

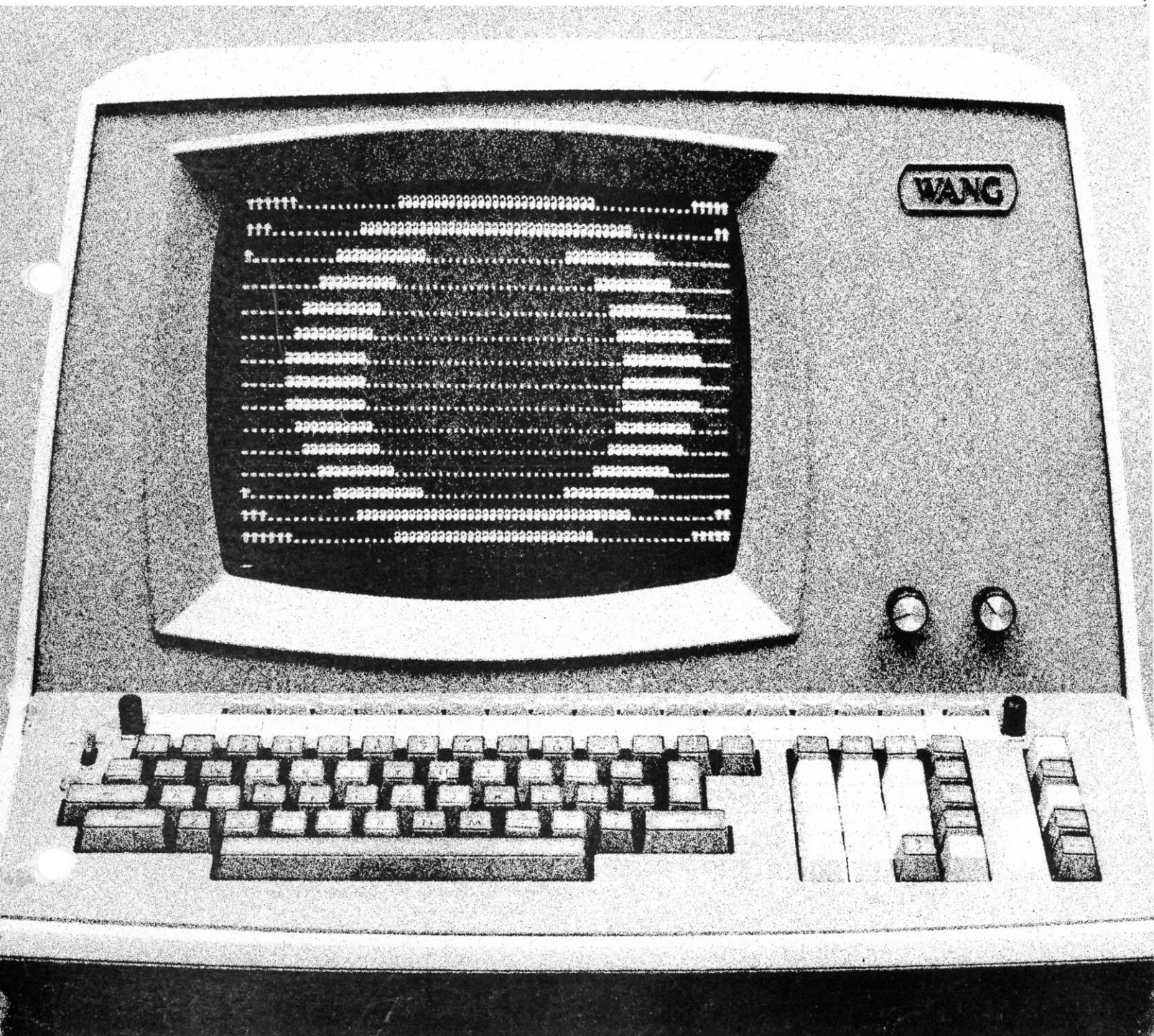
Software Utilities

WANG

**EASYFORM III
RELEASE 2
USER MANUAL**

INTERIM

SYSTEM 2200



EASYFORM III
RELEASE 2
USER MANUAL

INTERIM

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HOW TO USE THIS MANUAL

This manual should be used in conjunction with the EASYFORM III User Manual (700-4775). Since this manual only describes Release 2 features not found in the first release of EASYFORM III, the reader should become familiar with the information contained in the EASYFORM III User Manual before reading this manual. This manual supplements the EASYFORM III User Manual by describing Release 2 features in the following manner:

- . Chapter 1 describes the new features incorporated into Release 2.
- . Chapter 2 describes the revised SELECT/SORT program (replaces Chapter 9 in the EASYFORM III User Manual).
- . Chapter 3 describes the revised REORGANIZE DATA FILE program (replaces Chapter 10 in the EASYFORM III User Manual).
- . Chapter 4 describes the new CONVERT EASYFORM TO TC FORMAT program.
- . Chapter 5 describes the new CONVERT TC TO EASYFORM FORMAT program.
- . Appendix A lists all EASYFORM III error messages and provides error recovery procedures. This appendix replaces Appendix D in the EASYFORM III User Manual.
- . Appendix B defines the TC file format.

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CHAPTER 1

GENERAL INFORMATION

1.1 EASYFORM III

Release 2 of the EASYFORM III software package provides additional features not available in the first release of EASYFORM III. To support these new features as soon as possible, this interim manual is provided in conjunction with the EASYFORM III User Manual (700-4775). Since this manual only describes Release 2 features, the reader should become familiar with the information in the EASYFORM III User Manual before reading this manual.

1.2 THE RELEASE 2 FEATURES

Features associated with Release 2 not found in the first release of EASYFORM III include the following:

1. Two new utility programs are provided. The CONVERT EASYFORM TO TC FORMAT program converts a specified EASYFORM (KFAM) data file into Wang's TC (Telecommunication) format, and copies the converted data into an output file. The TC formatted output file may then be transmitted to a remote system using one of Wang's Telecommunication Emulator utility systems.

The CONVERT TC TO EASYFORM FORMAT program converts and copies a specified TC formatted data file into an EASYFORM data file, based upon the form corresponding to the data file. The form must reside on the EASYFORM III System Disk(ette) in use. Once the file has been converted to EASYFORM format, EASYFORM utility programs such as DATA ENTRY/UPDATE may be used for operations on the converted data file. The CONVERT TC TO EASYFORM FORMAT program, for converted files, eliminates the need for the CREATE DATA FILE program by automatically creating (cataloging) a new data file and key file based upon the input TC data file and its associated form.

2. The SELECT/SORT program has been modified to allow records matching the entered search mask to be saved into a previously created EASYFORM data file, in addition to being printed or displayed on the screen. The saved records, for instance, may be converted into TC format and transmitted to a remote system.

3. EASYFORM III Release 2 is now compatible with a 2200MVP central processor. At least a 17K memory partition is required (a larger partition is needed with extensive user exit programming). To accommodate the keyboard of a 2200MVP terminal, the CREATE FORM and EDIT FORM programs have been modified to eliminate the use of the PRINT key. Instead of touching the PRINT key, depress S.F. Key '2 to activate entry fields (segment 1) and to accept displayed field characteristics (segment 2).
4. A prompt in the PRINT FORM program has been modified to allow use of a character printer as an output device. Instead of the prompt "OUTPUT TO CRT (1=YES)?", the following prompt appears:

ENTER OUTPUT DEVICE

1 = CRT
2 = LINE PRINTER
3 = CHARACTER PRINTER

- To display form characteristics on the CRT screen, enter 1 and touch the RETURN key. To print form characteristics to a Wang LINE PRINTER, which prints a line at a time, enter 2 and touch the RETURN key. To print form characteristics to a Wang CHARACTER PRINTER, which prints a character at a time, e.g., Models 2201L, 2281, and 2281P, enter 3 and touch the RETURN key.
5. The combination of a Full field (Field quality) and a Numeric zero-fill, right-justified field is no longer valid. Similarly, if the field length exceeds the 13-digit precision supported by EASYFORM, the field cannot be specified as a Numeric field (field type).
 6. The REORGANIZE DATA FILE program is no longer supplied on System Diskette #2. Instead, all EASYFORM software is supplied on one System Diskette (701-2392A). Only EASYFORM software and user-defined forms should reside on a copy of the System Disk(ette); data files are usually stored on separate disks or diskettes. The operation of the REORGANIZE SUBSYSTEM program has been changed, as described in Chapter 3.
 7. Each copy of the Release 2 System Disk(ette) can contain a maximum of 16 forms, instead of 21 forms per System Disk(ette) with Release 1. The three data files which make up each form may be copied from a Release 1 System Disk(ette) to a copy of a Release 2 System Disk(ette) using the ISS Copy/Verify utility, or, if a 2200VP or 2200MVP central processor is available, the MOVE TO form of the MOVE statement may be used. See Appendix B in the EASYFORM III User Manual for further information.

8. Wang's ISS Copy/Verify utility must not be used to copy the EASYFORM files "KFAM3003", "KFAM3103", "KFAM3203", and "WORK" which make up the REORGANIZE DATA FILE program. Since at least one backup copy of the supplied System Diskette must be made, the COPY or MOVE statement must be used, and a dual diskette drive is required. With a 2200VP or 2200MVP central processor, however, the MOVE TO form of the MOVE statement may be used, which eliminates the need for a dual diskette drive. To copy all EASYFORM III software to a fixed/removable disk, use the MOVE TO form of the MOVE statement. To copy all EASYFORM III software except for the above-mentioned files which make up the REORGANIZE DATA FILE program, use the ISS Copy/Verify utility.
9. The amount of memory available for user-exit program text in the "EASYDENT" program file is now 200 bytes instead of 400 bytes (when using a 2200T central processor).
10. With a 2200MVP central processor or a multiple CPU, disk multiplexed environment, it is the user's responsibility to ensure that only one disk multiplexed CPU or 2200MVP partition is accessing an EASYFORM data file at any one time. Multiple user access to any EASYFORM III (KFAM-3) data file is strictly not supported by Wang Laboratories, Inc.

1.3 THE ACTIVITY MENU

The Activity menu shown in Figure 1-2 on page 16 of the EASYFORM III User Manual has been changed to reflect the availability of the new programs, as shown below:

EASYFORM SYSTEM DISK ACTIVITY MENU

SF KEY ACTIVITIES	SF KEY ACTIVITIES
0 RE-DISPLAY MENU 1 DATA ENTRY/UPDATE 2 PRINT DATA 3 SELECT/SORT 4 CREATE DATA FILE 5 REORGANIZE DATA FILE	6 CREATE FORM 7 EDIT FORM 8 PRINT FORM 9 CREATE PREPRINT FORMAT 10 CONVERT EASYFORM TO TC FORMAT 11 CONVERT TC TO EASYFORM FORMAT

S.F. key options '10 and '11 correspond to the new programs provided with Release 2. The S.F. Key '0 option was previously available but did not appear on the Activity menu; it allows the user to redisplay the Activity menu after a program has been chosen.

Table 1-1 lists each program's name, the S.F. key which allows it to be chosen, and the chapter of the appropriate manual where it is described.

Table 1-1. Activity Menu Options

PROGRAM NAME	S.F. KEY	CHAPTER/MANUAL
DATA ENTRY/UPDATE	'1	6 of the EASYFORM III User Manual
PRINT DATA	'2	7 of the EASYFORM III User Manual
SELECT/SORT	'3	2 of this manual*
CREATE DATA FILE	'4	5 of the EASYFORM III User Manual
REORGANIZE DATA FILE	'5	3 of this manual*
CREATE FORM	'6	2 of the EASYFORM III User Manual
EDIT FORM	'7	3 of the EASYFORM III User Manual
PRINT FORM	'8	4 of the EASYFORM III User Manual
CREATE PREPRINT FORMAT	'9	8 of the EASYFORM III User Manual
CONVERT EASYFORM TO TC FORMAT	'10	4 of this manual
CONVERT TC TO EASYFORM FORMAT	'11	5 of this manual

* Chapters 2 and 3 in this manual obsolete Chapters 9 and 10 in the EASYFORM III User Manual.

NOTE:

EASYFORM III error messages and recovery procedures are provided in Appendix A of this manual. Appendix A of this manual obsoletes Appendix D of the EASYFORM III User Manual, regardless of the program used.

CHAPTER 2

SELECT/SORT

2.1 INTRODUCTION

The SELECT/SORT program allows records to be selected from a specified input data file based upon a "search mask" entered by the operator into entry fields of the form associated with the input data file. Those input file records whose contents match the entered "search mask" may be viewed on the screen, output to a printer, saved into a specified output data file, or any combination thereof. The "search mask" may be any combination of one, some, or all possible characters entered into one or more entry fields. Records whose contents match the search mask are output according to the ascending order of their key fields (sorted order).

The records output may be printed or displayed according to any of the three print formats also available with the PRINT DATA program. Refer to Section 7.1 in the EASYFORM III User Manual for a description of the available print formats.

If records are to be saved into an output file, the output file must have previously been created using the CREATE DATA FILE program*. Selected records are saved without overwriting any previously saved records in the output file. Should duplicate keys be encountered, an error message appears.

2.2 OPERATING INSTRUCTIONS

To load (operate) the SELECT/SORT program, depress the corresponding S.F. Key in response to the Activity menu. The first prompt appears on the screen:

```
EASYFORM SYSTEM UTILITIES
ENTER INPUT DATA DISK FILE ADDRESS      DEFAULT=2
1(F)=310      2(R)=B10      3(F)=320      4(R)=B20
```

This prompt requests the disk address of the disk(ette) which contains the input data file to be searched. Mount the disk(ette) if it is not already mounted.

* If the output file was previously converted using the CONVERT TC TO EASYFORM program, the CREATE DATA FILE program is not necessary.

The default value is 2 (DEFAULT=2) which is address B10. If the disk(ette) which contains the data file is mounted at address 310, enter 1 and touch the RETURN key. If mounted at address B10, touch the RETURN key without entering any characters. If mounted at address 320, enter 3 and touch the RETURN key. If mounted at address B20, enter 4 and touch the RETURN key. If an invalid reply (other than 1, 2, 3, or 4) is entered, the prompt reappears; re-enter the number and touch the RETURN key. Otherwise, the second prompt replaces the first:

```
EASYFORM SYSTEM UTILITIES      SELECT/SORT
ENTER INPUT DATA FILE NAME
?_
```

The second prompt may appear with a default data file name (DEFAULT=); if acceptable, touch the RETURN key. Otherwise, enter the file name of the data file to be searched in the form bbbbFlbb (where b indicates any character). Verify that the file name is correct and touch the RETURN key. If the file name entered is not found at the disk address specified, an error message appears (refer to Appendix A). If the Activity menu appears at this time, refer to Section 7.3 in the EASYFORM III User Manual. Otherwise, the next prompt appears:

```
ENTER SAVE OPTION
-----
```

1. SAVE ALL RECORDS
2. SAVE RECORDS OPTIONALLY
3. SAVE NO RECORDS

The third prompt appears requesting whether records matching the search mask are to be saved into an output file. To automatically save all records selected by the search mask, enter 1 and touch the RETURN key. To view each selected record on the screen and have the user-interactive option of saving it after viewing it, enter 2 and touch the RETURN key. To only print or display selected records, but not save them into an output file, enter 3 and touch the RETURN key; the sixth prompt appears. Otherwise, the fourth prompt appears:

```
ENTER OUTPUT DATA DISK FILE ADDRESS      DEFAULT = 2
1(F) = 310   2(R) = B10   3(F) = 320   4(R) = B20
```

The fourth prompt requests the disk address where the output file resides. Mount the disk(ette) if it is not already mounted.

The default value is 2 (DEFAULT = 2) which is address B10. If the disk(ette) which contains the output file is mounted at address 310, enter 1 and touch the RETURN key. If mounted at address B10, touch the RETURN key without entering any characters. If mounted at address 320, enter 3 and touch the RETURN key. If mounted at address B20, enter 4 and touch the RETURN key. The fifth prompt appears:

```
ENTER OUTPUT DATA FILE NAME
```

The fifth prompt requests the file name of the output file where selected records are to be saved. The file must have previously been created (if not, touch S.F. Key '0 and choose CREATE DATA FILE). Enter the output file name using the form bbbbFlbb (where b indicates any character). Verify that the name entered is correct and touch the RETURN key. Should the Activity Menu appear instead of the sixth prompt, refer to Chapter 7, Section 7.3 in the EASYFORM III User Manual. An error message may appear at this time (see Appendix A). Otherwise, the sixth prompt appears:

```
FORMATTED PRINT OUTPUT FOR FORM 'nn'  
ENTER OUTPUT TYPE? _
```

- ```

1 = PRINT OUTPUT OF DATA IMAGES
2 = PRINT OUTPUT IDENTICAL TO SCREEN DISPLAY
3 = PRINT OUTPUT TO PRE-PRINTED FORM
4 = PRINT NO RECORDS
```

The sixth prompt requests the type of printer or CRT output format to be used. Either accept the displayed default number (if any) or enter the number which indicates the desired format. To output (print or display) only data records ("Image List"), enter 1 and touch the RETURN key. To output the screen image with the contents of each record inserted into entry fields ("List Filling Form"), enter 2 and touch the RETURN key. To print the records according to a previously created preprint format, enter 3 and touch the RETURN key. (The preprint format must have been created for the form chosen using the CREATE PREPRINT FORMAT program prior to operating SELECT/SORT.) If no records are to be output, enter 4 and touch the RETURN key. If the reply is not acceptable, the prompt reappears; re-enter the number and touch RETURN.

If no output was specified, the form's screen image appears requesting entry of the search mask (see below). If the preprint format option was specified, the eighth prompt appears; otherwise, the seventh prompt appears:

```
OUTPUT TO CRT (1=YES)? _
```

To output the records selected to a printer, touch the RETURN key without entering any characters. To view the records selected on the CRT screen, enter 1 and touch the RETURN key. If the prompt reappears, re-enter the reply. With displayed (CRT) output, the form's screen image appears requesting entry of the search mask. With printed output, the eighth prompt appears:

```
ENTER HARDCOPY PRINT MODE
```

- ```
-----  
1 = PRINT ALL RECORDS  
2 = PRINT RECORDS OPTIONALLY
```

The eighth prompt requests whether all or some of the records matching the search mask are to be printed. To print all selected records automatically, enter 1 and touch the RETURN key. To view each selected record on the screen and have the user-interactive option of printing it after viewing it, enter 2 and touch the RETURN key.

Entering the Search Mask

After the appropriate parameters have been entered in response to SELECT/SORT prompts, "LOADING SEARCH MASK" briefly appears. If records are to be saved, "RECORDS WILL BE SAVED IN filename" also appears (where filename is replaced by the specified output file name). The screen is then cleared of all characters, and the screen image of the form which corresponds to the specified input file appears. To abort operation at this time, touch the HALT/STEP key and S.F. Key '0. Otherwise, the following appears at the bottom of the screen:

ENTER SEARCH MASK '0=START SEARCH '7=HOME

The process of entering the search mask should be done with great care. Any characters entered--including spaces--become part of the search mask, which may consist of one or more characters in one or more entry fields. The following keys are available during entry of the search mask:

- a. The RETURN key advances the cursor to the next field.
- b. S.F. Key '7 moves the cursor to the beginning (leftmost position) of the first field.
- c. S.F. Key '12 (→) moves the cursor right one position without erasing any characters or placing a space in the vacated position.
- d. S.F. Key '13 (←) moves the cursor left one position without erasing any characters.
- e. S.F. Key '8 (ERASE) erases all characters including spaces to the right of the cursor's position within the current field. The cursor's position is unchanged.
- f. The BACK SPACE key moves the cursor left one position and erases any character in the cursor's new position.
- g. The SPACE (bar) key moves the cursor right one position and places a space character in the vacated position.

The search mask entered determines which records will be selected for output. Characters may be entered into fields which normally are not operator-modifiable. Automatic filling of entry fields is inhibited.

For numeric type fields, the entire value entered into the field is used for search mask testing, unlike other types of entry fields (including digits type fields) where the search mask testing occurs on a character-by-character basis.

Each character entered into its respective position within an entry field must exactly match characters contained within a data record at the same, corresponding positions. If all characters entered exactly match the characters contained in the data record being searched, that record is included among the records output; if any of the characters entered do not match the characters contained in the data record being searched, that record is not included among the records output. All records in the specified data file (except for deleted records) are searched.

In general, if more characters are entered into a search mask, then fewer records are usually output. Some search masks may be so selective that no records are output.

In contrast, if fewer characters are entered into a search mask, then more records are usually output. If no characters are entered, for instance, all records in the file will be output.

Error messages may appear while entering the search mask and are described in the EASYFORM III User Manual, Table 6-2. (Checking for Required or Full fields does not occur during SELECT/SORT.)

Activating the Search

To activate (begin) the search after entering the search mask, depress S.F. Key '0. "LOADING SEARCH LOGIC" appears briefly in the lower left corner of the screen and is replaced by "PERFORMING SEARCH" and the key of the record currently being searched.

When a record is found which matches the search mask, the prompt which appears depends upon the responses previously made in reply to the third prompt (SAVE OPTION), the sixth prompt (OUTPUT TYPE), and the seventh and eighth prompts.

With CRT output or if records are to be optionally saved or printed, each record matching the search mask appears on the screen for user viewing. If records are to be both optionally saved and optionally printed, the following options appear on the bottom of the screen:

'2 = Save '3 = Print '4 = Save and Print RETURN = Next Record?

To save this record into the output file but not print it, depress S.F. Key '2. To print this record but not save it, depress S.F. Key '3. To both save and print this record, depress S.F. Key '4. To neither print nor save this record, touch the RETURN key.

The S. F. Keys which do not apply to the particular operation chosen are not displayed. For instance, with CRT output without optionally saving records, S.F. Key options '2, '3, and '4 are neither displayed nor applicable. If only optionally printed output was specified, S.F. Key options '2 and '4 do not apply. If only optionally saved output was specified, S.F. Key options '3 and '4 do not apply.

If all records matching the search mask are to be automatically saved, or after depressing S.F. Key '2 (or '4) to save the displayed record, the message "SAVING RECORD" and the key of the record being saved briefly appear. Certain error messages, including an indication of duplicate keys, may also appear at this time; otherwise, the "PERFORMING SEARCH" message reappears until the next record matching the search mask is found.

If records are to be automatically saved and/or printed without being displayed, optionally saved, or optionally printed, the selected records are saved and/or printed without operator interaction until all records have been searched or an error message appears.

Upon completion of the search, the following prompt appears and may be accompanied by an error message:

KEY RETURN (EXEC) TO RESUME?

SEARCH COMPLETED

Touch the RETURN key to obtain the Activity menu.

CHAPTER 3

REORGANIZE DATA FILE

3.1 INTRODUCTION

The REORGANIZE DATA FILE program is occasionally required to reorganize data files. After a data file has been reorganized, all disk space previously occupied by deleted records within the file is available for saving new records, and the sequence in which records are stored within the data file is reordered according to the ascending value of each record's key. Corresponding information in the key file is similarly updated.

CAUTION:

Before loading (operating) the REORGANIZE DATA FILE program, a backup copy of the data file and its key file must be made. A key file is assigned the same name as the data file except the "F" in the fifth position becomes a "K". Refer to Chapter 1, Section 1.5 in the EASYFORM III User Manual for backup copying procedures.

NOTES:

1. To abort operation of the REORGANIZE DATA FILE program, i.e., instead of replying to a prompt, touch the HALT/STEP key, touch the RETURN key, enter CLEAR, and touch the RETURN key. EASYFORM III software may be reloaded (see Chapter 1, Section 1.6 in the EASYFORM III User Manual).
2. The data file to be reorganized by REORGANIZE DATA FILE must contain at least one active record. Should a file contain all deleted records, insert a "dummy record" using the DATA ENTRY/UPDATE program and then use the REORGANIZE DATA FILE program. Following reorganization, the "dummy record" may be deleted when the DATA ENTRY/UPDATE program is used.

3.2 OPERATING INSTRUCTIONS

To load (operate) the REORGANIZE DATA FILE program, depress the corresponding S.F. Key in response to the Activity menu. The first prompt soon appears on the screen:

ARE THERE BACKUP COPIES OF USER FILE AND KEY FILE? (Y OR N)
?_
_

If a backup copy of the data file (USER FILE) and its KEY FILE has been made, enter Y and touch the RETURN key; the second prompt appears. "RE-ENTER" appears if a character other than Y or N is entered; simply re-enter Y and touch the RETURN key.

If a backup copy of the data file and the key file has not been made, refer to the CAUTION above. If the operator enters N and touches the RETURN key, the following error message appears: "ANY ERROR DURING THE RUNNING OF KFAM3203 WILL DESTROY BOTH FILES. MAKE COPIES OF THE DISK PLATTER(S) CONTAINING THE USER FILE AND THE KEY FILE BEFORE RUNNING THIS PROGRAM. STOP". The operator must then reload EASYFORM software to obtain the Activity menu (as described in Section 1.6 of the EASYFORM III User Manual).

ENTER USER FILE NAME (SSSSFJNN)
?-----
_

The second prompt requests the name of the data file to be reorganized. EASYFORM file names are always in the form bbbbFlbb where b is any character. Enter the file name, verify the entry made, and touch the RETURN key. The third prompt appears unless an error message appears instead (see Appendix A).

ENTER THE NO. OF THE USER FILE DEVICE ADDRESS
?-/

- | | | | |
|----|-----|----|-----|
| 1. | 310 | 3. | 320 |
| 2. | B10 | 4. | B20 |

The third prompt requests the number indicating the disk address where the data file to be reorganized resides. If not already mounted, mount the disk(ette) containing the data file.

If the data file disk(ette) is mounted at address 310, enter 1 and touch the RETURN key. If mounted at address B10, enter 2 and touch the RETURN key. If mounted at address 320, enter 3 and touch the RETURN key. If mounted at address B20, enter 4 and touch the RETURN key. If an error message appears, see Appendix A.

The following execution messages briefly appear on the screen and no operator action is required: "GENERATE CODE (KFAM3103)" which is followed by "REORGANIZE KFAM FILE (KFAM3203)."

NOTE:

If an error message appears after either "GENERATE CODE (KFAM3103)" or "REORGANIZE KFAM FILE (KFAM3203)" appears, with the exception of either "WORK FILE TOO SMALL" or any "ERR nn" error not accompanied by "REORGANIZE KFAM FILE", the data file and key file must be recreated from the backup copy. Enter CLEAR and touch the RETURN key. It is recommended that the operation be reattempted after making backup copies. Contact Wang Laboratories, Inc. if such errors persist.

Upon successful completion of REORGANIZE DATA FILE, the following message appears:

```
RECORD COUNT = nnn  
END OF REORGANIZE
```

This message appears briefly on the screen and requires no operator action. It indicates the number of active records (RECORD COUNT) in the reorganized data file (nnn above). Because REORGANIZE DATA FILE makes available disk space previously occupied by deleted records, the number of records shown reflects only active records, unlike the APPROXIMATE USAGE (%) during DATA ENTRY/UPDATE which reflects both active and deleted records in the file.

The Activity menu soon appears on the screen.

CHAPTER 4

CONVERT EASYFORM TO TC FORMAT

4.1 INTRODUCTION

The CONVERT EASYFORM TO TC FORMAT program converts a specified EASYFORM data file (KFAM format) into a data file in TC format suitable for transmission to a remote system using one of Wang's Telecommunication Emulator utility systems. The KFAM file to be converted is referred to as the "input file." The input file is converted and copied to a specified "output file" in TC format. The output file may be automatically created (cataloged on the output disk) to contain the converted file's contents or an existing data file whose contents are no longer needed may be overwritten with the converted file's contents.

With the DATA ENTRY/UPDATE program, each KFAM record of up to 720 characters consists of nine 80-character "images". During the conversion of KFAM records into TC formatted records, trailing spaces in the fixed-length KFAM records are eliminated, and the resulting TC records are variable length records also comprised of 80-character "images". The number of 80-character images which make up each TC formatted output record is displayed after the conversion has been completed. The TC storage format is described in Appendix B of this manual.

Upon reception of the previously converted data file at the remote system, the TC formatted data is usually processed by application software. If the remote system is a Wang 2200 Computer System compatible with EASYFORM hardware requirements, it may be used to convert the TC formatted data file back to EASYFORM format using the CONVERT TC TO EASYFORM FORMAT program (see Chapter 5).

4.2 OPERATING INSTRUCTIONS

To load the CONVERT EASYFORM TO TC FORMAT program, depress the corresponding S.F. Key in response to the Activity menu. The first prompt appears on the screen:

```
EASYFORM SYSTEM UTILITIES          EASYFORM TO TC CONVERSION
ENTER INPUT DATA DISK FILE ADDRESS    DEFAULT = 2
1(F) = 310      2(R) = B10      3(F) = 320      4(R) = B20
```

The first prompt requests the disk address where the input EASYFORM (KFAM) data file resides. The disk address where the System Disk(ette) resides must not be specified as the input file disk address. Either accept the default value (DEFAULT = 2) of B10 or enter the number corresponding to the input file disk address and touch the RETURN key. The input disk(ette) must be mounted at this time. If the specified input address is the same as the disk address of the System Disk(ette), an error message appears. The second prompt replaces the first:

```
ENTER INPUT DATA FILE NAME
```

The second prompt requests the name of the input EASYFORM (KFAM) data file. A default file name (DEFAULT = filename) may appear. Either accept the default input file name (if any) or enter the file name using the form bbbbFlbb (where b indicates any character), and touch the RETURN key. Should the Activity menu appear instead of the third prompt, refer to Chapter 7, Section 7.3 in the EASYFORM III User Manual.

```
ENTER OUTPUT DATA DISK FILE ADDRESS    DEFAULT = 2
1(F) = 310      2(R) = B10      3(F) = 320      4(R) = B20
```

The third prompt requests the disk address where the output TC formatted data file is to be written (saved). The disk address where the System Disk(ette) resides may be specified as the output disk address, and the output address may be the same as the input address if the file names are different. Either accept the default disk address (DEFAULT = 2) of B10 or enter the number corresponding to the desired disk address and touch the RETURN key. The output disk(ette) must be mounted at this time. If the output address is the same as the disk address of the System Disk(ette), the prompt "MOUNT OUTPUT DATA DISK IN ADDRESS xyz, KEY RETURN (EXEC) TO RESUME?" appears (where xyz is replaced by the specified output disk address); mount the output disk and touch the RETURN key.

```
ENTER OUTPUT DATA FILE NAME
```

The fourth prompt requests the name of the output TC formatted file. If the converted output records are to overwrite the contents of a previously cataloged (created) file, the output file name entered here must be identical to the previously assigned file name. If the converted output records will be written into a file to be cataloged by this utility, the file name must be unique to the output disk. The file name may be from one through eight characters long, and there are no requirements on the characters which make up the file name. The output file name should be written down to enable its subsequent transmission to a remote system. Enter the file name and touch the RETURN key.

IS filename IN THE CATALOG (Y/N)

The fifth prompt asks whether the output file has been previously cataloged on the specified output disk. If the file has been previously cataloged, enter Y and touch the RETURN key; if the file is to be cataloged by this utility, enter N and touch the RETURN key. At this time an error message may appear which allows the third prompt to be redisplayed (see Appendix A). Otherwise, the following message appears during conversion:

CONVERTING filename TO TC FORMAT

The specified input file name replaces "filename" above. No operator action is required. Upon successful completion of conversion, the following appears.

EASYFORM SYSTEM UTILITIES EASYFORM TO TC CONVERSION
KEY RETURN (EXEC) TO RESUME?

CONVERSION COMPLETE
n CARD IMAGES HAVE BEEN CREATED PER KFAM RECORD

The number of 80-character images per KFAM record replaces the n shown above and should be written down. An error message may accompany this prompt. If the output disk address is the same as that of the System Disk(ette), the message "MOUNT PROGRAM/FORMS DISK IN UNIT xyz" appears above the "KEY RETURN (EXEC) TO RESUME?" requesting that the output disk be replaced by the System Disk(ette) at the disk address displayed (which replaces the xyz).

Touch the RETURN key to obtain the Activity Menu.

CHAPTER 5

CONVERT TC TO EASYFORM FORMAT

5.1 INTRODUCTION

The CONVERT TC TO EASYFORM FORMAT program converts a specified TC formatted data file into a data file in EASYFORM (KFAM) format suitable for use with the various EASYFORM programs. The TC file to be converted is referred to as the "input file." All input file records are converted and copied to a specified "output file" in EASYFORM format. The output file is automatically cataloged (created) on the output disk, into which the converted records are then copied. Also, the user specifies an estimated number of extra records, and the utility allocates (reserves) enough disk file space for both the converted records and the specified number of extra records. A key file is created for the EASYFORM data file.

NOTES:

1. To operate the CONVERT TC TO EASYFORM FORMAT program, a form corresponding to the data file to be converted must be located on the System Disk(ette) to be used. If not available, an existing form can be duplicated using hardcopy output from the PRINT FORM program as a basis for input to the CREATE FORM program, or a copy of the System Disk(ette) can be physically sent from the remote site originating the data.
2. The key field in each record must be a unique alphanumeric value as compared to key fields in other records within the same data file. Records containing duplicate keys are not copied into the output EASYFORM file during conversion. The length of the first field (always the key field) as defined in the form becomes the key length associated with the file.

3. A thorough understanding of CREATE FORM storage assignments, field type options, and other field characteristics is required when creating a form for data to be converted to EASYFORM format, especially if the data was not created originally using EASYFORM. With forms where field filling is to occur via math functions and/or user exits, each converted data record must be recalled using the DATA ENTRY/UPDATE program, the cursor moved through all fields, and each record resaved (updated). This procedure ensures that all records containing fields to be filled will contain data after the record is resaved.

5.2 OPERATING INSTRUCTIONS

To load the CONVERT TC TO EASYFORM FORMAT program, depress the corresponding S.F. Key in response to the Activity menu. The first prompt appears on the screen:

```
EASYFORM SYSTEM UTILITIES          TC TO EASYFORM CONVERSION
ENTER FORM NUMBER
```

The first prompt requests entry of the form number stored on the System Disk(ette) which corresponds to the TC formatted data file about to be converted. A default form number may also be displayed (DEFAULT =). Either accept the displayed default form number (if any) or enter the form number and touch the RETURN key. The second prompt replaces the first:

```
ENTER INPUT DATA DISK FILE ADDRESS      DEFAULT = 2
1(F) = 310    2(R) = B10    3(F) = 320    4(R) = B20
```

The second prompt requests the disk address where the input TC formatted data file resides. The disk address where the System Disk(ette) resides may be specified as the input disk address. Either accept the default value (DEFAULT = 2) or enter the number corresponding to the input file disk address, and touch the RETURN key. The input disk(ette) may be mounted at this time. If the input disk address is the same as the disk address of the System Disk(ette), the prompt "MOUNT OUTPUT DISK IN UNIT xyz, KEY RETURN (EXEC) TO RESUME?" appears (where xyz is replaced by the specified input disk address); mount the input disk and touch the RETURN key.

```
ENTER INPUT FILE NAME
```

The third prompt requests the name of the input TC formatted data file. A default file name (DEFAULT = filename) may appear. Either accept the default file name (if any) or enter the file name and touch the RETURN key.

```
ENTER OUTPUT DATA DISK FILE ADDRESS     DEFAULT = 2
1(F) = 310    2(R) = B10    3(F) = 320    4(R) = B20
```

The fourth prompt requests the disk address where the output EASYFORM data file (and key file) are to be written. The disk address where the System Disk(ette) now resides may be specified as the output disk address, and the output address may be the same as the input address if the file names are different. Either accept the default disk address (DEFAULT = 2) of B10 or enter the number corresponding to the desired disk address and touch the RETURN key. The output disk may be mounted at this time. If the output disk address is the same as the disk address of the System Disk(ette), the prompt "MOUNT OUTPUT DATA DISK IN ADDRESS xyz, KEY RETURN (EXEC) TO RESUME?" appears (where xyz is replaced by the specified output disk address); mount the output disk and touch the RETURN key.

ENTER OUTPUT DATA FILE NAME

The fifth prompt requests the name to be assigned to the output EASYFORM data file about to be created. A default file name (DEFAULT = filename) may appear. Either accept the default file name (if any) or enter the file name using the form bbbbFlbb (where b indicates any character), and touch the RETURN key. Should the Activity Menu appear instead of the sixth prompt, refer to Chapter 7, Section 7.3 in the EASYFORM III User Manual.

ENTER NUMBER OF EXTRA RECORDS TO RESERVE IN THE OUTPUT FILE.

The sixth prompt requests the number of extra records for which the output data file should reserve disk space, in addition to the disk space for the TC formatted records about to be converted. Any integer between 1 (one) and the maximum number of extra records that can be contained on the output disk(ette) is acceptable. Enter the desired number of extra records and touch the RETURN key; the program checks to ensure that sufficient disk space exists on the output disk for the converted records and extra records. If enough disk space exists, the following message appears during conversion.

CONVERTING filename TO KFAM FORMAT

The specified input file name replaces "filename" above. No operator action is required. Upon successful completion of conversion, the following appears:

```
EASYFORM SYSTEM UTILITIES          TC TO EASYFORM CONVERSION
KEY RETURN (EXEC) TO RESUME?
```

CONVERSION COMPLETED

An error message may also accompany this prompt (if so, see Appendix A). Otherwise, touch the RETURN key to obtain the Activity menu.

APPENDIX A

ERROR MESSAGES AND RECOVERY INFORMATION

There are two types of error messages which may appear on the screen during EASYFORM III operation. The first type includes error messages displayed under the control of EASYFORM III which are usually recoverable. The other type of error message appears in the form "ERR nn" where nn is the error code. The "ERR nn" type of error message is generally not immediately recoverable.

Table A-1 lists error messages and recovery procedures associated with EASYFORM III prompts. If an error message appears which is not listed in Table A-1, refer to the description of the program in use. EASYFORM III error messages associated with the entry of data into a form are listed in the EASYFORM III User Manual in Table 6-2. Other error messages applicable to DATA ENTRY/UPDATE operation are listed in Table 6-3 in the EASYFORM III User Manual. If the Activity menu appears after entering a data file name, refer to Chapter 7, Section 7.3 in the EASYFORM III User Manual.

Invalid Disk Addresses and a "Hanging" System

In response to any EASYFORM prompt requesting a disk address, if a disk address is chosen corresponding to a disk(ette) drive which is nonexistent or whose power is not on, the system will "hang" (nothing occurs for a prolonged period of time) after a reply is entered to subsequent prompts or the Activity menu. A definite indicator of a "hanging" system is that the processing light (upper-left area of the keyboard) remains illuminated, and the information expected does not appear on the screen for a prolonged period of time, such as one minute. The recovery procedures which follow must be completed only if the system has been "hanging" for more than one minute*:

1. Touch the RESET switch, located in the upper-left area of the keyboard.
2. Depress S.F. Key '0; the Activity menu should appear.
3. Once the Activity menu appears, touch the HALT/STEP key.
4. Refer to the instructions necessary to load EASYFORM III software in Section 1.6 in the EASYFORM III User Manual.

* With a 2200MVP terminal, there is no processing light and a different memory partition may be temporarily "hogging" the disk drive. It is therefore recommended that the user wait longer than one minute.

Table A-1. Error Messages Applicable to EASYFORM III Prompts

ERROR MESSAGE	DESCRIPTION/RECOVERY
<p>DUPLICATE KEYS - DO YOU WANT TO PRINT (Y/N)?</p>	<p>During SELECT/SORT operation when records are to be optionally saved and printed or optionally printed, a record with the same key as a record already in the output file has been found which matches the search mask. This record will not be written into the output file. To print this record, enter Y. To continue without printing the record, enter N. The search resumes after Y or N has been entered. The printed duplicate record should be compared to the previously saved record which has the same key.</p>
<p>ERR nn</p>	<p>If "ERR 29" or "ERR X25" appears in an entry field, touch the RETURN key, and see "RE-ENTER" below.</p> <p>If "ERR 64", "ERR 80", "ERR D82", or "ERR I98" appears, the error was most likely caused by the correct disk(ette) not being mounted at the previously chosen disk address.</p> <p>For all other "ERR nn" errors, refer to the "Disk Reference Manual" for an interpretation of the error code.</p> <p>For all programs except REORGANIZE DATA FILE, depress S.F. Key '0. If operating REORGANIZE DATA FILE, enter CLEAR and touch the RETURN key. In either case, reload EASYFORM III software and retry the attempted operation.</p>
<p>FILE bbbbFlbb - ALREADY EXISTS</p>	<p>Attempted to create a data file with the same file name as a previously created data file on the disk(ette) specified. The file name entered (bbbbFlbb) appears. Re-enter a different file name and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B* if this error persists.</p>

Table A-1. Error Messages Applicable to EASYFORM III Prompts (cont'd)

ERROR MESSAGE	DESCRIPTION/RECOVERY
<p>FILE - filename - CONTAINS NO RECORDS KEY RETURN (EXEC) TO RESUME?</p>	<p>The specified input file whose file name appears in the error message contains no records. Touch the RETURN key to obtain the Activity menu. Retry using the correct input file name or disk(ette).</p>
<p>FILE bbbbf1bb - IS SCRATCHED</p>	<p>Attempted to create or access a data file which has been scratched from the disk(ette) specified. The file name entered (bbbf1bb) appears. Re-enter the correct file name and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B* if this error persists.</p>
<p>FILE bbbbf1bb - DOES NOT EXIST</p>	<p>Attempted to access a data file which does not exist on the disk(ette) specified. The file name entered (bbbf1bb) appears. Re-enter the correct file name and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B* if this error persists.</p>
<p>FORM - nn - ALREADY EXISTS</p>	<p>Attempted to create a form with the same form number as a previously created form on the System Disk(ette) in use. The form number entered (nn) appears. Once created using CREATE FORM, a form may be modified using EDIT FORM. Re-enter the correct form number and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B* if this error persists.</p>

Table A-1. Error Messages Applicable to EASYFORM III Prompts (cont'd)

ERROR MESSAGE	DESCRIPTION/RECOVERY
FORM - nn - DOES NOT EXIST	Attempted to access a form which does not exist on the System Disk(ette) in use. The form number corresponding to the specified file name or the form number entered (nn) appears. Re-enter the correct form number or file name and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B*.
FORM - nn - IS SCRATCHED	Attempted to access a form which has been scratched from the System Disk(ette) in use. The form number corresponding to the specified file name or the form number entered (nn) appears. Re-enter the correct form number or file name and touch RETURN, or abort this program by touching the HALT/STEP key and depressing S.F. Key '0. Also see Appendix B* if this error persists.
INPUT AND OUTPUT FILES MAY NOT BE THE SAME	The specified input file and output file are located at the same disk address with identical file names. Specify a different output file name or touch S.F. Key '0 to specify a different output address, input address, or input file name.
INPUT AND PROGRAM/FORMS DISK MAY NOT BE THE SAME	The disk address specified for the input file and the EASYFORM system disk are the same. Re-enter a different input disk address.
INSUFFICIENT SPACE FOR A NEW FORM. MOUNT NEW PROGRAM/FORMS DISK. KEY RETURN (EXEC)?	<p>There is insufficient disk space available on the System Disk(ette) in use to create (save) another form. Either (1) mount a different System Disk(ette) copy and touch the RETURN key, or (2) touch the HALT/STEP key and depress S.F. Key '0 to abort the CREATE FORM program.</p> <p>Form files no longer needed should be scratched and the System Disk(ette) copied using the MOVE statement. See Appendix B*.</p>

Table A-1. Error Messages Applicable to EASYFORM III Prompts (cont'd)

ERROR MESSAGE	DESCRIPTION/RECOVERY
INSUFFICIENT SPACE ON DISK KEY RETURN (EXEC) TO RESUME?	The specified output disk has insufficient disk space available to contain the output file. Touch the RETURN key; a previous prompt reappears. There are several available recovery options: (1) specify a different output disk address, (2) mount a different output disk(ette), or (3) specify an output file name of an existing file which can be overwritten.
filename IS IN CATALOG KEY RETURN (EXEC) TO RESUME?	The specified output file is a cataloged file on the specified output disk(ette) when it was just specified as not being cataloged. Touch the RETURN key; a previous prompt reappears. Was the correct output disk(ette) mounted? Re-enter the output file information correctly.
filename IS NOT IN CATALOG KEY RETURN (EXEC) TO RESUME?	The specified output file is <u>not</u> a cataloged file on the specified output disk(ette) when it was just specified as being cataloged. Touch the RETURN key; a previous prompt reappears. Was the correct output disk(ette) mounted? Re-enter the output file information correctly.
INVALID -- KEY MUST BE 1 TO 30	Attempted to enter a key length value less than 1 or greater than 30. Re-enter the key length and touch RETURN.
KEY RETURN (EXEC) TO RESUME? CONVERSION ABORTED	The conversion operation was aborted. Touch the RETURN key to obtain the Activity menu.
KEY RETURN (EXEC) TO RESUME? SEARCH ABORTED	The search operation was aborted. Touch the RETURN key to obtain the Activity menu.

Table A-1. Error Messages Applicable to EASYFORM III Prompts (cont'd)

ERROR MESSAGE	DESCRIPTION/RECOVERY
<p>KEY RETURN (EXEC) TO RESUME? SEARCH COMPLETED DUPLICATE KEYS</p>	<p>The specified output file had been previously used to contain records and the key of one (or more) records from SELECT/SORT output is identical to one of the previously saved records in the output file. The record(s) containing duplicate keys were not written into the output file. Touch the RETURN key to obtain the Activity menu. The search might be retried using a different output file.</p>
<p>NAME DOES NOT CONFORM TO SPECIFICATIONS ____ F1__</p>	<p>Attempted to enter a data file name without "F1" in the fifth and sixth character positions. Re-enter the file name and touch RETURN.</p>
<p>OUTPUT FILE FULL -- DO YOU WANT TO PRINT (Y/N)</p>	<p>The specified output file is full and cannot contain additional records selected via the entered search mask. This error message appears only with optionally printed output. Enter Y to print the record which cannot be saved due to insufficient output file space. Enter N to continue without printing the record. The search continues after Y or N has been entered.</p>
<p>OUTPUT FILE FULL - KEY RETURN (EXEC) TO RESUME?</p>	<p>The specified output file contains insufficient disk space to contain all records which match the specified search mask. Touch the RETURN key; the search continues. The entire search operation might be reattempted using a larger output file.</p>
<p>PRINTER NOT READY</p>	<p>Indicates the printer is not ON and SELECTed. Ready the printer; printing will begin automatically.</p>

Table A-1. Error Messages Applicable to EASYFORM III Prompts (cont'd)

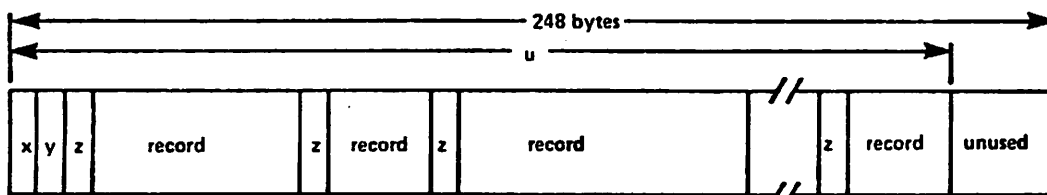
ERROR MESSAGE	DESCRIPTION/RECOVERY
RE-ENTER	Attempted to enter too many characters, a Y or N was not entered in reply to a YES/NO prompt, or (if ERR 29 or ERR X25 appeared) attempted to enter a nonnumeric character into a numeric field. Re-enter the requested value and touch RETURN.
RE-ENTER FILE NAME ACCORDING TO SPECIFICATIONS --- F1 --	See the error message "NAME DOES NOT CONFORM TO SPECIFICATIONS ---- F1 --" above.
RE-ENTER FORM #	Attempted to enter a form number less than 1 or greater than 99999. Re-enter the form number and touch RETURN.
STOP OPEN ERROR	The conversion operation was aborted and cannot proceed. Depress S.F. Key '0 to obtain the Activity menu and close the data file. Retry the attempted operation.
THERE IS NO PREPRINTED FORMAT KEY RETURN (EXEC) TO RESUME?	A preprint format for this form does not exist. Either touch the RETURN key to choose a different output format or depress S.F. Key '0 to obtain the Activity menu. The CREATE PREPRINT FORMAT program should be chosen to create a preprint format for this form. The previously attempted operation can then be retried.
* Refer to Appendix B in the EASYFORM III User Manual.	

APPENDIX B

THE TC FILE FORMAT

The "TC file format" for disk data file records is defined as follows:

1. Records are packed into a one-dimensional, alphanumeric array with four elements, each 62 bytes long, e.g., DIM A\$(4)62. Element boundaries are ignored; there are 248 contiguous bytes of storage available. With the CONVERT EASYFORM TO TC FORMAT program, each sector contains three 80-byte "images."
2. The array is saved into a single sector by using a DATASAVE DC or DATASAVE DA statement.
3. Within the 248 bytes of storage, three types of control bytes are used (see x, y, and z in the following diagram).



x = a one-byte hexadecimal code indicating whether the sector is or is not the last sector in the file; in particular, x = HEX(F0) denotes "is the last sector", x = HEX(00) denotes "not the last sector".

y = a one-byte hexadecimal value denoting "the number of used bytes plus one" in the array. For example, in the diagram, y is the hexadecimal equivalent of $u + 1$.

z = a one-byte hexadecimal value preceding each record to denote "the record length in bytes". For example, if the record contains 39 bytes, $z = \text{HEX}(27)$ since $(27)_{16} = (39)_{10}$.

record = one complete record with trailing spaces truncated, except in the first record; individual records do not overlap from one 248-byte array to the next. (Records should not exceed 128 bytes in files likely to undergo media conversion from Wang to 3740 diskettes using Wang's 3740 Diskette Compatibility Software.)

NOTE:

Following the sector containing x = HEX(F0), there must be a file END trailer record written by a DATASAVE DC END statement.

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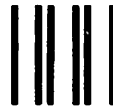
COMMENTS:

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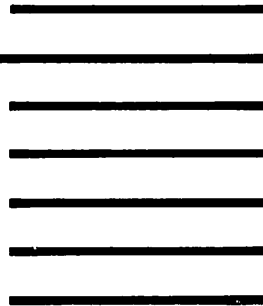


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