, you are wasting space. Using 12 character but reserving space for 25 limits the number of records you can get on any diskette.

4.5.8.2 Pressing the [N] key for a "NUMBER" field is complete different that the previous "numbers" which simply meant enter a number for the length of a string. The [N] in this case means you are entering a "NUMBER" field and more will be required than just pressing the "N" and [RETURN]. Pressing the [N] witype in the format what you wanted, in the event you wanted a special formula. A formula that involved dollars and cents would have to be designated (i.e. F,XXXXX.XX). This follows the same format as the number fields explained in sections 4.5.8.2 to sections 4.5.8.2.3 proceeding. The leading "," indicates that you want the numbers separated with commas where they are applicable. As with the number fields, the comma may be entered in the exact form, or may just proceed the field format. This format is The most observable difference in the four previous examples is that some of the X's are in upper and some are in lower case. This is the one things that makes no difference. You may enter them in either case or you may mix them.

4.5.8.2.2 X'S" and PERIODS - This is the format that you would use to show that the number field is to be represented as a dollar and cents fields. If you had to a dollar and cents amount, when entering data, you would enter the dollar amount, a period, and the cents aount. Ten Dollars and Thirty Two cents would be entered 10.32 [RETURN]. The dollar should be a part of

the name of the field if it is to be shown. If for example the name of field were to be "check amount," you might want to have as the field name the following: [CHECK AMOUNT $]. The dollar sign would always be present.

4.5.8.2.3 "," XXXXX.XX - The only difference in the designation of the this field is that a comma has been added prior to the number format. This would have the following appearance on the "LENGTH" option line when assigning value to the newly created field: "Options: LENGTH N,XXXXX.XX [RETURN]." By entering the comma you are telling the program you want to go to the comma format of numbers where number greater than three digits will be separated by comma's. You could also enter this information in the following manner: Nxx,xxx.xx. It would have the same effect as in the example in the sentence prior to it. The comma in the length selection, wherever located, will tell the program to supply a "," where applicable in the number.

4.5.8.2.4 NUMBER FIELDS WITHOUT PERIODS - The use of number field without periods is useful where number entry is desired but not in the dollar and cents format. This could be particularly useful where you wanted to enter any number and have the ability to total those numbers but you were not interested in entering dollar and cents amounts. You enter the format you want the numbers to appear without the period. You enter the format as you want it to appear you can either start the field with a "," (N,xxxxx) or you may actually separate them as you would when writing them: (Nxx,xxx).

4.5.8.2.5 NUMBER OF X'S - In the above format we have used five "X's" in every example. You <u>do not</u> have to enter five "x's" and in fact should not enter five "x's" unless you will always be dealing with that large a number. If the number you are entering is never going to be larger than "999," then two "x's" will be sufficient, and the use of the comma not necessary. Remember, you should always use the least amount of space in the design necessary to accomplish what it is that you desire. Reserving more space that you will ever need is wasting space and reducing the maximum number of records you will be able to place on a single data base diskette.

4.5.8.3 LIMITATION - The format will always ascertain the length of the number field. There are certain limitations as to the size of the numbers before they fall into exponential notation. Numbers larger than 134,xxx.xx and numbers smaller than .00001 will fall into exponential notation. This may cause a "cutting off" of the value if the exponential notation results in the field being larger than the field size. Also, using format XXX, will result in numbers greater than "9999" or less than "-1000" being "cut off" or truncated. **THE TRUNCATION, OR "CUTTING OFF," OF NUMBERS WILL CAUSE ERRONEOUS DATA IN YOUR DATA BASE.**

4.5.9 FORMULA FIELDS - Formula fields are entered in the same way they were entered in creating a data base. If you remember, during the entering of the field dimensions, you have the following screen mask:

```
File:  SAMPLE    Date:12/31/81  Rec:0

Options: [D]ate,[N]umber,[F]ormula,numbers
Command: Length: _
```

4.5.9.1. To enter a formula, you would type in the letter "F" after the word "LENGTH." You would then have to type in the format what you wanted, in the event you wanted a special formula. A formula that involved dollars and cents would have to be designated (i.e. F,XXXXX.XX). This follows the same format as the number fields explained in sections 4.5.8.2 to sections 4.5.8.2.3 proceeding. The leading "," indicates that you want the numbers separated with commas where they are applicable. As with the number fields, the comma may be entered in the exact form, or may just proceed the field format. This format is for formulas that have dollars and cents in them. You could have a formula that is numbers, and it should be entered in the format as follows: F,XXXXX. The leading comma indicates that comma's should be provided as needed, or you could enter the format in the following manner and it would have the same outcome: FXX,XXX. All of the precautions are explained in detail in section 4.5.8, and the limitations as explained in section 4.5.8.3 apply to the formula field. You cannot use date fields in combination with a formula.

4.5.9.2 FORMULA MASK - The formula is entered, after entering the formula format and pressing [RETURN]. When you press [RETURN] the following screen mask will appear:

```
File:  SAMPLE  Date: 1/31/81  Rec:575

OPTION: -Input-
Command:  Formula: _

# Name:          Len  # Name:           Len
Ø KEY:             5  1 FIRST NAME:      15
2 LAST NAME:      15  3 ADDRESS:         25
4 CITY:           12  5 STATE:            2
6 ZIP CODE:        5  7 BALANCE:          8
8 PURCHASES:       8  9 NEW BALANCE: 9
```

4.4.9.3. ENTERING THE FORMULA - The proceeding screen mask shows you the fields in this record by field number. The flashing cursor behind the word "FORMULA" tells you that you are to enter the formula at this point. The fields are shown, so as to show the user the fields and their number to assist in the creating of the formula. In the proceeding example, the new field created was field "9". If field "9" were a formula field, you could make the formula as follows F(7) + F(8) [RETURN].

4.5.9.4. PRECEDENCE ORDER - The following precedence order should be considered in the use of formulas:

```
( )                 highest priority
functions           -(unary)   +(unary)
^
* \
+ -
< = >               booleans
```

4.5.9.5. In the calculation of formulas, it is important to remember the higher on the list to the top then the higher the precedence, and if on the same line the one that occurs first in the formula will be calculated first.

4.5.9.6.9. NOTES ON FUNCTIONS - It should be noted that "x" can be a mathematcal expression. Functions may not have spaces embedded in them. Using SQR (, for example, will return an error message.) The maximum depth of an expression is 12 levels deep. Beyond that a too complex error is generated. All floating point calculations resulting in error, will return the value of "Ø."

4.5.9.6.1 F(n) - This is the type of formula function used in section 4.4.9.3,proceeding this section, which was used to calculate the total of two fields. Field "n" can be a numeric or string field. You should not use a date field, as it will result in the day, divided by the month, divided by the year, which is of little value. The field number "n" must be in a range from "Ø" to no greater than the last field number used in the data base. In the example, used in section 4.4.9.2 proceeding, field "9" would be the largest field you could use. Use of a number greater than the total number of fields in your data base, will result in a "range error" upon execution. "n" can be used as a mathematical expression.

4.5.9.6.2 INT (X) - This function will return the integer value of "X." This is where integer is highest integer less than "X."

4.5.9.6.3 LN (X) - This function will return the LOG base e of the value of "X."

4.5.9.6.4 LOG (X) - This function will return the LOG base 1Ø of the value of "X."

4.5.9.6.5 ABS (X) - This function will return the absolute value of "X."

4.5.9.6.6 EXP (X) - This function returns "e" raised to the power of "X."

4.5.9.6.7 SQR (X) - This function returns the square root of "X."

4.5.9.6.8. NOTES ON FUNCTIONS - It should be noted that "x" can be a mathematical expression. Functions may not have spaces embedded in them. Using SQR (, for example, will return an error message.) The maximum depth of an expression is 12 levels

deep. Beyond that a too complex error is generated. All floating point calculations resulting in error, will return the value of "0."

4.5.10 After entering the formula and pressing [RETURN], you again will be back to the video screen, as shown below.

```
File:  SAMPLE    Date: 12/31/81  Rec:0

Options:   ↑ ↓ <-->, [B]egin, CR-sel, [Q]uit
COMMANDS:  -Position-

KEY:_______              Date:__________

FIRST NAME:_______________   LAST ____________________

ADDRESS:  ____________________________________________

CITY:  _______________  STATE:  ___   ZIP:  _______

OLD BALANCES:  ________________

    PURCHASES:  ________________

 NEW BALANCES:  ________________
```

4.5.11 You have the option of entering additional fields or [Q]uitting the operation. If you select to add additional fields, you would continue to do so, repeating the proceeding procedure and then press the [Q]uit key. When you press the [Q] for quit, you will be returned to the Edit menu following:

```
File:  SAMPLE     Date:  12/31/81   Rec:Ø

Options: [I],[K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
COMMANDS:   -Select-

KEY:_______              Date:__________

FIRST NAME:_______________   LAST _________________

ADDRESS:  ____________________________________________

CITY:  _______________  STATE:  ___   ZIP:  _______

OLD BALANCES:  _________________

    PURCHASES:  ________________

 NEW BALANCES:  ________________
```

4.5.12 Press [Q]uit to indicate that you have no further additions or editing you want to make in the appearance of the reformated data base you have just created. Take out two blank diskettes. One diskettes is for the master, and the other is for the backup diskette, which you will create at the same time. When you press return, the following screen mask will appear:

```
File:  SAMPLE          Date:  1/31/81   Rec:  575

OPTION: CR
Command: Press RETURN

#  Name:          Len  #  Name:          Len
Ø  KEY:             5  1  FIRST NAME:    15
2  LAST NAME:      15  3  ADDRESS:       25
4  CITY:           12  5  STATE:          2
6  ZIP CODE:        5  7  BALANCE:        8
8  PURCHASES:       8  9  NEW BALANCE:    9
```

4.5.13 This is a final opportunity to look at the format of the new reformatted data base. Press [RETURN], and you will be shown the following screen mask:

```
File:  SAMPLE       Date:1/31/81        Rec:275

OPTION:  CR
Command: Press RETURN

Fields:  9
Record length:  275
Max # of Rec:  683
# of Rec:  Ø
Active #:  Ø
Created:  12/31/81
Updated:  12/31/81
Formula:  1
```

4.5.14 This gives some very critical information about the data base. It tells the number of fields in the data base in the first line. The second line, "RECORD LENGTH," tells the number of bytes used in this new reformatted data base file. The line that has the "MAX # OF Rec:" tells you the maximum number of records you will be able to get on this new data base diskette. The created and updated dates will be the current date that you entered when you loaded the DATA PERFECT diskette, and it asked you the date. The "FORMULA" line will tell you the number of formulas on this data base. Press [RETURN] as directed, and the following formula display will be shown.

```
File:  SAMPLE        Date:  1/31/81        Rec:  0

Options:   CR
Command:  Press RETURN


8   F(6) + F(7)
```

4.5.15 The proceeding screen mask shows that field "8" , if the total of the field "6" and field "7." The user has to just press [RETURN], and the following will appear on the screen:

```
File:  SAMPLE        Date:  1/31/81      Rec:  0

Options: [Y]es,[N]o
Command:  -Verify-

  Drive: 2


Insert [BLANK] Disk
```

4.5.16 Insert the blank diskettes into both drives if you have two, or one if you only have one. You will have told the system of your set up when you loaded the program. Remember that Drive "2" is considered the primary drive, unless you only have one drive. When you press the [Y] for "Yes" the diskette will address drive two. If there is nothing on this diskette, the diskette will be initialized, and the new data base screen will be written to the diskette.

4.5.18 Upon completion of this procedure, the same steps will be repeated on disk, one if you have two disk drives, or will be repeated with instructions to insert a new diskette, if you only have one disk drive. You create the backup diskette at the same time you create the original. With the two diskettes completed, you will be taken back to the "Utilities Menu" where you will go to the "MERGE" option and be allowed to merge the old data from the old data base to the newly created data format. Instruction on how to accomplish that can be found in the following section.

4.6 MERGE - This is the sixth selection on the Utilities Menu. As you can see an asterisk "*" appears after this option which indicates that it requires two drives or that you must repetitively insert either "source" or "backup" diskette as directed during the merging procedure. The merge option allows you to merge data from one data base into another data base. This is very handy when you want to either create a new data base and take much of the data from a different data base and insert it into the new data base. This allows for flexible manipulation of data without tedious reentry of data. If you had created a new field(s) in an old data base to update it to new need you could move all of the previously added data to the new data base without having to reenter the previously keyed in data. YOU HAVE THE ABILITY TO "MERGE" EITHER RANDOM ACCESS OR SEQUENTIAL TEXT FILES THAT ARE DOS 3.3 COMPATIBLE PROVIDING THAT EACH RECORD HAS THE SAME NUMBER OF FIXED ENTRIES.

4.6.1 When the arrows are resting on the merge option, press [RETURN] and the following video screen will appear:

```
FILE:SAMPLE    DATE: 12/31/81      REC:Ø

OPTIONS: NUMBERS
COMMAND: ORDER _.

# NAME       LEN # NAME       LEN
Ø KEY          5 1 ACCOUNT     15
2 INV. DATE    8 3 INV. #       5
4 CAT. #       5 5 QTY.         6
6 UNIT COST    9 7 TOTAL $      9
8 SALESMAN    12
```

4.6.2 This will be a display of the data base you want the data to be merged into, or the new data base. This data base will have been loaded under the typical load operation as explained in section 1 of this manual. Merging of data bases is a simple procedure. You must have but an understanding of how the merge works in order to perform the operation. Data is merged from the old data base into the new one. As the data is retrieved from the old data base it comes in sequential order (field Ø, field 1, field 2, field 3, etc) until all of the fields in each

record has been sent; then, the procedure repeats itself with the next record.

4.6.2.1 When the merge operation is initiated you are asked for the "ORDER:" of the merge. **ALL YOU HAVE TO ENTER IS THE DESTINATION FIELD THAT YOU WANT EACH FIELD SENT TO IN THE NEW DATA BASE, AS IT IS RECEIVED FROM THE OLD DATA, IN SEQUENTIAL ORDER. IF YOU DO NOT WANT DATA FROM AN INDIVIDUAL FIELD (OLD DATA BASE) TO BE SENT TO A FIELD IN THE NEW DATA BASE THEN YOU WOULD ENTER THE VALUE "99" WHEN THAT FIELD CAME FROM THE OLD DATA BASE IN SEQUENTIAL ORDER. YOU MUST ALWAYS HAVE THE SAME NUMBER ENTRIES IN THE "ORDER:" LINE AS THERE ARE FIELDS IN THE DATA BASE YOU ARE MERGING DATA FROM (I.E. YOU MUST TELL EACH FIELD WHERE TO GO, OR ENTER THE VALUE "99" FOR IT IF YOU WANT TO THROW IT AWAY. THE VALUES (FIELDS) AS ENTERED IN THE "ORDER:" OPTION SHOULD BE SEPARATED BY COMMA'S. There are only three different situations that could be encountered.**

1. You are merging a file that has the same number of fields in it that are in the the file you are merging to.

2. You are merging a file that has more fields in it than the file to which you are merging.

3. You are merging a file that has fewer fields in it than the file to which you are merging to.

4.6.3 The command and options lines as shown in section 4.6.1 ask you to input the "ORDER:" you want to merge. It is asking for the destination fields that you want the data entered into. If you will consider the following diagram as being an example of the old data base you could then just start with the number Ø and type in the number in the "ORDER:" question that you want that field to go to. You should tell where you want field 1 to go next, then field 2 and so on till you have told each field where to go. To aid you in knowing where the data is going the new data base design will be shown on the video screen. IT IS A GOOD IDEA TO HAVE MADE A PRINT OUT OF THE OLD DATA BASE TO AID YOU IN THE MERGING OPERATION. YOU CAN OBTAIN A PRINTOUT OF YOUR DATA PERFECT FILES FROM THE VIEW FORMAT/PRINT OPTION ON THE

UTILITIES MENU. Following is an example of how the old data base would look:

```
          OLD DATA BASE

FILE: OLD DB   DATE: 06/04/81 REC:991

# NAME       LEN  # NAME        LEN
0 KEY          5  1 ACCOUNT     15
2 INV. DATE    8  3 INV #        5
4 QTY          6  5 UNIT COST    9
6 TOTAL $     10
```

4.6.4 First, consider a situation where there are two data bases which are the same length to be merged together. When asked the question "ORDER:" you could do one of two things. Pressing [RETURN] would enter the records field 0 to field 0, field 1 into field 1, field 2 into field 2, etc.. If you want them entered into different fields you would type them in the order in which you want them to be merged. Typing the order: 0,5,6,3,2,1,4 would cause the data to be merged in the following way:

OLD	0	1	2	3	4	5	6
	↓	↓	↓	↓	↓	↓	↓
NEW	0	5	6	3	2	1	4

4.6.5 As you can see from this example, the data would be merged from field 0 into field 0, field 1 into field 5, field 2 into field 6, field 3 into field 3, field 4 into field 2, field 5 into field 1 and field 6 into field 4. When asked the "ORDER:" you would enter the following: 0,5,6,3,2,1,4.

4.6.5.1 After entering the numbers, the question is asked as to wheather the old file was created under Atari DOS or under LJK DOS is asked. Old files under LJK DOS would be ones creaed with DATA PERFECT or LETTER PERFECT. The question will be asked:

```
File: Sample  Date: 12/31/81  Rec:12

Options: [Y]es,[N]o
Command: -Vefify-

Atari DOS?
```

4.6.5.2 Answering [Y]es will place you is Atari DOS mode and answering [N]o will place you in LJK DOS mode. After ansering the DOS question, you will be asked to "Insert disk" (the old data base diskette) into drive 1, which is th data base you want to merge from. Upon doing this you will press [Y]es for the "Verify" prompt and there will be a catalog of the "old data base" file. The prompt says "NAME." You are to enter the name of the file you wnat to merge into the new data base file. If the file name were "CUSTOMERS," you would enter that name. You are to enter the name of the file you want to merge into the new data base. Since the program supports files created under more than one kind of DOS the filenames entered must have the extension typed if there is one. If you are merging from a Data Perfect file, be sure to add the extension ".DB" to the filename, or a file not found error will result. At this point the program differs according to the number of disk drives that you have. If you have only one disk drive, the program requies you to swap diskettes between backup and source diskette. If you have only one drive you will be instructed to insert old data base first and then alternately the data base you are merging to. If you have a two drive system you will place the merge from diskette in drive 1 and the merge to diskette in drive 2. The "Order" of the merge will be entered as discussed in section 4.6.5 proceeding.

4.6.6 The second situation is where you would be moving data from a data base (old) that has more fields in it than the data base (new) to which the data is being moved. When asked to enter the "ORDER:" you would enter the numbers in the order you want them merged from the old data base into the new data base entering the value "99" for a field you want to "throw away."

OLD	Ø	1	2	3	4	5	6	7	8	9
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
NEW	Ø	1	99	2	5	4	99	99	99	99

4.6.7 In this example you have the new data base that has fields Ø to field 5 (six fields), and you would be merging data from a data base (old) that has 1Ø fields in it. Data would be merged in the following fashion: Field Ø into field Ø, field 1 into field 1, field 2 is thrown away, field 3 into field 2, field 4 into field 5, field 5 into field 4, fields 6,7,8, and 9 are thrown away (YOU CANNOT PUT FIVE GALLONS OF GAS INTO A ONE GALLON GAS CAN). **NOTE:** Field 3 in the new data base will have no data merged into it. This would be a field that has no mergeable data in the older data base and the information will be entered in the updates section of the program at a later date.

4.6.7.1 Again, after entering the order you will have to go through the same series of steps as outlined in sections 4.6.5.1 to sections 4.6.5.2.

4.6.8 The third situation is where you are moving data from an old data base that has fewer fields in it than the data base into which the data is being merged. Consider the following example:

OLD	Ø	1	2	3	4			
	↓	↓	↓	↓	↓			
NEW	99	5	1	6	2	(Ø)	(3)	(4)

4.6.9 As you can see, the old data base has only 5 fields in and you want to merge this data into a new file that has 7 fields. When asked the question "ORDER:" you would enter the following merge order: 99,5,1,6,2 [RETURN].

4.6.10 When the data was merged from the old data base (the smaller data base) into the new data base (the larger data base) the data would be merged in the following fashion: Field 0 would be thrown away (99). Field 1 would be merged into field 5, field 2 into field 1, field 3 into field 6, and field 4 into field 2. Fields 0, 3 and 4 would not be involved in the merge (YOU CANNOT FILL A FIVE GALLON GAS CAN WITH ONE GALLON OF GAS).

4.6.10.1 After entering the "Order" of the merge you would again proceed through the questions asked. These question are the same as expalined in the previous two sections and are explained in section 4.6.5.1 and section 4.6.5.2.

4.6.11 IN A MERGE THE ONLY POINT YOU HAVE TO KEEP IN MIND IS THE DESTINATION FIELD THAT YOU WANT EACH FIELD SENT TO IN THE NEW DATA BASE. EACH FIELD WILL BE SENT FROM THE OLD DATA BASE IN SEQUENTIAL ORDER, YOU DEAL THEM OUT AS YOU RECEIVE THEM. IF YOU DO NOT WANT DATA FROM AN INDIVIDUAL FIELD (OLD DATA BASE) TO BE SENT TO A FIELD IN THE NEW DATA BASE ENTER THE VALUE "99" WHEN THAT FIELD IS ENCOUNTERED IN ORDER. YOU MUST ALWAYS HAVE THE SAME NUMBER OF ENTRIES IN THE "ORDER:" LINE AS THERE ARE FIELD IN THE DATA BASE YOU ARE MERGING FROM (I.E. YOU MUST TELL EACH FIELD WHERE TO GO WITH THE FIELD NUMBER OF ITS DESTINATION OR THROW IT AWAY WITH A "99.") THE FIELD AS THEY ARE ENTERED SHOULD BE SEPARATED WITH COMMA'S.

5.0 REPORTS is the menu selection that enables you to print reports in many different formats with the data that has been entered into your data base. For those individuals familiar with "RPG" or "REPORT GENERATION," this section will be very easy and just as functional in it operation and use. This is the fifth item on the main menu. With the arrows resting on this selection, press [RETURN], and the following menu will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:0

Options: < > CR
Command: -Select-

     Reports Menu

     Drive: 2


=>   Load            <=
     Print
     Create/Edit
     Save
     Delete
     Return to Menu


     DATA PERFECT
```

5.1 LOAD is the process of loading a report that has already been created for printing. Is is possible to have several reports designed that will allow you to generate reports on the information in your data base in several different ways. While the arrows are resting on the "LOAD" option your press [RETURN]. If you have a report already in memory you will to "Verify" that you want to erase that report. This will give you an opportunity to save a report that had just been created and not saved to diskette. If a report is in memory and you go to load another report you will have the following screen mask appear:

```
File: SAMPLE   Date:12/31/81  Rec:0

Options: [Y]es,[N]o
Command: -Verify-

     Reports Menu

     Drive: 2


=>   Load            <=
     Print
     Create/Edit
     Save
     Delete
     Return to Menu


     Erase report?
```

5.1.2 The difference in this screen mask is that you are being asked to verify that you want to erase the report that is in memory. If you answer [N]o you will be back at the previous menu. You can SAVE the report before proceeding. Answering [Y]ES will erase the report in memory, do a CATALOG of the diskette in memory and ask you to type the name of the report you want to load. The screen mask will appear as follows:

```
File: SAMPLE   Date:12/31/82  Rec: 1

Options: -Input-
Command: Name: _

SAMPLE  DB   167        WEEK    RPT    9
DAY     RPT    9        MONTH   RPT    9
MAIL    LBL    9

Free:  9
```

5.1.3 The options line tells you to "-INPUT-" the name of the report you want to load. In this example there are 3 report

files: WEEK, MONTH, and DAY. All report files have the suffix '.RPT' on the end of the filename. When you input the filename, you do not have to enter the suffix as the system will do that for you. Attempting to load a label file (MAIL in this example) will generate a file not found error even if you enter the extension .LBL as the extension will be replaced when searching for the filename. Upon inputing the name and pressing [RETURN], the report file will be loaded and you will be back at the "REPORTS MENU." To abort the loading of a report you just press [RETURN] without inputing a name.

5.2 PRINT is the second menu selection on the reports menu. You only have the option to output the reports to the printer, i.e. you cannot output it to the screen. With the cursor resting on this selection you should press [RETURN], and the following will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: numbers
Command: Pages: _
```

5.2.1 This option allows for the printing of pages "x" through pages "y" of a report. The smallest "x" may be 1 and the largest "y" may be 255. Pressing [RETURN] without entering a number will print the entire report. If you want to print only specific pages of a report you may enter the page numbers in the following fashion in order to obtain those pages.

1. x - print page x only -
2. x, - print page x to end of report -
3. x,y - print page x through page y -
4. ,y - print page 1 though page y -
5. [RET] - print entire report

5.2.2 This program is designed for 11 inch long pager and will print 60 lines per page. After printing 60 lines, the program

will automatically perform a paganation (automatically go to the top of the next form).

5.2.3 After entering the numbers desired or pressing [RETURN], you will be asked to establish the search criteria of the report you want to generate information from. The screen mask will appears as follows:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Search by-

KEY: _ _ _ _ _ _   Date: D _ _ _ _ _ _ _ _ _ _

NAME _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ADDRESS: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

CITY: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

STATE: _ _   ZIP CODE: _ _ _ _ _ _ _ _ _ _
```

5.2.4 You select the search criteria at this point. You may search on up to four fields, with a maximum of two different criteria in each field in addition to the record number. This means you will be able to search on a total of nine different criteria. You should read section 3.4.3 to section 3.5.4.2 which explained the searching capabilities of this program in detail.

5.2.5 You select the criteria you want to search upon and then press [Q] to initiate the search. Upon pressing [Q], the following message will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [Y]es,[N]o
Command: -Verify-



     Position Paper
```

5.2.6 This message is an indication to you that the program is about to initiate the search and begin printing the report. You should check to see if you have paper in your printer, that the printer is on, and ready to receive data. If you want to abort the operation you should perform a [N]O, which will cause you to go back to the reports menu and abort the entire procedure. Press the [Y]ES option, and the report printing procedure will begin. When the report has been printed you will be returned to the reports menu.

5.3 CREATE/EDIT - This is the powerful part of the report menu. This is where you can create reports. You can create reports in a design that will fit your needs. One data base may be expressed in many different ways according to the needs you have and the different way you want the information expressed. There are two parts to the CREATE/EDIT mode. There is the ADD mode, and the EDIT mode. The "ADD" mode is where you create the report itself, and the "EDIT" mode is where you change any of the report before saving it to diskette.

```
ADD MODE: [C],[N],[E],↑ ↓ <-->,[B]egin,CR-sel,[Q]uit
     SELECT MODE: [B]old,[T]otal, @DRN#F"I

EDIT MODE: [K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
```

5.3.1 When you first enter the CREATE/EDIT mode you will be asked the following question:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: numbers
Command: Printer width: [80]
```

5.3.1.1 Pressing [RETURN] will select this default value of 80 character wide paper. If you are in the edit mode and set the width to any value other than 80 character then that will remain the default value for that report. If you have a printer such as an Epson MX-100 and you want to enter "100" for that printers wider carriage you may do so.

5.3.1.2 It is important that your printer not generate line feeds on its own. This generation of a line feed occurs when the printing exceeds 80 characters. If you enter a number larger than "80," your printer can generate a line feed, and this will cause problems in regards to printing 60 lines per page. If you printer only allows 80 characters on a single line, accept this default value, and do not enter a larger number.

5.3.2 The next question that is asked is in regards to the printer initilization. That question is:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: numbers
Command: Printer init: _
```

5.3..2.1 INITILIZATION in this programs tells the printer which font you want to use. With this command you can indicate the different font you wish to use with your printer. The sequence of entry is up to 7 codes inserted in the CHR$ fashion. When there are more than one decimal number they should be separated by comma's. If your printer requires high bit on these codes (all Atari output is normally low bit) then you should enter the numbers in excess 128 form. (i.e. 15 would be entered as 143) This program will not force the high bit on any

number. The only number that cannot be added is "0." If you enter more than 7 numbers, they will be truncated off and only the first 7 will be sent to the printer. These codes will be sent to the printer when the printer is first turned on. As an example if you wanted to print a report in with the Epson MX-80 printer in the condensed font you would enter the value "15" when this question is asked. To set the condensed font on the Centronics 737/739 printer you would enter the values "27,20." Entering no number means that no value will be sent to the printer and will therefore select the default font for your printer.

5.3.3 BOLD ON is the next question asked and is asked in regards to boldfaced type. Boldfaced type for this program is expressed as the expanded dot matrix font. If your printer does not have double width characters then you cannot use boldface in this program. Attempting to use boldface without double width characters will throw the printed output off in its columnar spacing. To turn the boldface on with the Epson you would enter the CHR$ value 14. The Centronics 737/739 printer would use the value 27,14. You may use a total of three codes separated by comma's when turning bold face on. Values over this will be truncated. The question regarding bold face will be expressed as follows:

```
File: SAMPLE   Date: 12/31/81 Rec:1

Options: numbers
Command: Bold on: _
```

5.3.4 BOLD OFF is asked asked after entering a value to turn the bold face type on and pressing [RETURN]. The codes are entered in the same fashion as with the bold on and the same 3 value restriction applies to the bold off commands. The Epson printer would be turned off with the decimal value "15," and the Centroncis 737/739 is turned off with the "27,15" command. The option to turn bold off would appear as follows:

```
File: SAMPLE   Date: 12/31/81 Rec:1

Options: numbers
Command: Bold off: _
```

5.3.5 LEVEL BREAKS - After entering the value to turn bold face off and pressing [RETURN] will cause the screen mask to appear as follows. This will give you the opportunity to enter level breaks into the program. Level breaks are breaks that would occur when there is a change in the criteria of the data and would cause subtotals to be printed on the fields that you had indicated you wanted totaled in the creation of the report. You could for example do a level break on the date causing subtotals to be printed when the date changed. Entering no level break will cause no breaking of the report and no subtotaling of the report. You will have a "GRAND TOTAL:" printed on any fields you had indicated you wanted totaled when you were creating the report file. Along with the option to enter level breaks the fields in the file and their field number will be displayed to assist in the picking of the level breaks. This will appear as follows:

```
File: SAMPLE   Date: 12/31/81 Rec:1

Options: numbers
Command: Level: _

 #   Name:     Len   #  Name:        Len
 0   KEY        5    1  DATE          8
 2   ADDRESS   20    3  CITY         10
 4   STATE      2    5  ZIP           5
 5   BALANCE    8    6  SALES         8
 7   NEW BAL$   8
```

5.3.5.1 The entry of level breaks follows the format of x.y,x.y... where "x" is the level field to break on and "y" is an optional number of blank lines that you want to occur after the level break has been printed. A period "." is used to separate the field and value of spaces. If you enter the "x" value and do not enter the "y" value, the values of "1,2,3, and 4" are entered respectively. This is to say, you will have one

space after the first level break, two spaces after the second level break, 3 spaces after the third break and so on. Multiple level breaks are separated by placing a comma "," between them. If you use the the number "99" for the blank line spacing of a level break to occur on you will have a "FORM FEED" occur. A form feed is paganation or going to the top of the next form after printing the level break. This will allow for level breaks to be separated by pages. You should choose the level breaks in the ascending order of priority. For example, you could select level breaks by entering the line: "1,2.3,3.99." This example would ask for 3 level breaks to occur. The first (most often) would occur on field "1" with 1 blank line after it. The second level break would occur on field 2 with 3 spaces after it. The third level break would occur on field 3 and would have a form feed occur after it was printed. When the report is printed the following will happen: If field 3 changes it will cause a level break on field 1 and then field 2 before finally breaking on field 3. What this amounts to is that the field level breaks are entered in ascending priority. When the data base is prepared, it should be prepared by sorting in the **reverse** order of level priority. In this example, the file should have been sorted by the command of 3,2,1.

5.3.5.2 Level Breaks occur when there is a change in the field data from one record to the next. Level breaks can be based upon dates, zip codes, numbers fields or any field in the data base. It is not necessary that you enter level breaks, they are entered only when you want a subtotaling or break in data when the critical information in the data base changes.

5.3.6 Press [RETURN] after entering the level breaks and the program will enter the "Add Mode" of the Reports Generator. The "Add Mode" is where you create the format (appearance) of the report. The screen mask will appear as follows:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [C],[N],[E],↑ ↓ <-->[B]egin,CR-sel,[Q]uit
Command: -Position-

#    Name:          Len  #    Name:          Len
Ø    KEY:             5  1    DATE             8
2    NAME:           25  3    ADDRESS:        25
4    CITY:           15  5    STATE:           2
6    ZIP CODE:        5  7    PHONE:          11
8    BALANCE $        8  9    PURCHASES        8
10   NEW BALANCE$     8 11    INVOICE #        5

  12345678901234567890123456789012345678901234567890
1
2
3    HEADER:  This term will be displayed
4               while you are on these first
5               seven lines.
6
7 _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
1     DETAIL:  This term will be displayed
2              while on these two lines.
```

5.3.6.1 At this point you are going to enter the information you want on the header of the report. You will have 7 lines of header spaces available for your use and 2 lines of detail information for your use. Following is the way that a finished report form might look in 8Ø column video. In 4Ø column video it would look the same, however, the information will be split and you will be able to view the information only with the horizontal scrolling that is used with 4Ø column video. We will work through the creating of the report header you see below in the following section.

```
  12345678901234567890123456789012345678901234567890123456789012345678901234567890
1 DATE                      LJK ENTERPRISES, INC.                        PAGE #
2 12/31/81                    P.O. BOX 10827                              @@@
3 DAILY REPORT              ST. LOUIS, MO 63129
4 ==================================================================================
5 ACCOUNT NAME            ADDRESS                    STATE
6 INV #   INV DATE  CITY          ZIP CODE OLD BALANCE                NEW BALANCE
7 ==================================================================================
  ######################## ######################    ##
  #####  ####### ############  #####  +#########                  +#########
```

5.3.6.2 This is the add mode of the report writing portion of the program. You have displayed one of two things according to the type of video that you have. If you have 40 column video you have the screen mask as displayed above. If you have 40 column you have all eighty columns displayed and the numerical line (1234560123...) will total to eighty character. In either case you will have the fields numbers, name, and length displayed. This display will assist you in designing the report you are going to create. The options line has the following commands available and they are explained in detail in the following section:

C	- CENTER -	the following information
N	- NEXT -	place entry at cursor location print next to adjoining data at time of printing
E	- END -	move to end of the line
↑	- UP -	move cursor up one line
<-	- LEFT -	move cursor left one column
↓	- DOWN -	move cursor down one position
->	- RIGHT -	move cursor to right one position
[B]EGIN	- BEGIN -	move to the beginning entry
CR-SEL	- RETURN -	select cursor location to enter information for report format

5.3.6.2.1 [C] or CENTER - No matter where the cursor is resting on the video line when you press [C] it will cause the information to be centered when it is printed. In effect you are telling the position you have selected is the center of that line. The centering function will take advantage of the bold face (expanded) font as well. It is important to note that centering is done at **entry** time and not at printing time. Therefore, the centering of field data will not necessarily be centered for all data printed. The centering capability is best used for the centering of titles in the header line of a report. You should not attempt to center two strings of information on the same line.

5.3.6.2.2 [N] or NEXT - Next has the same effect as pressing [S] for select or [C] for center. This selection will place the data that you want entered in the header or detail section of the reports at the current cursor location, but will at print

out time, attempt to place the the data adjoining the to the previous field entered. This does not have many applications in the preparation of a report, but has many applications in the preparation of mailing labels. This in effect removes all spaces so that you do not have large spaces appearing because some data is longer than others. Typically if you used "NEXT" on a line, you would use in for every entry that followed, so that you would have a continuous printing of information. This would not be true in the case where you wanted to start a report with the last name followed by the first name. To start the report we would first position the cursor at the beginning of the line with the "B" command. Press [CR] to indicate the selection of the position. Press "#" and the field number for the last name so that data would be entered into that location when it is printed. Immediately after the last name you would enter a the "N" for selection and use a literal space (i.e. "_) to separate the two names and then use an "N" selection and enter the data field for the first name. The "N" field does not have to be directly after the proceeding field. There can be spaces between them. It is important to remember that it should not go on top of the earlier field or it will start at the field before that. Since report lines can be entered in any order, it is also important to remember that any next fields must be entered after the field that they proceed, and that if you want spaces to occur between them you must enter those spaces as literal fields that contain spaces as the field.

5.3.6.2.3 [E] or END - This command moves the cursor to the end of the printed line. Note, this is not the end of the video line and the screen will horizontally scroll if the printer width is wider than than the video width. In the representation below we have illustrated an 80 column report header and have cut it in half to show that you would have two screens of information that would be visible. If you had performed the [E] command you would only be able to see what was on the right side of the 40 column screen picture.

```
  12345678901234567890123456789012345678'  901234567890123456789012345678901234567890
1 DATE                          LJK ENTERI  PRISES, INC.                        PAGE #
2 12/31/81                        P.O. B:   OX 10827                             @@@
3 DAILY REPORT                  ST. LOUIS   , MO 63129
4 ==============================            ==================================
5 ACCOUNT NAME            ADDRESS                   STATE
6 INV #   INV DATE  CITY          ZIP C     ODE OLD BALANCE                NEW BALANCE
7 ==============================            ==================================
  ######################### ############    ###########    ##
  #####  ####### ############## ####        #  +#########              +#########
```

5.3.6.2.4 Arrow keys -- You will be able to move the cursor to the position on the report that you want information to be entered at which time you will press the [CR] for select key to indicate to the program you want to locate information at this point to be printed for the report.

5.3.6.2.5 CR - SEL This selects the location on the report that you want to enter a field name or data to be printed.

5.3.6.2.6 [B]EGIN - This will move the cursor to the first column of the line to be printed. This is the opposite command for the [E] command and like the end command when you are printing a report that is larger than the width of the video screen the screen will scroll horizontally. Because of the speed of the program you may be on the first column so quickly that you fail to see information on the trailing portion of the same line that has been scrolled off the screen.

5.3.6.2.7 [Q]UIT for quit will exit the add mode and enter the edit mode. This will only happen if there has been one entry made in the table. If you have made no entries, and wish to exit the create mode without proceeding you may do so with the [BREAK] operation. The "EDIT" mode is explained in section 5.3.7.1 of this section and you should proceed to that section to get a better understanding of it's operation.

5.3.6.3 The selection process is indicated by one of the keystrokes explained from section 5.3.6.2.1 to sections 5.3.6.2.6. The selection process gives you great flexibility in moving the cursor to the position you want to locate data or a title for the report. After having selected the point the information you want to be placed at that point you must then indicate the infomation itself, so that it may be removed from the data base and placed at this position. There are 8 distinct commands that are used. They may be prefixed with 2 commands. Both the command (operation codes) and the prefixes may be entered in upper or lower case. The prefixes can be entered in any order but they must be entered prior to the opcode (operation code).

PREFIX CommandS - The prefixes are "B" for boldfacing the entry, and "T" for totalling the entry. Remember, you can only boldface dot matrix printers that support the expanded double width character. The total operation can be done only on field data and formula field entry. The total, "T," prefix is placed prior to those fields that you want totalized in the level break option. After indication the position and your intention to place information at the cursor location, the command and options line will change to look as follow with these prefix characters, and "opcodes."

```
File: SAMPLE   Date:12/31/82  Rec:167

Options: [B]old,[T]otal,@DRN#F"I
Command: -Data-

#    Name:          Len  #    Name:          Len
Ø    KEY:             5  1    DATE             8
2    NAME:           25  3    ADDRESS:        25
4    CITY:           15  5    STATE:           2
6    ZIP CODE:        5  7    PHONE:          11
8    BALANCE $        8  9    PURCHASES        8
1Ø   NEW BALANCE$     8 11    INVOICE #        5

12345678901234567890123456789012345678901Ø

     Header:
```

5.3.6.4 The "PREFIXES" are the first two entries on the options line, they are followed by the series: @DRN#F"I. This series are the opcodes. Following is a brief description of each.

5.3.6.4.1 "@" - Print the current page number. The number output will be replaced with the page number of the report starting at the number 1. The number will be in 3 digit form with proceeding Ø printed as blank spaces. (i.e. page ØlØ will be printed as " 1Ø"). To have the page number printed you would

enter the at symbol, @, and they press [RETURN]. If you wanted the word "PAGE" printed prior to the number you would accomplish this by entering the word page as a "literal" prior to the at symbol.

5.3.6.4.2 "D" - Print the current date. You enter the letter "D" as your selection and press [RETURN]. The date will then be automatically entered in this position. You do not have to enter the date as this information is obtained by the program from you having entered the date when you loaded the program. To print only a portion of the Date, you can enter Dn. Where n represents the number of characters you want printed. For example, to print only the month and day, we would enter D5.

5.3.6.4.3 "R" - Repeating Character on the screen. Quite often on a report you will want a line drawn across the page to separate the header from the detail information. You would do this by pressing: "R=,80". The "R" says you want a repeating character, the "=" sign indicates the repeating character you want, and the 80 indicates how may times you want to have the character repeat. You can either enter a comma or a period between the repeating character and the number of times you want it to repeat.

5.3.6.4.4 "N" FIELD NAME - This will print the field name associated with it. You would enter the "N" and then the number of the field that corresponds with what you want printed. If you enter just the "N" and press [RETURN] you will be prompted to enter a number for a field from the fields that are displayed just below the commands and options line. Consider the following field:

#	NAME:	LEN
3	ADDRESS	15

5.3.6.4.5 Pressing [CR] for select would indicate you wanted data printed at the cursor location. If the data were the address title you would enter "N3 [RETURN]." This would cause the title "ADDRESS" which is field "3" to be printed at this location and would appear on the video screen as such.

5.3.6.4.6 You can further use this technique to enter just part of the name if you only have room for part of it. Entering "N3,3 [RETURN] would cause the same thing to happen as above but the first three characters only would be printed, or the title would be "ADD."

5.3.6.4.7 "#" FIELD DATA - This will print the data for a particular field number that is entered with it. Entering the pound sign "#" and the field number will cause the data that were entered in a particular data base to be printed at that location. If you were to have the title "ADDRESS" printed in the header portion of the report and wanted the data itself printed in the detail section, this could be done easily with this command. Pressing [#] followed by the field number of the data you want inserted will cause that information be entered in the report at that location when the report is printed. If the field is a number or a formula, there can be an option output format specification. This will allow for number fields to be larger in the printed format than they are in stored format. This is important in that you might want the report to total several fields where the combined total format would be larger than any single entry format. An example of a field with a format declaration would be: #3.xx,xxx.xx. The "#" sign tells the program you want the data from field "3" to be displayed in the "xx,xxx.xx" format. If you wanted this field to be totalized when the level break was performed you would enter the prefix "T" prior to the information as follows: T#3.xx xx.xx. This would appear as follows on the video screen mask: +#####.##. If you just enter the "#" and press [RETURN] then you will be asked to enter the field data from an -INPUT- prompt.

5.3.6.4.8 "F" FORMULA - The formula allows you to have formulas entered into a report. This allows you to create new data from the data that is already in the data base. The formulas are entered in the same way that they are entered in the create a data base, and with the same criteria for entering. Read section 2.6.4 of the manual for a greater explanation of the formula entering procedure. The formula can be any type of mathematical operation on one or several different fields within the data base. Different reports can be generated on the same materials with the information being expressed in several

different ways. Expressions can be prefixed with "T's" for totalizing them and in larger number format for output than they were entered. An example of a totalized formula entry might be: TF xxx,xxx.xx with the formula being f(4)*f(5)/(f(6)*100).

5.3.6.4.9 " LITERAL - A literal is just what the word indicates. You want to literally print in that space what follows the quotation mark ("). If you wanted a title in the report that was different than the title that appeared in the data base, you could enter that title as a literal. Pressing [CR] for select, "TOTAL COST, would cause the title "TOTAL COST" to be printed in the header. In the detail sections you could have any information entered, i.e. the shipping cost of all order, where the report was one that was to be a report on the shipping cost of a small business operation.

5.3.6.4.10 "I" CONDITIONAL - The conditional type of statement is one in which information will be printed only if certain conditions are met in the data. The data that is generated is literal in nature of output and can be printed on up to 3 conditions. The three conditions are: negative, zero, positive. They are always separated with the blackslash (\) character. Let us consider a data base where you were keeping a check register as a data base and were entering checks as either withdrawals (checks), voided checks (0 amounts), and deposits (positive values). Entering an expression: ICheck\void\deposit as a conditional statement will cause the following to happen. When the data is checked it will be printed as a "check" if it meets the first criteria (i.e. a negative amount). If it is a zero value it will be printed as "Void". If it were a positive value it would be printed as "Deposit." The value that is present in the data base will set the condition for the word that is to be "literally" printed. The order for entering the information must always be in the proper sequence. That sequence again is negative\zero\positive. The literals themselves (what it is you will have printed) must be separated with a blackslash character (\). After entering the conditional you want entered you would then press [RETURN]. The command line then changes and asked for the -FORMULA-. You would enter: F(n) "n" would be the field you wanted the conditional to be based upon. In most cases you would then use only one field, you could have a mathematical formula performed upon the field. If you used the conditional to express the status of the

transaction as CHECK\VOID\DEPOSIT, with the formula entered being f(8), when field 8 was the transaction field in keeping a check record, you would most likely want to have the field data entered after the conditional input so you would know the amount of the transaction. You would just enter this as explained in the section on entering data, i.e. #8.

5.3.6.4.10.1 In a general ledger type of example you would only want to enter debits and credits. There would be no void type of information. In the data entry mode you would type IDEBIT\\CREDIT. As you can see, there has been no entry for the zero value, therefore, this conditional would print only word "DEBIT" it it were a negative value and "CREDIT," if it were a positive value. You would have no 0 value entries. You might want the following type of entry in the detail line of a report on a data base.

DATA ENTERED	HOW APPEARS IN REPORT
IDEBIT\\CREDIT	IIIIII
#8	+####.##

5.3.6.4.10.2 If this were entered in the field of a report in might appear as follows: IIIII +####.##. When it were printed out in the report it would appears as follows if it were a debit: DEBIT -1316.37. If it were a positive value it would be printed as a credit and would appear as follows: CREDIT 1316.37. The two differences are the word debit and credit and the fact that when it is a negative value the minus sign (-) will be printed, but when it is a positive value it will not be printed.

5.3.6.5 Any invalid entries will be signaled with the appropriate error messages and would not allow the entry to be entered. After the entry is successfully made, the data is printed to the screen and the cursor is moved to the next location on the screen. Bold faced entries will have trailing underlines to signal the presence of twice the character spacing there actually is represented on the screen. Remember, boldface can only be expressed as expanded print with this program, so it

will take twice the space as represented on the screen. These trailing spaces are show so as to aid you in designed the header with the boldface being unable to be expressed on the video screen.

5.3.7 Having created you report format you can save it to diskette for using at a later date so that you would not have recreate it. Having complete the last line you would press "Q" for QUIT. AT this time the options and command line will change as follows:

```
Options: [K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-
```

5.3.7.1 This is the "EDIT" mode of the report create option. You can move from field to field in the following manner:

[U]P	Tab up one field
[D]OWN	Tab down one field
[B]EGIN	Tab to the first field

5.3.7.2 The other options allow you to edit the report you have created in the following manner:

[K]ILL	Kill the field at this position
[R]ET	Return to the add mode
[S]EL	Select this field for editing
[Q]UIT	Quit the edit mode

5.3.7.2 All of the edit functions are explained in detail in section 2 on create a data base. [Q] for "QUIT" is the option that will remove you from the edit mode to save the report.

5.3.7.3 Pressing [Q]UIT to quit the edit mode cause the following options and command line to appear:

```
Options: Blank lines
Command: Header: [Ø]
```

5.3.7.4 The question you are being asked is: "How many blank lines do you want from the top of the page after we print the header you have created?" Enter the value that suits your taste.

5.3.7.5 Having entered the value for the header spacing the options and commands line will change to the following:

```
Options: Blank lines
Command: Detail: _
```

5.3.7.6 At this point you have to indicate the number of blank lines you want between each detail record. If your detail for each record is two lines long rather than the customary one, you may wish to separate each record with one or more blank lines.

5.3.7.7 After entering the value that please you, you will automatically be returned to the reports menu. You should at this point move to the next option on the menu "SAVE" and save the report to diskette. This means you may save a report to the data base diskette and load it for using in the future. Report may then be generated on the same material on a periodic basis.

5.3.8 Pressing [RETURN] while on the save option will cause the following information to be displayed on the video screen:

```
Options: -Input-
Command: Name: _
```

5.3.8.1 Save the report at this point by just typing in the name you want behind the name prompt. Keep it shorter than 8 characters. It will be saved as that name with the extension ".RPT" on the catalog of the data diskette. This will remind you it is a report when you want to load it at a later date.

5.3.8.2 Saving the report is complete by pressing [RETURN], which will cause disk I/O and then return you to the reports menu.

5.3.9 The last two selections are self explanatory. Delete allows you to delete report formats you no longer want on the diskette and have no use for. Pressing [RETURN] with the cursor on this selection will cause the same options and commands question to occur that occur in saving of a report in section 5.3.8 above. Enter the name and press [RETURN] and the report format will be delete from the diskette.

5.3.10 RETURN TO MENU will cause you to return to the main menu from the reports menu. If you attempt to return to the main menu and have a report in memory you will first have to answer the following question:

```
Options: [Y]es,[N]o
Command: -Verify-

Erase report?
```

5.3.11 You must first indicate to the program it is alright to erase the report in memory. This is a fail-safe in the event that you have forgotten to erase the report and you must therefore erase it before you exit this section of the program.

6.0 MAILING LABELS is the menu selection that enables you to print mailing labels For those individuals familiar with "RPG" or "REPORT GENERATION," this section will be very easy and just as functional in it operation and use. This is the sixth item on the main menu. With the arrows resting on this selection, press [RETURN], and the following menu will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:0

Options: < > CR
Command: -Select-

     Labels Menu

     Drive: 2


=>   Load            <=
     Print
     Create/Edit
     Save
     Delete
     Return to Menu


     DATA PERFECT
```

6.1 LOAD is the process of loading a mailing label that has already been created for printing. Is is possible to have several mailing labels designed that will allow you to generate mailing labels on the information in your data base in several different ways. While the arrows are resting on the "LOAD" option your press [RETURN]. If you have a mailing label already in memory you will to "Verify" that you want to erase that mailing label. This will give you an opportunity to save a mailing label that had just been created and not saved to diskette. If a mailing label file is in memory and you go to load another mailing label file you will have the following screen mask appear:

```
File: SAMPLE   Date:12/31/81  Rec:0

Options: [Y]es,[N]o
Command: -Verify-

     Labels Menu

     Drive: 2


=>   Load            <=
     Print
     Create/Edit
     Save
     Delete
     Return to Menu


     Erase report?
```

6.1.2 The difference in this screen mask is that you are being asked to verify that you want to erase the mailing label that is in memory. If you answer [N]o you will be back at the previous menu. You can SAVE the mailing label before proceeding. Answering [Y]ES will erase the mailing label in memory, do a CATALOG of the diskette in memory and ask you to type the name of the mailing label you want to load. The screen mask will appear as follows:

```
File: SAMPLE   Date:12/31/82  Rec: 1

Options: -Input-
Command: Name: _


SAMPLE  DB     197      WEEK    RPT   9
DAY     RPT      9      MONTH   RPT   9
MAIL    LBL      9

Free:  9
```

6.1.3 The options line tells you to "-INPUT-" the name of the mailing label you want to load. In this example there are 3 reports and 1 mailing label files. The name of the file appears in the status line and also before the catalog. If you attempt to load this file you will get the message "FILE NOT FOUND." The mailing label files are marked by the fact that they have the ".LBL" following the name of the file. In order to load these mailing label files you have but to type in the name with or without the extension ".LBL." Upon inputing the name and pressing [RETURN], the mailing label file will be loaded and you will be back at the "MAILING LABELS." To abort the loading of a mailing label you just press [RETURN] without inputing a name.

6.2 PRINT is the second menu selection on the mailing labels menu. You only have the option to output the mailing labels to the printer, i.e. you cannot output it to the screen. With the cursor resting on this selection you should press [RETURN], and the following will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Search by-

KEY: _ _ _ _ _   Date: D _ _ _ _ _ _ _ _ _ _

NAME _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

ADDRESS: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

CITY: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

STATE: _ _   ZIP CODE: _ _ _ _ _ _ _ _ _ _
```

6.2.1 You select the search criteria at this point. You may search on up to four fields, with a maximum of two different criteria in each field in addition to the record number. This means you will be able to search on a total of nine different criteria. You should read section 3.4.3 to section 3.5.4.2 which explained the searching capabilities of this program in detail.

6.2.1.1 If for example you were printing 500 mailing labels and the power went off you would not have to start from label one in reprinting. On the search criteria you could indicate you wanted to search on the "R" or "RECORD NUMBER" and enter "400," which would indicate that you wanted to print from record 400 to the end of the file.

6.2.2 You select the criteria you want to search upon and then press [Q] to initiate the search. Upon pressing [Q], the following message will appear on the screen:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [Y]es,[N]o
Command: -Verify-
```

Position Paper

6.2.3 This message is an indication to you that the program is about to initiate the search and begin printing the mailing label. You should check to see if you have paper in your printer, that the printer is on, and ready to receive data. If you want to abort the operation you should perform a [N]O, which will cause you to go back to the mailing labels menu and abort the entire procedure. Press the [Y]ES option, and the mailing label printing procedure will begin. When the mailing label have been printed you will be returned to the mailing labels menu.

6.3 CREATE/EDIT - This is where you can create mailing labels. You can create mailing labels in a design that will fit your needs. One data base may be expressed in many different ways according to the needs you have and the different way you want the information expressed. There are two parts to the CREATE/EDIT mode. There is the ADD mode, and the EDIT mode.

The "ADD" mode is where you create the mailing labels itself, and the "EDIT" mode is where you change any of the mailing labels before saving it to diskette.

ADD MODE: [C],[N],[E],↑ ↓ <-->,[B]egin,CR-sel,[Q]uit
SELECT MODE: [B]old,[T]otal, @DRN#F"I

EDIT MODE: [K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit

6.3.1 When you first enter the CREATE/EDIT mode you will be asked the following question:

File: SAMPLE Date:12/31/81 Rec:1

Options: numbers
Command: Printer width: [80]

6.3.1.1 Pressing [RETURN] will select this default value of 80 character wide label. A 3 5/8" X 3/4 label is approximately 37 characters wide and six columns long. If you are in the edit mode and set the width to any value other than 80 character that value will remain the default value for that mailing labels report.

6.3.1.2 It is important that your printer not generate line feeds on its own. This generation of a line feed occurs when the printing exceeds 80 characters. If you enter a number larger than "80," your printer can generate a line feed, and this will cause problems in regards to printing 60 lines per page. If you printer only allows 80 characters on a single line, accept this default value, and do not enter a larger number.

6.3.2 The next question that is asked is in regards to the printer initilization. That question is:

File: SAMPLE Date:12/31/81 Rec:1

Options: numbers
Command: Printer init: _

6.3.2.1 INITILIZATION in this programs tells the printer which font you want to use). With this command you can indicate the different font you wish to use with your printer. The sequence of entry is up to 7 codes inserted in the CHR$ fashion. When there are more than one decimal number they should be separated by comma's. If your printer requires high bit on these codes (all Atari output is normally low bit) then you should enter the numbers in excess 128 form. (i.e. 15 would be entered ass 143) This program will not force the high bit on any number. The only number that cannot be added is "Ø." If you enter more than 7 numbers, they will be truncated off and only the first 7 will be sent to the printer. These codes will be sent to the printer when the printer is first turned on. As an example if you wanted to print a mailing labels in with the Epson MX-8Ø printer in the condensed font you would enter the value "15" when this question is asked. To set the condensed font on the Centronics 737/739 printer you would enter the values "27,2Ø." Entering no number means that no value will be sent to the printer and will therefore select the default font for your printer.

6.3.3 BOLD ON is the next question asked and is asked in regards to boldfaced type. Boldfaced type for this program is expressed as the expanded dot matrix font. If your printer does not have double width characters then you cannot use boldface in this program. Attempting to use boldface without double width characters will throw the printed output off in its columnar spacing. To turn the boldface on with the Epson you would enter the CHR$ value 14. The Centronics 737/739 printer would use the value 27,14. You may use a total of three codes separated by comma's when turning bold face on. Values over this will be truncated. The question regarding bold face will be expressed as follows:

File: SAMPLE Date: 12/31/81 Rec:1

Options: numbers
Command: Bold on: _

6.3.4 BOLD OFF is asked asked after entering a value to turn the bold face type on and pressing [RETURN]. The codes are entered in the same fashion as with the bold on and the same 3 value restriction applies to the bold off commands. The Epson printer would be turned off with the decimal value "15," and the Centroncis 737/739 is turned off with the "27,15" command. The option to turn bold off would appear as follows:

File: SAMPLE Date: 12/31/81 Rec:1

Options: numbers
Command: Bold off: _

6.3.5 After entering the value for bold face off you will be in the editor of the labels program. It is at this point you create the placement position of the information you want on the label. You will be in the "ADD MODE" of the label generator. The "ADD MODE" is where you create the format (appearance) of the label. The screen mask will appear as follows:

```
File: SAMPLE   Date:12/31/81  Rec:1

Options: [C],[N],[E], ↑ ↓ <-->[B]egin,CR-sel,[Q]uit
Command: -Position-

 #    Name:          Len  #    Name:          Len
 0    KEY:             5  1    DATE             8
 2    NAME:           25  3    ADDRESS:        25
 4    CITY:           15  5    STATE:           2
 6    ZIP CODE:        5  7    PHONE:          11
 8    BALANCE $        8  9    PURCHASES        8
10    NEW BALANCE$     8 11    INVOICE #        5

  1234567890123456789012345678901234567890
1
2
3
4
5
6
7
8
9
        Labels
```

6.3.6 At this point you are going to enter the information you want on the label. You will have 9 lines available for your use. Following is the way that a finished mailing labels form might look in 40 column video. If you create a label over 40 columns wide you will not be able to get all of the information on the screen at one time, and you will have to horizontally scroll. In 80 column video it would look the same, however, the information will be displayed completely and you will not have to scroll horizontally. We will work through the creating of the mailing labels you see below in the following section.

```
  File: SAMPLE   Date:12/31/81  Rec:1

Options: [C],[N],[E], ↑ ↓ <-->[B]egin,CR-sel,[Q]uit
Command: -Position-

#    Name:          Len  #    Name:          Len
Ø    KEY:             5  1    DATE             8
2    NAME:           25  3    ADDRESS:        25
4    CITY:           15  5    STATE:           2
6    ZIP CODE:        5  7    PHONE:          11
8    BALANCE $        8  9    PURCHASES        8
1Ø   NEW BALANCE$     8 11    INVOICE #        5

ØØ123456789Ø123456789Ø123456789Ø123456789Ø

#################################
#####################################
################, ## #####
```

6.3.6.1 This is the add mode of the mailing labels writing portion of the program. You have displayed one of two things according to the type of video that you have. If you have 40 column video you have the screen mask as displayed above. If you have 80 column you have all eighty columns displayed and the numerical line (1234560123...) will total to eighty character. In either case you will have the fields numbers, name, and length displayed. This display will assist you in designing the mailing labels you are going to create. The options line has the following commands available and they are explained in detail in the following section:

C	- CENTER -	the following information
N	- NEXT -	place entry at cursor location print next to adjoining data at time of printing
E	- END -	move to end of the line
↑	- UP -	move cursor up one line
<-	- LEFT -	move cursor left one column
↓	- DOWN -	move cursor down one position
->	- RIGHT -	move cursor to right one position
[B]EGIN	- BEGIN -	move to the beginning entry
CR-SEL	- RETURN -	select cursor location to enter information labels format

6.3.6.2 [C] or CENTER - No matter where the cursor is resting on the video line when you press [C] it will cause the information to be centered when it is printed. In effect you are telling the position you have selected is the center of that line. The centering function will take advantage of the bold face (expanded) font as well. When you place information as bold it will be displayed on the video screen normally with trailing spaces to indicate the amount of space the title will occupy. It is important to note that centering is done at **entry** time and not at printing time. Therefore, the centering of field data will not necessarily be centered for all data printed. The centering capability is best used for the centering of titles in the header line of a mailing labels. You should not attempt to center two strings of information on the same line. The centering option is most useful with the reports part of this program and you will find little use in the mailing labels.

6.3.6.2.1 [N] or NEXT - Next has the same effect as pressing [CR] for select or [C] for center. This selection will place the data that you want entered in the mailing labels at the current cursor location, but will at print out time, attempt to place the the data adjoining the to the previous field entered. This will have many applications in the creation of mailing labels. You will use this next option to place city, state, and zip code in order without unnecessary spaces having to be provided. At print out time it will make the printed appearance of your labels much better looking in apperance. Typically if you used "NEXT" on a line, you would use in for every entry that followed, so that you would have a continuous printing of information. This would not be true in the case where you wanted to start a mailing labels with the last name followed by the first name. To start the mailing labels we would first position the cursor at the beginning of the line with the "B" command. Press [CR] to indicate the selection of the position. Press "#" and the field number for the last name so that data would be entered into that location when it is printed. Immediately after the last name you would enter a the "N" for selection and use a literal space (i.e. "_) to separate the two names and then use an "N" selection and enter the data field for the first name. The "N" field does not have to be directly after the proceeding field. There can be spaces between them. It is important to remember that it should not go on top of the earlier field or it will start at the field before that. Since

mailing labels lines can be entered in any order, it is also important to remember that any next fields must be entered after the field that they proceed, and that if you want spaces to occur between them you must enter those spaces as literal fields that contain spaces as the literal field.

6.3.6.2.2 [E] or END - This command moves the cursor to the end of the printed line. Note, this is not the end of the video line and the screen will horizontally scroll if the printer width is wider than than the video width. In the representation below we have illustrated an 80 column mailing labels header and have cut it in half to show that you would have two screens of information that would be visible. If you had performed the [E] command you would only be able to see what was on the right side of the 40 column screen picture. SEE SECTION 5.3.6.2.3 FOR A DESCRIPTION OF THIS AS IT IS MOST COMMONLY SEEN IN REPORTS AND NOT IN THE PREPARATION OF MAILING LABELS.

6.3.6.2.3 Arrow keys - You will be able to move the cursor to the position on the mailing labels that you want information to be entered at which time you will press the [CR] for select key to indicate to the program you want to locate information at this point to be printed for the mailing labels.

6.3.6.2.4 CR - SEL This selects the location on the mailing labels that you want to enter a field name or data to be printed.

6.3.6.2.5 [B]EGIN - This will move the cursor to the first column of the line to be printed. This is the opposite command for the [E] command and like the end command when you are printing a mailing labels that is larger than the width of the video screen the screen will scroll horizontally. Because of the speed of the program you may be on the first column so quickly that you fail to see information on the trailing portion of the same line that has been scrolled off the screen.

6.3.6.2.6 [Q]UIT for quit will exit the add mode and enter the edit mode. This will only happen if there has been one entry made in the table. If you have made no entries, and wish to exit the create mode without proceeding you may do so with the [BREAK] operation.

6.3.6.3 The selection process is indicated by one of the keystrokes explained from section 6.3.6.2.1 to sections 6.3.6.2.6. The selection process gives you great flexibility in moving the cursor to the position you want to locate data on the mailing label. After having selected the point the information you want to be placed at that point you must then indicate the information itself, so that it may be removed from the data base and placed at this position. There are 8 distinct commands that are used. They may be prefixed with 2 commands. Both the command (operation codes) and the prefixes may be entered in upper or lower case. The prefixes can be entered in any order but they must be entered prior to the opcode (operation code).

6.3.6.4 PREFIX Commands - The prefixes are "B" for boldfacing the entry, and "T" for totalling the entry. Remember, you can only boldface dot matrix printers that support the expanded double width character. The total operation can be done only on field data and formula field entry. The total, "T," prefix is placed prior to those fields that you want totalized in the level break option. After indication the position and your intention to place information at the cursor location, the command and options line will change to look as follow with these prefix characters, and "opcodes."

```
File: SAMPLE   Date:12/31/82  Rec:167

Options: [B]old,[T]otal, @DRN#F"I
Command: -Data-

#    Name:          Len  #    Name:          Len
0    KEY:             5  1    DATE             8
2    NAME:           25  3    ADDRESS:        25
4    CITY:           15  5    STATE:           2
6    ZIP CODE:        5  7    PHONE:          11
8    BALANCE $        8  9    PURCHASES        8
10   NEW BALANCE$     8 11    INVOICE #        5

1234567890123456789012345678901234567890

Labels:
```

6.6.6.5 You would use the arrow keys to move around and create a label. The [B]egin command would be used to a great extent also as it moves you to the left most edge of the label. You would use the CR to select the position and the #(field number) to indicate which data you wanted printed at that location. The "N" opcode would be used to a great extent in the last line of the label for city, state and zipcode. SEE section 2 of this manual for create to get a better description of cursor movement.

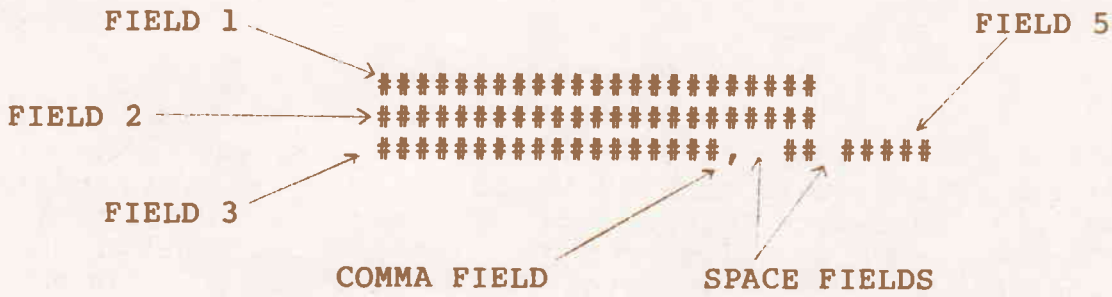
6.3.6.6 The "PREFIXES" are the first two entries on the options line, they are followed by the series: @DRN#F"I. This series are the opcodes. Following is a brief description of each.

6.3.7 "#" FIELD DATA - FOR MAILING LABELS THIS IS THE MOST USED OF ALL OF THE OP CODES. This will print the data for a particular field number that is entered with it. Entering the pound sign "#" and the field number will cause the data that were entered in a the data base to be printed at that position on the label. Go into the create mode, press [RETURN], and

enter a pound sign, #. You should then enter the number of the particular field information you wanted that cursor location and press [RETURN]. The video screen will have # signs to indicate where that particular field is going to be printed when the labels are printed. Consider the exmampl that follows.

FIELD #	DATA CONTAINED	VIDEO REPRESENTATION	LEN OF FIELD
1	name	###########################	24
2	address	#########################	22
3	city	##################	18
4	state	##	2
5	zipcode	#####	5

HOW REPRESENTED IN THE LABEL EDITOR UPON COMPLETION



6.3.7.1 This is the most general type of label that would be created. An additional line might typically be created when you wanted to also have a company name on the label. The last line (city, state, zip code) shows the great flexibility of the labels create ability of DATA PERFECT. The city field would be created as the previous two fields (name, address). The comma field would be created as an "N" (next) field which would automatically have it follow the city, regardless of the length of changing city length. You would create a literal field ("__) after the comma field as a "N" field also so that two spaces would always fall after the city field. You would place the State field as an "N" (next) field so that it would always fall directly behind the two blank space field you just created. Again you would create a "N" (next) field which was a literal field of one space ("_) which would cause for a single space to always be placed directly between the state and zip code.

Finally, you would create a zip code field that was was a "N" (next) field. In creating the final line in this manner you would always have the city be printed, a comma printed directly after the city, then two spaces between city and state, a space always follow the state and the zipcode always follow one space behind the state.

6.3.8 " LITERAL - A literal is just what the word indicates. You want to literally print in that space what follows the quotation mark ("). If you wanted a title in the label that was different than the title that appeared in the data base, you could enter that title as a literal. Pressing [CR] for select, "Mr/Ms, would cause the title "Mr/Ms" to be printed on the label.

6.3.9 "@" - Print the current page number. The number output will be replaced with the page number of the label starting at the number 1. The number will be in 3 digit form with proceeding Ø printed as blank spaces. (i.e. page ØlØ will be printed as " lØ"). To have the page number printed you would enter the at symbol, @, and they press [RETURN]. If you wanted the word "PAGE" printed prior to the number you would accomplish this by entering the word page as a "literal" prior to the at symbol. THE PAGE NUMBER IS USED MOSTLY IN REPORTS AND THERE ARE FEW APPLICATIONS FOR IT'S USE IN MAILING LABELS.

6.3.lØ "D" - Print the current date. You enter the letter "D" as your selection and press [RETURN]. The date will then be automatically entered in this position. You do not have to enter the date as this information is obtaineD by the program from you having entered the date when you loaded the program. THIS IS RARELY USED IN MAILING LABELS. HOWEVER SOMETIMES YOU WANT THE DATE TO APPEAR IN THE UPPER RIGHT HAND CORNER OF THE MAILING LABEL.

6.3.ll "R" - Repeating Character on the screen. Quite often on a label you will want a line drawn across the page to separate the header from the detail information. You would do this by pressing: "R=,8Ø". The "R" says you want a repeating

character, the "=" sign indicates the repeating character you want, and the 8Ø indicates how may times you want to have the character repeat. You can either enter a comma or a period between the repeating character and the number of times you want it to repeat. THIS OPCODE WOULD NOT BE USED BUT ON RARE OCCASION IN THE GENERATION OF LABELS.

6.3.12 "N" FIELD NAME - This will print the field name associated with it. You would enter the "N" and then the number of the field that corresponds with what you want printed. If you enter just the "N" and press [RETURN] you will be prompted to enter a number for a field from the fields that are displayed just below the commands and options line. Consider the following field:

#	NAME:	LEN
3	ADDRESS	15

6.3.13 Pressing [CR] for select would indicate you wanted a field name printed at the cursor location. Behind the "OPTION: DATA" message you would enter: "N3 [RETURN]." This would cause the title "ADDRESS" which is field "3" to be printed at this location and would appear on the video screen as such: ADDRESS. THIS TYPE OF FUNCTION IS NOT USED MUCH IN MAILING LABELS AND IS MORE APPLICABLE TO REPORTS.

6.3.14 "F" FORMULA - The formula allows you to have formulas entered into a label. This allows you to create new data from the data that is already in the data base. The formulas are entered in the same way that they are entered in the create a data base, and with the same criteria for entering. Read section 2.6.4 of the manual for a greater explanation of the formula entering procedure. The formula can be any type of mathematical operation on one or several different numeric fields within the data base. Different labels can be generated on the same materials with the information being expressed in several different ways. This opcode is best used in report generation.

6.3.15 "I" CONDITIONAL - The conditional type of statement is one in which information will be printed only if certain conditions are met in the data. The data that is generated is literal in nature of output and can be printed on up to 3 conditions. The three conditions are: negative, zero, positive. They are always separated with the backslash (\) character. This opcode is best used in the creation of reports and has very little use in label generation. A complete explanation of has been placed in the report section of this manual.

6.4 Having created you label format you can save it to diskette for using at a later date so that you would not have recreate it. Having complete the last line you would press "Q" for QUIT. AT this time the options and command line will change as follows:

```
Options: [K],[R],[B]egin,[U]p,[D]own,[S]el,[Q]uit
Command: -Select-
```

6.5 This is the "EDIT" mode of the label create option. You can move from field to field in the following manner:

[U]P	Tab up one field
[D]OWN	Tab down one field
[B]EGIN	Tab to the first field

6.5.1 The other options allow you to edit the label you have created in the following manner:

[K]ILL	Kill the field at this position
[R]ET	Return to the add mode to add more label
[S]EL	Select this field for editing
[Q]UIT	Quit the edit mode

6.5.2 All of the edit functions are explained in detail in section 2 on create a data base. [Q] for "QUIT" is the option that will remove you from the edit mode and prepare to save the label report.

6.5.3 Pressing [Q]UIT to quit the edit mode cause the following options and command line to appear:

```
Options: Blank lines
Command: Detail: [Ø]
```

6.5.3.1 The question you are being answered is: "How many blank lines do you want on this label. Having just created the label you know how many line are to be printed. In the example we worked through in this manual you created a three line label (see section 6.3.7). A standard computer label is 6 lines in length. If you had created a 3 line label, you would want 3 blank lines on the label. For this label you would enter the value 3 when this question was asked. If you have bigger labels you could indicate so with a different value. You will remember that the maximum number of lines you may create in a label are 9. Creating label for other than mailing labels are not only possible but also easy to accomplish. You would when asked this question just enter the number of blank lines you need to always have the data fall on the label in the same position. Enter an incorrect number will cause the label to fall out of sequence and move up or down the label.

6.5.3.2 Having entered the value for the number of blank lines will take you back to the labels menu which is where you started. At this time you should move the to "SAVE" option of the menu and save the label to diskette.

```
Options: -Input-
Command: Name: _
```

6.5.3.3 Save the label at this point by just typing in the name you want behind the name prompt. Keep it shorter than 8 characters. It will be saved as that name with the extension ".LBL" on the catalog of the data diskette. This will remind you it is a label when you want to load it at a later date.

6.6 Saving the label is complete by pressing [RETURN], which will cause disk I/O and then return you to the labels menu.

6.7 The last two selections are self explanatory. Delete allows you to delete label formats you no longer want on the diskette and have no use for. Pressing [RETURN] with the cursor on this selection will cause the same options and commands question to occur that occur in saving of a label in section 6.5.3.2 above. Enter the name and press [RETURN] and the label format will be delete from the diskette.

6.8 RETURN TO MENU will cause you to return to the main menu from the labels menu. If you attempt to return to the main menu and have a label report in memory you will first have to answer the following question:

```
Options: [Y]es,[N]o
Command: -Verify-

Erase report?
```

6.8.1 You must first indicate to the program it is alright to erase the report in memory. This is a fail-safe in the event that you have forgotten to erase the label report and you must therefore erase it before you exit this section of the program.

7.0 This option on the main menu will allow you to change the default number of drives, the date or both if you wish. When you first load the program you are asked as to the number of drives you have and then to enter the date. If for any reason you wish to change the configuration or the date, in the event you entered the wrong date, you may do so with this option. You will remember that if you entered one drive then drive "1" only will be used. If you want to use both drives, then you would move the arrows to this menu selection and then press [RETURN]. Upon pressing the [RETURN] key you will see the following change in the "OPTION" and "COMMAND" lines above the main menu. They will appear as follows:

```
Options:  numbers
Command: Drive:  _
```

7.1 If you just press the [RETURN] key then you will have the same default drive number you had before. If you want to use both drives then you should enter the number "2" and press [RETURN]. Upon pressing the [RETURN] key you will have the following changes appear in the "options and commands" part of the video screen above the main menu:

```
Options:  -Input-
Command: Date: 12/31/81
```

7.2 As you can see the "OPTION" available to you is to input a new date. The "1" in the date, 12/31/81, is underlined to illustrate that the cursor will be a inverse on the number "1." If you press [RETURN] then the date will remain the same. If you want to change the date then you should enter the new date you want. The numbers in the date can should be entered in the mm/dd/yy format. "mm" represents "month", "dd" represents "day", and "yy" represented "year." The month should be represented with the decimal value for each with slashes, "/", or dashes, "-" allowed to separate each. Actually you may separate each with any non-numeric character as they will be replaced with slashes, "/." The month is checked to see if it is less than 13, the day is checked to see if it is less than 32, and the year is checked to see if it is less than 100. This format of entering the date allows zero's, "0", to be entered as valid date fields but they will act as wild cards and should not be entered in the system date. If you enter any numbers larger

than those allowed as the maximum for year, month and day then you will get the error message, "INVALID ENTRY" and you must then enter them in the proper format.

8.0 The last selection on the main menu allows for the user to change the default drive if they so desire. If you have a two drive system and entered 2 when starting up the system and wish for some reason to have the source disk in #1 and the backup in drive #2, you may do so from this selection and still operate on two drives with the default drive now being changed to #1.

8.1 When you are on this menu selection and you press [RETURN] you will first get the prompt: "DRIVE:."

8.1.1 You should enter the number of the DRIVE you want to address and press [RETURN].

A P P E N D I X I

PRODUCT SPECIFICATIONS

Maximum number of fields: 32
Maximum number of formulas: 16

Types of fields: Alphanumeric, date, number and formula

Maximum length of a field: 127
Maximum record length: 511
Maximum number of records: 1 disk
Minimum number of fields: 1

Number of search criteria: 8 at 2 per field (maximum of 4 different fields) plus record number range for a maximum of 9 separate criteria.

Search parameter types: < (is less than)
<= (less than or equal to)
<> (not equal)
= (equal)
> (greater than)
>= (greater than or equal to)
" (include)

The characters of ? and * provide single character and block (Ø-n) wildcard capability in strings. Where entering Ø and a portion of a date field offers wildcard capability.

Maximum number of sort fields: 4 with truncation of strings and sorting in either ascending of descending order.

Merge capability with either DATA PERFECT, LETTER PERFECT, Atari Dos 3.3 either random access or sequential text files.

Maximum number of level breaks: 4

Maximum printer width: 127

Maximum number of drives: 2

Program requires 48K of memory to operate and will support a language or memory card installed in slot #Ø.

Reports can be printed page x,y with search criteria and with or without totals and subtotals.

INTERNAL STORAGE

When the data base is sorted, the number of bytes of memory used in internal storage is important. Strings are stored as 1 byte per character and 1 byte for the CR at the end. Dates are stored as 3 byte numbers. Numbers and formulas are stored as 5 byte numbers regardless of the length of the output format. The number of characters at the bottom of the sort mask tells the user how many characters is the maximum he can sort on. This is based on memory allocation internal to the machine. Strings can be truncated with an option .n where n stands for the number of characters to sort on. Dates will always take 3 bytes, numbers and formulas will always take 5 bytes per record.

ERROR MESSAGES

I/O -- The disk handler was unable to complete the command due to some irregularity in the data on the diskette. This is similar to the ATARI DOS i/o error.

NO DATA BASE -- There is no data base loaded in the system, and one must be there before the operation attempted can be performed.

TOO LONG -- The input or the file length is too long. On data entry, this message will not be printed, but the field will be truncated at the maximum length.

DISK FULL -- The disk is too full to take another print format or file entry in it.

FULL -- The maximum number of search or sort criteria have already been entered and no more can be added without first deleting one.

INVALID -- The data entered did not match the data type that was required. This is similar to a syntax error.

NUMERIC OVERFLOW -- The floating point calculation override its limits of a maximum value of 10^38 or the minimum value of 10^-38.

DIVIDE BY ZERO -- A division was attempted with a denominator of 0. This is a definite no-no in mathematics.

WRITE PROTECT -- A write or format operation was tried on a diskette with a write protect tab on it.

SYNTAX -- In a mathematical expression, there was an unbalancing of parenthesis or an undefined function.

TOO COMPLEX -- The expression to be evaluated had too many parenthesis or functions and overflowed the limits of the expression handler. A result of Ø will be returned.

FILE NOT FOUND -- The file attempting to be loaded or merged does not reside on the diskette searched.

FILE LOCKED -- The file being resaved is protected from writing.

RANGE -- The parameter returned is outside of the limits set for it.

NO ENTRIES -- There is either no entries in the data base when entries are required for the operation to be performed, or there are no entries in the print format when a printout of a report or label is attempted.

FILE TYPE -- The print file attempting to be loaded was not an Atari binary type file.

I N D E X

-A-

Abort, 3-3
Absolute value, 3-3
Active Records, 1-4
Add recrods, 3-2
Adding recrods, 3-1
Aplpha numeric field, 2-6
And/Or Searches, 3-11
Ascending sorts, 4-8
Asterisk, 3-9
Atari Dos, 4-26
Average, 3-20

-B-

Backup data base, 4-3
Backup diskette, 2-15
Backup drive, 4-1
Begin of label line, 6-11
Beginning of line, 5-13
Blank diskette, 2-14
Blank lines, 5-20
Blank lines labels, 6-18
Bold off/labels, 6-7
Bold on/labels, 6-6
Boldface off, 5-7
Boldface on, 5-7
Boldfacing, 5-14
Boldfacing, 5-18

-C-

CHR$ Values, 5-6
Caps Lowr, I-6
Carriage Return, 5-6
Centering in labels, 6-10
Centering in reports, 5-11
Change Date, 7-1
Change Drive #, 7-1
Checkbook report, 5-17
Clear, I-7
Comma in sort, 4-6
Commands, 2-2
Condensed font, 5-7
Conditionals, 5-17
Control I, 5-6
Copy to cursor, 2-14
Create Data Base, 2-1
Create in labels, 6-8
Create labels report, 6-4
Create new field, 4-12
Credit, 5-18
Cursor movement, 3-12
Cursor movement, 3-12

-D-

Data Base Merge, 3-16
Date Fields, 2-5
Date seaches, 3-19
Debit, 5-18
Default Drive, 2-14
Default values, 2-11
Delete field, 4-12
Delete records, 3-16
Deleting records, 3-16
Descending sorts, 4-8
Design of Data Base, 2-3
Detail in report, 5-10
Detail in spacing, 5-20
Disk sort, 4-5

-E-

Edit, 2-12
Edit mode, 3-2
Edit a report, 5-5
Edit label report, 6-4
Editing, 3-2
Editing a report, 5-19
End of label line, 6-11
End of line, 5-12
Entering labels, 6-9
Entering level breaks, 5-8
Equal to search, 3-7
Erasing Diskettes, 2-15
Expanded font, 5-7
Exponents, 2-7
Expotential, 2-10

I N D E X

-F-

Field Name, 2-4
Form letters, 3-15
Formula fields, 2-7
Formula masks, 4-18
Formulas, 2-8
Formulas in reports, 5-16
Functions, 4-19
Functions, 2-9

-G-

General ledger, 5-18
Global Updates, 3-16
Global Updates, 3-12
Grand total, 5-8
Greater than search, 3-7

-H-

Hardcopy of format, 4-9
Header in report, 5-10
Header spacing, 5-20
Horizontal scroll, 5-12

-I-

Include Searches, 3-8
Init in labels, 6-6
Init of printer, 5-6
Invalid entries, 5-18

-J-

-K-

Key fields, 2-2
Keyboard Editing, I-2

-L-

LJK Dos, 4-24
Label layout, 6-14
Label names, 6-2
Label report, 6-3
Label size, 6-5
Labal width, 6-5
Labels/create, 6-8
Less than searches, 3-7
Letter Perfect, 3-15
Level breaks, 5-9
Limitation of data, 4-17
Line feed, 5-6
Literals, 5-17
Load data base, 1-1
Load program, I-8
Load a label report, 6-1
Loading a report, 5-1
Log, 2-10
Low bit, 5-6

-M-

Mailing labels, 6-1
Main menu, I-9
Matching Searcheds, 3-6
Maximum record, 3-4
Maximum number size, 4-17
Merge, 4-24
Merge Atari files, 4-24
Merge partial files, 4-27
Merging blank fields, 4-25
Merging other files, 4-24
Minimum record #, 3-4
Multiple reports, 5-3
Multiple Matching, 3-9
Multiple level break, 5-9

-N-

Next in labels, 6-10
Next in reports, 5-11
Numbers, 2-4
Numbers fields, 2-7
Numeric field, 2-5

-O-

Opcodes, 5-14
Options, 2-2
Order in merge, 4-26
Order of merge, 4-27
Order of merge, 4-28

-P-

Pack a data base, 4-3
Pages in reports, 5-3
Partial Matching, 3-9
Precedence, 2-9
Precedence in merge, 4-25

I N D E X

Prefix commands, 5-14
Print Current Date, 5-15
Print a label report, 6-3
Print a report, 5-3
Print field data, 5-16
Print field name, 5-15
Print format, 4-9
Print page number, 5-14
Printer width, 5-6

-Q-

Question mark, 3-10
Quit, 2-10
Quit, 2-13
Quit in reports, 5-13

-R-

Record Numbers, 3-4
Reformat data base, 4-11
Repeating character, 5-15
Replace block, 3-9
Report title, 5-2
Reports, 5-1

-S-

Save, 2-15
Save labels, 6-19
Saving Records, 3-2
Saving a report, 5-21
Saving a report, 5-19
Search Record Number, 3-4
Searches, 3-13
Searches in labels, 6-3
Searches in reports, 5-4
Searching Records, 3-3
Single Drive, 2-15
Single Partial match, 3-10
Social Security, 2-5
Sort mutiple items, 4-6
Sorting records, 4-5
Source Drive, 2-14
Source Drive, 4-1
Split screen, 5-12
Square root, 2-10
Status line, I-1
String, 2-6

-T-

Tab, I-6
Tabing, 2-12
Totaling Records, 2-17
Totals in reports, 5-14
Truncation of data, 4-17

-U-

Units Fields, 2-6
Updates Menu, 3-1
Updating record, 3-15
Utilities, 4-1

-V-

Verifying searches, 3-14
View format, 4-9
View format, 4-10
Void, 5-17

-W-

-X-

-Y-

-Y-