

MICROSPEC

USER'S GUIDE

CBM 64 DATA MANAGER

©1982 by MicroSpec

THIS MANUAL MAY NOT BE REPRODUCED,
IN WHOLE OR IN PART, FOR ANY REASON
WITHOUT PRIOR WRITTEN PERMISSION FROM:

MICROSPEC

P.O. Box 863085
Plano, Texas 75086

TABLE OF CONTENTS

I.	INTRODUCTION	1-1
	A. Description	1-1
	B. Overview of the Data Manager System.....	1-1
	C. Hardware Requirements	1-5
	D. Care of Diskettes	1-5
	E. File Structure	1-6
	F. Syntax	1-6
II.	SYSTEM STARTUP	2-1
III.	MAIN MENU	3-1
IV.	CREATE FILE	4-1
V.	ADD RECORD	5-1
VI.	DELETE RECORD	6-1
VII.	CHANGE RECORD	7-1
VIII.	BROWSE	8-1
IX.	SEARCH	9-1
X.	DUMP FILE	10-1
XI.	REPORTS	11-1
	A. Defining a Report Format	11-1
	B. Using a Predefined Format	11-7
XII.	COLOR SELECTIONS	12-1
XIII	PRINTER SETUP	13-1
XIV.	EXIT	14-1

INTRODUCTION

Welcome to the MicroSpec Ltd. Commodore 64 Data Base Manager System. This comprehensive, menu-driven system is designed and written to be "user-friendly", requiring a minimum of input to operate. All functions are initiated through "multiple choice" selections and can be easily exited from in the event they are reached in error. This section contains a description and general overview of the system, its requirements and features, and some suggested precautions.

A. Description.

This system enables the user to create a Data Base (direct-access disk file) of related information stored as records. Each record is made up of user-specified fields containing character or numeric data. For example, a list of homes and their locations, features, and prices can be stored and used by a Real Estate agent to produce a list of properties based on a client's specifications. The list can be produced in order by address or neighborhood to allow the properties to be viewed easily. The agent can keep track of total dollar value listed, clients, time spent with clients, etc. using one or more Data Bases. Similar uses for the Data Base Manager are available for any business or person needing to maintain and manage information relating to business or personal interests.

B. General Overview of the Data Base Manager System.

The Data Base has a capacity of 1200 records (600 if the combined length of all fields in each record

exceeds 127 characters). Each record can contain a maximum of 18 fields. Each field can contain up to 24 characters or numbers. Fields are assigned user-specified labels (field names) that are used in reporting and file "dumping" (printing) operations. A record description containing all field definitions, attribute information, and record keys is maintained automatically by the system in a Data Base Description File that resides on the same diskette as the Data Base. In this manner, multiple Data Bases with different characteristics, each on its own diskette, can be created and will be automatically recognized by the Data Base Manager.

The following features are available for building and maintaining the Data Base:

- CREATE: A new Data Base is created using this function. The user is requested to insert a blank diskette, which is completely erased before creating the new files. After the system allocates the space for the Data Base, the user is prompted to supply the file description criteria. This consists of the number of fields in the Data Base, the label for each field, the field type (character or numeric), and the field length. After all fields have been described, the system creates a Data Base Description File on the diskette. This file will be read each time the Data Base Manager is started to inform the system of the file layout.

- ADD: New records are added to the file using the ADD function. The system prompts the user to enter information for each field defined in the record. Errors can be corrected before the record is stored.

- CHANGE: Updates to existing records are accomplished using the CHANGE function. The existing record is displayed and the user can change any or all fields in the record until indicating that the record is to be stored.

- DELETE: Records are deleted using the DELETE function, which allows the user to review the contents of the record before deletion and to cancel the delete if desired. The DELETE function also contains a "forced delete" option that allows the deletion of a "bad" or unreadable record without reviewing its contents.

- BROWSE: The BROWSE function is used to search the Data Base sequentially for a particular record or records and change them if desired. The user can specify a starting record number and "scroll" forward or backward through the records. This function also allows the user to enter the CHANGE function to update a record and return to continue browsing.

- SEARCH: The SEARCH function is used to locate records based on selection criteria. This criteria consists of field number, comparison operator, and comparison value. The comparison operator is "Boolean", i.e. "eq" (equal to), "gt" (greater than), etc. The comparison value may be a number or a complete or partial character string. Up to three sets of selection criteria may be specified. The system will display all records matching the selection criteria, one at a time, until the end of the Data Base is reached. This function also allows the user to enter the CHANGE function, update the displayed record, and return to continue searching.

- DUMP FILE: This function is provided to facilitate printing out the contents (all fields) of all or a range of records in an "unformatted" manner. A Pause/Cancel feature allows the user to temporarily suspend or cancel the dump operation.

- REPORTS: This function is used to produce formatted reports on the screen or printer. The user can create completely customized reports by specifying the following:
 1. Selection Criteria - Up to three sets as described in the SEARCH function.
 2. Sort Criteria - One or two field numbers to sort on.
 3. Field Information - For each field in the report, the user indicates the field number, length of the field or actual field length, any literals to be placed between fields, and the number of linefeeds (vertical spaces) to include after printing the field.
 4. Header Information - A report title to be centered at the top of each page.

This "format" can be saved for later use - the system maintains a directory of pre-defined report formats. Each time a pre-defined format is used, the user has the option to change the sort and selection criteria or use it "as is". Reports may be directed to the screen or printer at the time they are requested.

Other functions allow the user to change screen and text colors and, if necessary, set a delay for the

printer and/or send any special character string required for printer setup. This information is also maintained in the Data Base Description File.

The EXIT option is provided to insure that any information entered, such as record additions/deletions or color/printer/report format information is updated in the Data Base Description File. This is the only legitimate exit from the Data Base Manager; failure to exit the system using this function may result in loss of any data entered during the current session.

C. Hardware Requirements.

The Data Base Manager is designed to run on the Commodore 64 with any VIC or CBM disk drive and an 80-column printer addressed as device number 4. Although the system is primarily intended for use with a Commodore 1525E printer, any dot-matrix or letter-quality device with the proper interface may be substituted. The user should be aware, however, that some printer/interface combinations may not work properly with this system.

D. Care of diskettes.

Diskettes should be treated with the utmost care. Each diskette containing a Data Base can be the product of extensive time and effort, and therefore represents a substantial investment by the user. In view of this, PLEASE observe the following precautionary measures:

1. NEVER touch the recording surfaces of the diskette. Dirt and body oil can contaminate the surface and render the files unreadable.

2. NEVER take the diskette out of the drive without replacing the protective paper jacket.
3. NEVER place the diskette near any magnetic force, such as an electric motor or large permanent magnet. Doing so can completely scramble or erase all recorded information.

For additional information on the care of diskettes, refer to the back of the paper diskette jacket.

E. File Structure.

The Data Base is a true random-access file. Any record in the file may be accessed directly without reading any intervening records. This is accomplished by using an index, or "key" file to locate the record's position on the disk before reading the record.

Because of the nature of this file structure, it is absolutely imperative that the EXIT function be used to leave the program. The EXIT function writes a new key file based on any file changes made during operation of the system. Failure to exit through this function may result in loss of any data entered during current system session. If for any reason the user should "break out" of the program, the system can be re-entered by typing "run" and pressing RETURN. After re-entering the Main Menu, use the EXIT function to leave the program and re-start it if necessary. NOTE: Data entered prior to the "breakout" may be lost.

F. Syntax

Throughout this manual, certain formats are used to designate user input syntax. The statement "enter ..."

should always be interpreted to mean that the specified input is to be typed followed by pressing the RETURN key. In statements where input values are enclosed by brackets ([0], [del], etc.), only the value within the brackets should be typed.

The "up-arrow" key may be used to "back up" to the beginning of the previous field during data entry functions. Pressing this key will blank out the field being entered or the previous field (if RETURN has already been pressed) and position the cursor at the beginning of the field. If the "up-arrow" key is pressed multiple times, it will continue to "backtrack" and blank out fields.

SYSTEM STARTUP

Start the system by first turning on the computer, disk drive, and printer. Insert the system diskette into the disk drive and enter [LOAD "*",8] and press RETURN. This causes the computer to load the first program it encounters on the diskette, which is the Data Base Manager system. The computer will respond:

```
"SEARCHING FOR *"  
"LOADING"  
"READY"
```

Now enter [RUN] and press RETURN. The Data Base Manager should now begin execution. If this does not occur, type [load "data-64",8] and press RETURN. Should the problem persist, turn the computer's power switch off briefly, then on again and repeat the above procedure.

The "logo" screen will appear and direct the user to insert a data diskette into the disk drive. Remove the system diskette from the disk drive and replace it with either a blank diskette (one that may be written over) or one containing a previously created Data Base. When this action is completed, press RETURN. The Main Menu will then be displayed.

MAIN MENU

After the system has been started, the first screen displayed is the Main Menu. The user selects the function to be performed, and after each function (or option) terminates, the system returns to the menu for further instructions. The Main Menu screen appears as follows:

MicroSpec Data Base Manager

Enter Option: *

Create a File
ADd a Record
DElete a Record
CHange a Record
BRowse the File
SEarch the File
DUmp the File
REports
COLor Selections
PRinter Setup
EXit the Program

Enter the first two characters of the desired option and press RETURN. For example: to create a new file, enter [CR] and press RETURN. Any combination of characters other than those in upper case on the above menu will be ignored by the system. If an option is entered in error, entering [0] or pressing RETURN immediately will cause the system to return to the Main Menu.

When the system is used for the first time, the CREATE and EXIT options are the only choices that may be used. All

other options require a valid Data Base in order to operate properly. Each of the above options are discussed in detail in the remaining sections of this manual.

NOTE

The user must ALWAYS exit the system using the EXIT option. This option closes all files and updates the key, or index, file and insures that all previously entered information is retained. If for any reason this is not done, or the program is forced to terminate prematurely, use the following procedures to recover:

1. Clear the screen by pressing the SHIFT and CLR/HOME key at the same time.
2. Return to the main menu by entering [run] and pressing RETURN.
3. Use the EXIT option to save the description file and exit the system. Begin operations again by entering [run] and pressing RETURN. Data entered prior to the termination of the program in this case may be lost. Check the file carefully upon re-entering the system using the BROWSE or SEARCH functions.

CREATE

This option creates an Data Base on a blank or "scratch" diskette. The process will erase any previously recorded data on the diskette. If the diskette in the disk drive already contains a MicroSpec Data Base Manager Data Base, the system will prompt:

"Disk contains data. Continue [y/n]"

To over-write the existing Data Base, enter [y]. Entering [n] will return the user to the Main Menu.

The system now prompts the user for file description information. The first prompt is:

"# of Fields"

The system is asking the user to tell it the number of information fields to be contained in the Data Base. This can be any number from 1 to 18. For example, assume that a Customer Data Base is to be created. The Data Base is to contain information on each customer's name, company affiliation, street address, city, State, Zip Code, telephone number, date to contact next, and total purchase amount in dollars. This amounts to a total of 9 fields. For this example, then, the user would enter [9] and press RETURN.

The Data Base Manager will now display a screen divided into sections with headings for Field Name, Field Type, and Field Length with the numbers 1 to 9 in the leftmost column. The cursor will be positioned immediately following the number 1.

At this point, the user begins to enter the information for each field. The first field in this example is the customer's name, so the reply would be [Name]. The cursor now moves to the second column, Field Type, and prompts:

"[a]=Alpha, [n]=Numeric, [\$]=Dollar"

One of these three field types should be entered, as the default (if RETURN is pressed) will be Numeric. This Since this field will contain character data, the reply is [a] (for alphanumeric). After pressing RETURN, the cursor moves to the next column, Field Length. Since this field (customer name) could contain the maximum of 24 characters, the reply should be [24], although any number from 1 to 24 is valid. After pressing RETURN this time, the cursor moves to the next line to begin the definition for Field 2. Note that the record length is displayed in the upper right hand corner of the screen each time a field definition is completed. If this number exceeds 127, the Data Base will be limited to 600 records. If the combined length of all the fields is less than 127, the data base will contain 1200 records. In any case, the maximum length of a record cannot exceed 255 characters.

Fields 2 thru 8 are all character fields with descriptive Field Names such as "Company", "Address", etc., and have lengths appropriate to their contents (such as a length of 5 for Zip Code). Field 8 will contain the "next contact" date, which will be entered in the format YYMMDD (YY=year, MM=month, DD=day). Thus, field 8 will have a type of "a" and a length of 6. Although it contains numbers, Field 8 is not described as numeric because the value in the field will not be used as a true integer or floating-point value. Only strictly numeric fields (i.e. used for totaling, etc.) should be defined as numeric or "dollar". Fields containing "literal" numbers may be defined as

alphanumeric (type "a"). The YYMMDD format permits "greater than" and "less than" comparisons when entering selection criteria for the SEARCH and REPORTS functions.

Field 9 has a Field Name of "Amount", a Field Type of "\$" (it will contain the dollar amount spent by the customer), and a Field Length of 8. The "\$" type automatically formats the value in the field as floating-point, containing a decimal point and two decimal places. Thus, this field can contain a value up to \$99999.99.

All field definitions are now completed and the Data Base Manager asks next if the user is satisfied with the data or wishes to make corrections by prompting:

"Entries Correct? [y/n]"

Enter [y] if no changes are needed. To enter corrections, enter [n] and the system will prompt:

"Field #, [0]=Save"

Enter the number of the field to be changed and press RETURN. The cursor will move to the line on the screen containing the field definition, allowing the user to enter the corrected information. After all corrections are made, enter [0] or just press RETURN.

Next, the system instructs the user to insert a blank disk and press RETURN. The diskette will be "scratched" (erased), then 600 disk sectors are allocated, and an index (key) file is created. This process normally takes a few minutes to complete, and the system will display each sector number as it is allocated. At the completion of this function, the Data Base Description File is created and saved on the diskette. The user is returned

to the Main Menu.

At this point, the user may begin to enter data into the records using the ADD function. In any case, it is imperative that when the current session is ended, the user must exit the system using the EXIT function in order to properly store the newly-created Data Base.

ADD RECORD

This option is used to enter data and add records to the Data Base. To cancel the ADD option and return to the Main Menu, enter a [-1] (minus one) and press RETURN. The first prompt is:

"Enter Record #"

The record number is used as a key to locate the record in the Data Base. Although the user can specify a record number from 1 to 600 or 1200 (depending on the record length determined in the CREATE function), the preferred method is to let the system select the next available number by just pressing RETURN. The Data Base can be read faster by the Data Base Manager because all the records will be in contiguous order. If a record has been deleted, the system will automatically select that record number, otherwise it will select the next sequential number after the "high record number".

The system will now prompt the user to supply information for each of the fields described in the CREATE option. The screen displays the number and name of each field and the cursor is positioned at field 1. Enter the data for each field and press RETURN. After the data is entered for each field, the cursor moves to the next line until all fields have been entered.

The system now prompts:

"Field #, [0]=Save"

At this point, the user may edit (correct) any of the

fields by entering the field number and pressing RETURN (the field number appears at the leftmost column of the screen next to the Field Name). The cursor moves to the line containing the field to be edited and the data field is blanked, allowing the corrected data to be entered. Pressing return after entering the data returns the user to the "Field #" prompt. This process may be continued until all fields have the correct data entered. The record is saved (added to the Data Base) by entering [0] or pressing RETURN.

Remember - after all records have been added, the user must exit the system through the EXIT option in order for the index (key) file to be updated. In the event this is not completed, any records added will not be accessible the next time the system is used.

DELETE RECORD

This option is used to delete any previously stored records from the Data Base. Prior to entering this option, the user may employ the SEARCH function to locate records to be deleted and obtain their record numbers. The system prompts:

"Enter Record #"

Entering a [0] or pressing RETURN will cancel the option and exit to the Main Menu. The system next prompts:

"Forced Delete [y/n]"

This feature is included to allow the user to delete a record without the system first attempting to read and display the record contents, i.e. a "bad" or unreadable record. If this is desired, enter [y] and press RETURN. Entering [n] will cause the system to attempt to locate the record and display its contents. If the specified record number does not exist, an error message is displayed and the system returns to the "Enter Record #" prompt. The system next prompts:

"Enter [del] Code:"

If the record displayed is not the desired record, enter [n] and press RETURN to cancel the delete. To complete the deletion process, enter the characters [del]. The record key will be deleted from the index file and the space will be made available for the next record to be added to the Data Base. The user will be returned to the "Enter Record #" prompt until [0] is entered or RETURN is pressed without entering a record number. Upon completion of this option the system exits to the Main Menu.

CHANGE RECORD

This option is used to change (edit) the fields in any record previously stored in the Data Base. The system prompts:

"Enter Record #"

To cancel the option, enter a [0] or press RETURN, and the system will exit to the Main Menu. To proceed, enter the number of the desired record. The user can employ the BROWSE or SEARCH options to quickly locate the appropriate record number if it is not known.

The system will attempt to locate the record. An error message will be displayed if it cannot be found, returning to the "Enter Record #" prompt. If the record is located, its contents are displayed and the system prompts:

"Field #,0=Save"

If the record is not the desired record to be changed, enter a [0] and press RETURN to exit to the Main Menu. To proceed, enter the number of the field to be changed and press RETURN. The cursor is positioned at the beginning of the indicated field. Enter the desired information, press RETURN, and the system returns to the "Field #" prompt. This process may be repeated for all fields to be changed. When all desired fields have been updated, enter a [0] or press RETURN and the record will be re-written to the Data Base. Upon completion of this process, the system exits to the Main Menu.

BROWSE

This function is used to sequentially browse (display) records previously stored in the data file beginning with a user-specified record number. The system prompts:

"Enter Record #"

To cancel this function, enter a [0] or press RETURN. Enter the record number to begin the browse with. If the record does not exist, the system displays an error message. If the record is located, its contents are displayed along with the following prompt:

"f1=Next, f3=Prev, f5=Change, f7=Menu"

To continue browsing forward, press the f1 key. To go back to previous records in reverse order, press the f3 key. If the user desires to change a record, the f5 key will produce the "Enter Field #, [0]=Save" prompt as in the CHANGE option described earlier in this manual. Follow the same procedures as in that option and enter [0] or press RETURN when updating is completed. The system will return to the BROWSE mode. Browsing may be cancelled at any time by pressing the f7 key. When the last record in the Data Base is encountered, the system continues to display the last record read until the BROWSE function is terminated.

SEARCH

This option enables the user to display records in the Data Base matching a set of selection criteria. The Data Base Manager locates the first record matching the criteria and continues to display all matching records until the end of the Data Base is reached or the user terminates the option.

The principle used is the definition of a value to compare against a field in the record. The comparison is "Boolean" in nature, i.e. "equal to", "greater than", etc. The user may specify one to three sets of selection criteria. The selection criteria consists of a field number, comparison operator, and search argument. A screen is displayed with the field names and numbers on the left and three blank criteria fields on the right, along with the following prompt:

"Field # (eq,ne,lt,gt,le,ge) Argument"

To cancel this option and return to the Main Menu, press RETURN. To proceed, enter the field number, the comparison operator, and the search argument without any commas or spaces between them. Now press RETURN and the cursor will move to the next line. The comparison operators are abbreviated, as in the prompt. They are defined as follows:

1. eq = Equal to
2. ne = Not equal to
3. lt = Less than
4. gt = Greater than
5. le = Less than or equal to

6. ge = Greater than or equal to

The search argument will depend on the field type. For numeric or "dollar" field types, a number is appropriate. For character fields, a full or complete character string may be used by either entering the complete value or the beginning characters followed by an asterisk (*). If less than three sets of criteria are desired, press RETURN without any other input after the cursor moves to the next criteria field.

For example, assume the previously created Customer Data Base is to be searched. The following fields are available:

1. Name
2. Company
3. Address
4. City
5. State
6. Zip Code
7. Telephone
8. Next Contact
9. Amount

To search for all records with a company name beginning with the character string "U.S.", city equal to Dallas, and a next contact date less than or equal to February 1, 1983, the following sets of criteria are entered:

1. [2eqU.S.*]
2. [4eqDallas]
3. [8le830201]

Note that in set 3 the value is entered in the YYMMDD format previously mentioned in the CREATE example.

Comparing the date in this format allows an accurate comparison between dates in different years. For example, 821215 (Dec. 15, 1982) compares as "less than" the example date of 830201 (Feb. 1, 1983). If the format was MMDDYY, 121582 would compare as "greater than" 020183.

Remember that the comparison string cannot exceed the length of the field it is to be compared against. After all three fields are entered, the Data Base Manager begins searching the Data Base starting with record #1. It will stop and display each record that matches the entered criteria along with the prompt:

"f1=Next, f3=Change, f5=Cancel"

To continue displaying matching records, press the f1 key. To change a displayed record, press the f5 key and the system will temporarily shift to the CHANGE option. When changes are completed, the system returns to the SEARCH option with the above prompt. Press the f5 key to cancel the option and return to the Main Menu.

DUMP FILE

This option is used to print all or a range of records from the Data Base. Rather than using a specific format, the records are "dumped" with all fields printed, including record number. This function is useful for obtaining a printed copy of all or part of the information stored in the Data Base for verification, making notes for updating, etc. The first prompt is:

"Enter Beginning #, [a]=All, [c]=Cancel"
"Beginning"

To cancel this option and return to the Main Menu, enter [c] and press RETURN. This option allows printing of all the records in the Data Base or a range of records defined by entering a starting and ending record number. Enter [a] to print all records, or enter the number of the record to start with. If a starting number is entered, the system will prompt for the ending number:

"Ending"

Enter the ending number. The Data Base Manager next prompts:

"Ready Printer, [7]=CBM Printer"

Align the printer to top-of-form. If using a CBM printer, enter [7]; for all other printers, just press RETURN. The [7] value represents the secondary address for the Commodore printer, which is required to put the device in the dual-case mode. If a different interface is being used that requires a secondary address, it may be entered at this time. The Data Base Manager will open the printer

channel using this value as the third parameter in the OPEN statement. The system will begin printing the first record with the field names followed by their contents along with the following prompt:

"Press RETURN to pause"

To pause after the current record is printed press the RETURN key. The system will print all fields before pausing, then prompts:

"Press RETURN to continue, [c]=Cancel"

To continue printing, press the RETURN key again. To cancel the dump, enter [c] and the system will return to the Main Menu.

When all records have been printed, the system prompts:

"Report Finished, Press RETURN"

Press the RETURN key and the system will exit to the Main Menu.

REPORTS

This option prepares formatted reports using all or a selection of the records in the Data Base. Report formats can be designed and saved for re-use, with the added capability of changing the sort and/or selection criteria at report time. This is especially useful for producing several reports with the same format using different subsets of records or a different sort order. The system maintains a directory of pre-defined formats and displays them on request. This section contains two parts - Part A for defining a format and Part B for using a pre-defined format.

A. Defining a Report Format.

The first prompt is:

"Pre-Defined Format? [y/n/c]"

To cancel the REPORTS option, enter [c] and the system will return to the Main Menu. In this case, a new report format will be designed, so the appropriate reply is [n]. A report format consists of sort and selection criteria, the fields to be printed, and for each report field, length, literal, and linefeed data.

A screen with the record field names and numbers at the left is displayed along with the following prompts:

"[0]=Record Sequence"

"Primary Sort Field"

The user can either bypass sorting by entering [0] or pressing RETURN. Otherwise, one or two sort fields can be specified. If one field is used, the first 10

characters of the field are sorted on (or the entire field if it is less than 10 characters in length). If two fields are specified, 5 characters are used from each. Enter the number of the field to sort on. For example, using the Customer Data Base from previous examples, to order the report by city within State, the primary sort field is 5 (State) and the secondary sort field is 4 (city).

Next, the selection criteria is asked for on the same screen with the following prompts:

"Field # (eq,ne,gt,lt,ge,le) Argument"
"SELECTION CRITERIA"

As in the SEARCH option, the user can enter from 1 to three sets of search criteria. Continuing the example, to select only those records with a dollar amount greater than \$1000, the first set of criteria is [9gt1000]. The remaining sets of criteria are bypassed by pressing RETURN.

The sort and selection criteria are now entered and the system affords the user the opportunity to change the information by prompting:

"Entries Correct [y/n]"

Entering [n] will return the user to the "Predefined Format" prompt to begin the process over again. Entering [y] starts the print line definition process with the prompt:

"# Fields to Print"

A report is made up of a number of fields, much like a

record. Each report field is filled from a record field. Enter the number of fields that are to be included in the report. Continuing the above example, the report is to contain the Name, Company, Telephone, and Amount fields, or a total of 4 fields. Enter the number of fields and the system next prompts:

"Enter Field Number"

The system displays a number indicating which report field is being defined. Enter the number of the first record field to appear on the report. In the above example, this is field number 1. Next, the system prompts:

"Enter Length, RETURN for Actual"

The length entered will be the length of the report field. Data from the record field is moved to it according to this length. If a length greater than or equal to that of the record field is entered, the system will move the entire contents of the record field into the report field left-justified and fill the remaining spaces with blanks.

If a length smaller than the record field is entered, the system will move only that many characters, starting at the beginning, from the record field.

If actual length is specified by pressing RETURN, the system moves data from the beginning of the record field up to and including the last nonblank character in the field. For example, if the Name field (field 1) is defined as 24 characters in length, and contains a name with only 20 characters, the system moves only the first 20 characters from the record field to the report

field. This effectively makes the report field a variable-length field if the record field contains varying-length data. Using actual length causes the next prompt:

"Enter Literal"

The system displays a vertical bar to delimit any literal data, such as spaces or punctuation (excluding commas), to be added after the field as a separator between this and the next field on the same print line. If no literal is desired, just press RETURN; otherwise, enter the characters. If no literal is specified, two adjacent fields will appear to run together. The system next prompts:

"Enter Number of Linefeeds"

The system is asking if the next field will begin on the same print line or if it should space vertically before printing the next field. If RETURN is pressed, the next report field will begin on the same print line. Entering a positive number will cause the printer to space vertically by that many lines before printing the next field.

The system will now return to the "Enter Field Number" prompt and display the next report field number. This process continues until the specified number of report fields are all defined.

In the above example, report fields 1 and 2 are filled with record fields 1 and 2, with a length of 27 specified for each to provide at least 3 spaces between fields. Report field 3 is the Telephone field from the record, and uses actual length since it is always 12

characters (area code, dashes, and phone number). A literal of 4 blank spaces is specified to separate it from the last field, the Amount field. This field uses actual length and no literal. Since all fields are to appear on one line, this is the only field with a linefeed specification, which is 1. The system will print all four fields, advance to the next line, and begin printing the data from the next record, and so on. Keep in mind that the sum of all report field lengths should not exceed 80 columns, which is the maximum number of columns this system is designed for.

The system now prompts:

"Enter # to Change, RETURN to Continue"

All report fields are displayed on the screen. To correct any report field, enter its number. The cursor will move to that line and allow the user to re-enter the definition data. After any corrections are made, just press RETURN and the system prompts:

"Print Record #'s [y/n]"

If record numbers are to be printed with each print line, enter [y]. In the above example, record numbers are bypassed by entering [n]. Next, the system prompts:

"Print Headings [y/n]"

Headings consist of a report title and field names (from the record definition) printed at the top of each report page. Enter [n] to bypass headings. In the above example, enter [y] to print headings. The report title is entered after the prompt:

"Report Title?"

If a report title is desired, enter it and press RETURN. If no title is to be printed, just press RETURN. The system assumes an 80-column print line and centers the title accordingly. The next prompt is:

"Screen or Printer? [s/p]"

The report may be directed to the screen or the printer by entering [s] for the screen or [p] for the printer. If the printer is chosen, the system prompts:

"Ready Printer, [7]=CBM Printer"

Align the printer to top-of-form and enter [7] if using a CBM 1520 or 1525 printer. For all other printer types and interfaces, refer to the discussion on secondary addresses in the DUMP FILE section.

Next, whether the printer or screen is chosen, the system will flash a message:

"Press RETURN to pause"

To pause after the current line is printed or displayed, press RETURN. This feature may be used to allow the user to replace the form in the printer if continuous forms are not being used. The Data Base Manager assumes a standard page (11inch form length) has 66 lines and that the printer is set to print 6 lines per inch. To continue printing, press RETURN again. When the report is completed, the system prompts:

"Report Finished, Press RETURN"

Press RETURN and the Data Base Manager asks if the format is to be saved by prompting:

"Save Print Format [y/n]"

To bypass saving the format, enter [n]. To save the format, enter [y] and the system will prompt:

"Enter File Name"

Enter the name of the format. It will appear in the directory kept by the system prefixed with the characters "rep.". If the name entered is already in the directory, the previously defined format will be replaced with the current format. The system now returns to the Main Menu.

B. Using a Pre-Defined Format.

The first prompt is:

"Predefined Format? [y/n/c]"

To cancel this option, enter [c] and the system will return to the Main Menu. If a pre-defined format is to be used, enter [y] and the system will prompt:

"Enter File Name, [?]=Directory"

If the format name is not known, enter a [?] (question mark) and the system will list the directory of report formats that have been previously defined and saved, then returns to the above prompt. Once the format name is known, enter the name is known, enter it and the

system will prompt:

"Change Sort Criteria? [y/n]"

To change the sort criteria, enter [y] and the system will prompt the user to re-enter the sort field or fields. Enter [n] to bypass changing the sort fields. Next, the system will prompt:

"Change Selection Criteria? [y/n]"

Enter [y] and the system will prompt the user to re-enter the selection criteria. To bypass changing the selection criteria, enter [n]. The next prompt is:

"Screen or Printer [s/p]"

From this point on, the system follows the pattern described in Part A after this same prompt appears, with the exception that the user is not asked whether or not to save the report format.

COLOR SELECTION

This function is used to change the color selection for screen and text. The system displays a list of 16 available colors along with the following list of selections:

- [1]-Screen
- [2]-Prompt
- [3]-Response
- [4]-Message
- [5]-Border
- [6]-End

The system prompts:

"Enter Selection"

Enter the appropriate selection number, then RETURN. For example to change the border color, enter [5]. The system will then prompt:

"Enter Border Color"

Now enter the number of the desired color for the selected item. The color will immediately be changed. The user may continue to change colors until satisfied with the combinations. The system will record the color selections on the data diskette and set them each time the system is started. To exit from this function, enter [6] and press RETURN.

PRINTER SETUP

This function is used to set up the printer if the user is not using a Commodore or CBM printer, or wishes to send special characters to initialize special modes, etc. It also allows the user to specify a printer delay time in seconds (approximately) for synchronization purposes and to specify if the system should send linefeeds or if the printer will provide them. The system prompts:

"[1]=Init Codes, [2]=Delay, [3]=Linefeed"

At this point, the user may exit from this option by pressing RETURN with no value. The valid responses are:

1. Initialize Codes - Enter a [1] and the system will prompt:

"Enter ASC\$ Value"

Enter the ASC\$ numeric value for the characters to be sent. The system will continue to accept values one at a time until the user enters RETURN without any value. This string of characters will be sent to the printer immediately after it is OPENed by the system. The user may send ESCAPE sequences, etc. to configure or use any special features of the printer.

2. Delay - Enter an integer number, multiplied by 1000, representing the approximate number of seconds the printer should delay before printing the next line. Press RETURN with no value to exit.
3. Linefeed - The system will prompt:

"[1]=Send Linefeed, [2]=No Linefeed"

Enter a [1] to cause the system to send linefeeds to the printer. If the printer supplies its own linefeeds, enter [2] (this is the default). This function is included due to some printers having a switchable option that can cause the device to "carriage return" without spacing vertically (linefeed). The user should carefully consult the operation manual for the printer being used to insure that it is properly set up before using this function.

EXIT

This is the only valid exit from the Data Base Manager System. Failure to exit using this function may result in loss of valuable data, as the process updates and closes all files on the diskette.

This means that if the user simply turns off the power after entering data into the system, including color selections or printer setups, the data will not be saved. To avoid this unfortunate circumstance, always enter [EX] after returning to the Main Menu if all other functions have been completed.