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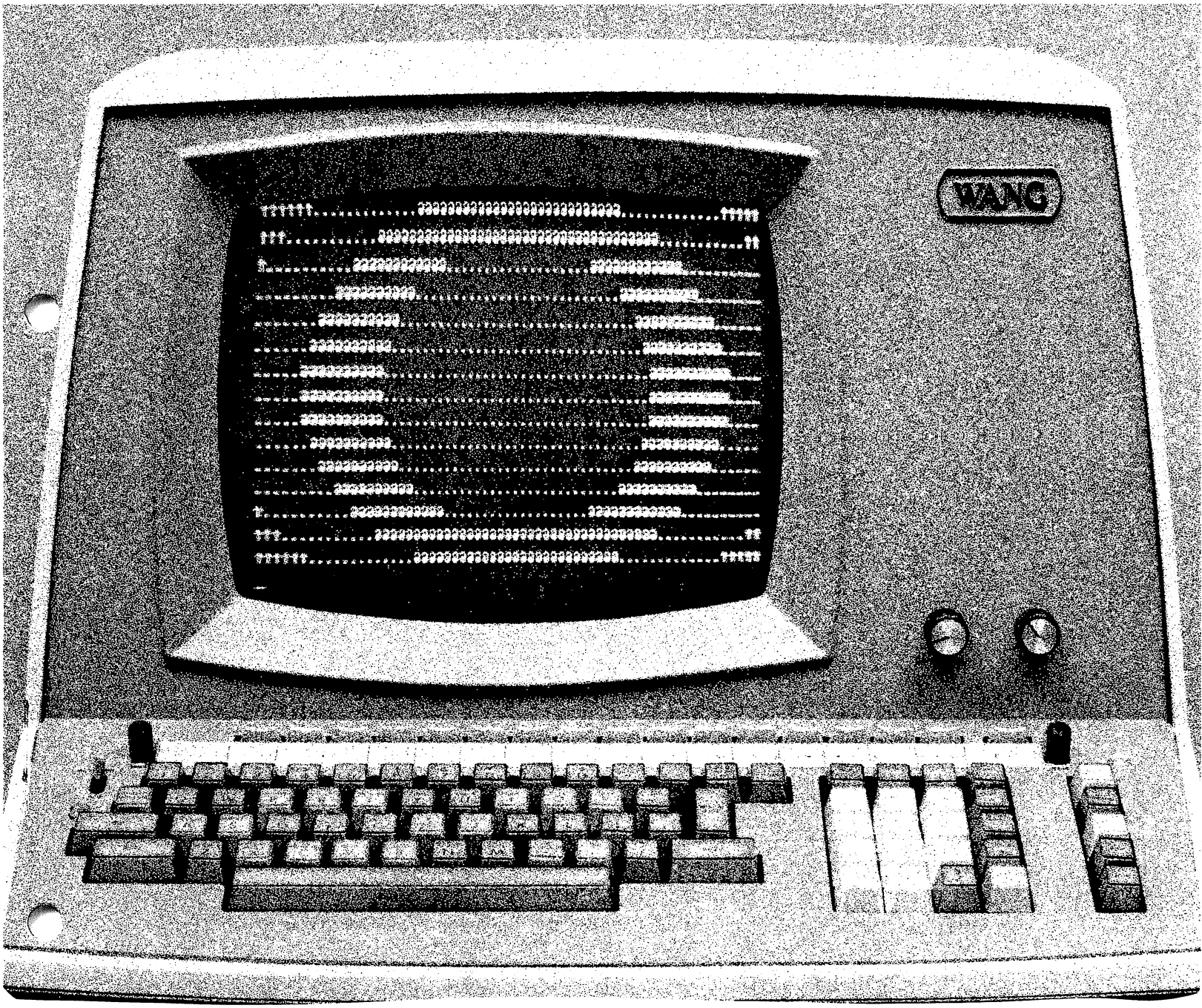
2234A/2244A CARD READER UTILITIES USER MANUAL (DISK VERSION)

SYSTEM 2200



2234A/2244A
CARD READER UTILITIES
USER MANUAL
(DISK VERSION)

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HOW TO USE THIS MANUAL

The Card Reader Utilities User Manual provides operating instructions for each of the four card reader utility programs. Also provided is a discussion of the theory and purpose behind each program. This manual assumes that the reader is familiar with the System 2200, as well as the 2234A or 2244A Card Reader. For information regarding card reader operations, refer to the 2234A/2244A Hopper-Feed Card Readers Reference Manual.

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CHAPTER 1 INTRODUCTION TO THE CARD READER UTILITIES

1.1 INTRODUCTION

The Model 2234A/2244A Card Reader Utility Package consists of four utility programs designed to serve a twofold purpose:

1. To provide stand-alone routines which support typical card reader applications.

2. To serve as extended programming examples for users who wish to write their own software.

The utilities facilitate the transferring of card images in Hollerith, binary, GEAC, and Wang formats to a tape or disk unit and/or an output printer or typewriter. All formatted printed output is designed for easy reading. For example, the Card Program List Utility provides automatic page numbering for quick reference.

Each utility provides programmed error messages displayed on the CRT, to eliminate time consuming error identification. Appendix A lists these errors and possible solutions for their rectification.

Appendix B includes a list of key variables and their definitions. Through them a user may slightly alter or modify programs to fit individual program requirements.

1.2 THE UTILITY PROGRAMS

Four stand-alone programs are included in the Card Reader Utility Package. Each individual program is accessed via Special Function Keys from the Program Menu, which is contained in the Start-Up module. When the Start-Up module is loaded and run, the Program Menu displays the name and Special Function Key of each utility program:

FN KEY	PROGRAM NAME
00	CARD IMAGE OUT
01	CARD IMAGE DUMP
02	CARD IMAGE PRINT
03	CARD PROGRAM LIST

1.3 REQUIRED CONFIGURATION

The minimum configuration required to run the Card Reader Utility programs (disk version) includes the following equipment:

- System 2200B, 2200S with Option 24, or 2200T (8K of memory)
- 2234A/2244A Card Reader
- Model 2270
- 2201/2221W/2231W

1.4 SYSTEM START-UP PROCEDURES

Before any of the utility programs can be accessed, it is necessary to load and run the starter program in order to enter the program disk address and the Program Menu. The procedure is as follows:

1. Mount the Card Reader Utilities program disk in a disk drive.

2. Key CLEAR; touch RETURN(EXEC).

3. Key LOAD DC $\left\{\begin{matrix}F\\R\\T\end{matrix}\right\}\left[\begin{matrix}\#n,\\/xxx,\end{matrix}\right]$ "START" and touch RETURN(EXEC).

4. Key RUN; touch RETURN(EXEC).

5. The following will be displayed:

   ENTER THE NUMBER OF THE PROGRAM DISK ADDRESS

   ?-/

1.	310	4.	B10
2.	320	5.	B20
3.	350	6.	360

   Enter the number corresponding to the drive in which the program disk is located; touch RETURN(EXEC).

6. The Program Menu will be displayed. Depress the Function Key corresponding to the program to be run and follow the operating instructions in the corresponding chapter.

1.5 FILE DESCRIPTION

A file is created with a header and trailer using the appropriate DATASAVE commands. However, all the card images are stored using the DATASAVE BA or the DATASAVE BT commands.

A block of card images consists of the maximum number of images (whole numbers) that can be stored in 1000 bytes. For example, with an 80 character image you can store 12 card images out. Each block contains 4 bytes at the

beginning for control. The first two are the block size and the next two are the record length (80 bytes). The block is stored in memory until it is full or until an end of data card is reached. The block is then written out on the appropriate device. Blocks may be stored one right after another.

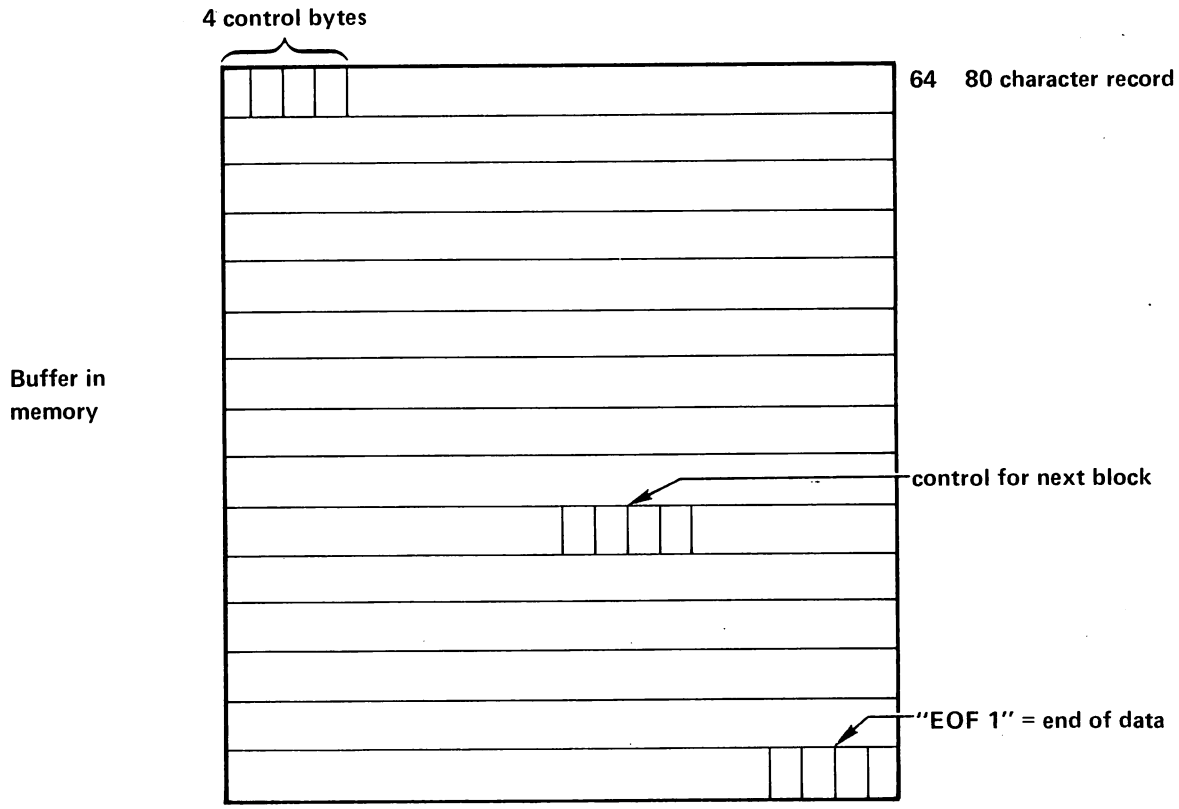

Figure 1-1. File Format

CHAPTER 2 CARD IMAGE OUT (FN'00)

2.1 INTRODUCTION

This program reads Hollerith, program, or binary formats into memory. From memory the card images are transferred to an output buffer in blocks of 1000 or less bytes. The output buffer is then written onto a disk platter (addresses 310, 320, 350, B10, B20, or 360) or a tape cassette (addresses 10A, 10B, or 10C).

The program expects an end-of-file card which contains "&&" (2 ampersands) as the first and second characters of the card. This card is not transferred to the output device.

2.2 THEORY OF OPERATION

The Card Image Out Program consists of four (4) modules:

MODULE 1 - CIOT010A

- initializes common variables and sets default values for output options.

MODULE 2 - CIOT020A

- checks the program disk to see if a system defaults data file (named CIOT) has been established. If it has been established, the system default values are loaded from it and override those set in Module 1.

- displays default values and gives the user the option of modifying them. If the default file has never been established or the system defaults have been changed, the user is given the option of saving them.

- CIOT is a cataloged data file with a length of four (4) sectors.

MODULE 3 - CIOT030A

- is processed only if tape was chosen as output device.

- displays an appropriate mount command and processes the file.

MODULE 4 - CIOT040A

- is processed only if disk was chosen as output device.

- displays an appropriate mount command and processes the file.

Upon completion of either of the two preceding modules, the user can process another file, in which case CIOT020A is overlayed and parameters of the last file processed are displayed. The user also has the option of returning to step 5 of the Start-Up Procedures.

NOTES:

1. Special Function Key 15 will return the user to CIOT020A at any time when processing a file. This may be useful if an error is detected during processing and parameters must be changed.

2. If the continue column is marked on any program card, the record length must be greater than 37 but must not exceed 80.

3. If system defaults are to be saved, the program disk must not be protected.

4. If the user writes card images onto disk, then writes card images onto tape without reloading the program, the tape length displayed will be a strange number (i.e., 511.5 ft). Disregard this number and enter the correct value.

2.3 OPERATING INSTRUCTIONS

CARD IMAGE OUT

	DISPLAY	INSTRUCTIONS
1.	ARE THE PARAMETERS O.K.? Y/N ?_	1. If yes, key Y, touch RETURN (EXEC), and proceed to step 5. If no, key N, touch RETURN(EXEC), and proceed to next step.
	CARD IMAGE OUT UTILITY The parameters displayed are: 1. OUTPUT 4. FILE NAME 2. OUTPUT ADDRESS 5. RECORD LENGTH 3. CARD FORMAT 6. TAPE LENGTH	
2.	ENTER THE NUMBER OF THE ITEM TO BE CHANGED. (0 = END) ?_/ Parameters are displayed as above.	2. Enter the number of the item to be changed, touch RETURN(EXEC), and proceed to step 3. When all items are correct, key 0, touch RETURN(EXEC), and proceed to step 4.
3.	Depending on the item number chosen, one of the following will be displayed: 1. OUTPUT: 1 = TAPE 2 = DISK 2. OUTPUT ADDRESS: If disk: If tape: 1. 310 4. B10 7. 10A 2. 320 5. B20 8. 10B 3. 350 6. 360 9. 10C 3. CARD FORMAT: 1 = HOLLERITH 2 = PROGRAM 3 = BINARY 4. FILE NAME:-------- 5. RECORD LENGTH --- 6. TAPE LENGTH: 1=75 FT 2 = 150 FT 3 = 175 FT	3. Key in parameter choice, touch RETURN(EXEC), and return to step 2. [Everytime a parameter is changed, it will be reflected on the display.] File name (maximum-8 characters) and record length must be keyed in by operator. Displayed only if tape was chosen as output.
4.	DO YOU WISH TO SAVE PARAMETERS AS SYSTEM DEFAULTS? Y/N ?_	4. If yes, key Y, and touch RETURN(EXEC). If no, key N, and touch RETURN(EXEC).

	NOTE: The program disk must not be protected to save system defaults.
5. One of the following mount requests will be displayed, depending on output device: MOUNT DATA TAPE IN TAPE UNIT nnn KEY RETURN(EXEC) TO RESUME?_ or MOUNT DATA DISK IN DISK UNIT nnn KEY RETURN(EXEC) TO RESUME?_	5. Mount data tape or data disk in unit nnn, and touch RETURN (EXEC). (nnn = output address.)
	NOTE: If output medium is full, step 6 appears; if not, execution continues at step 7 (if tape is output) or step 8 (if disk is output).
6. OUTPUT MEDIUM IS FULL-REMOVE MEDIUM ENTER EXEC TO START ANOTHER FILE OR 1 TO HALT ?_	6. Enter 1, touch RETURN(EXEC), and go to end of program. Enter RETURN(EXEC) and return to step 1 to process another file.
7. DOES THIS TAPE ALREADY HAVE CARD IMAGE FILES (Y OR N) ?_	7. (This step will be displayed only if tape was chosen as output.) If yes, key Y, and touch RETURN(EXEC). If no, key N, and touch RETURN(EXEC).
8. GET CARD READER READY KEY RETURN(EXEC) TO RESUME?_ CARDS READ=n BLOCKS WRITTEN=m	8. Activate the card reader, set the back panel controls to the appropriate positions, and touch RETURN(EXEC). The cards will be read onto tape (or disk). (n = number of cards read; m = number of blocks written.)
9. DO YOU WISH TO START ANOTHER JOB (Y OR N) ?_	9. If yes, key Y, touch RETURN (EXEC), and return to step 1. If no, key N, touch RETURN (EXEC), and return to step 5 of the System Start-Up Procedures.

CHAPTER 3 CARD IMAGE DUMP (FN'01)

3.1 INTRODUCTION

The program either reads cards in Hollerith, program, or binary formats or card images from a tape or disk created by the CIMAGOUT program.

The output produced by this program contains a line number, the record length, and the card image. If the card or card image is binary, a second line is printed. A record length exceeding 160 characters is illegal.

Example of output:

LINE NO.	RECORD LENGTH	CONTENTS OF CARD
27	80	810 E9$="LEADING EDGE READ CHECK"

The program expects an end-of-file card which contains "&&" (2 ampersands) as the first and second characters of the card or an EOF1 as the four control bytes of a tape or disk block.

For a description of file construction, refer to Section 1.5.

3.2 THEORY OF OPERATION

The Card Image Dump program consists of three (3) modules:

MODULE 1 - CIDP010A

- sets default values and requests a date.

MODULE 2 - CIDP020A

- displays system default values set either by CIDP010A or by recalling them automatically from default file CIDP (if established). If CIDP exists, values set in CIDP010A are overwritten.

- displays all parameters and gives the user a choice of accepting or modifying them.

- gives the user the option of saving values as system defaults if CIDP has never been established or if parameters have been changed.

- CIDP is a cataloged data file with a length of four (4) sectors.

MODULE 3 - CIDP030A

- displays appropriate mount messages and processes the file or the card deck.

- upon completion of this module, the user may return to step 5 of the Start-Up Procedures or process another file.

NOTES:

1. Special Function Key 15 will return the user to CIDP020A at any time during processing. When a file is finished being processed, the user may start another job or return to the Menu Program.

2. If a program card file is read from tape or disk and dumped, spacing will be triple and print line count will be incorrect. This occurs because the card reader issues an automatic carriage return/line feed at the end of each read program card. When read onto tape or disk with CIOT030A, the HEX(0D) is included, thus producing one extra line feed per processed card.

3. If a tape or a disk file was created from program cards and a record length greater than 37 (continue column marked) was read in CIOT030A and not expected, those additional columns are lost. The solution is to reprocess CIOT030A with a longer record length. Refer to note 2 in Card Image Out Utility.

3.3 OPERATING INSTRUCTIONS

CARD IMAGE DUMP

	DISPLAY	INSTRUCTIONS
1.	ENTER TODAY'S DATE AS MM/DD/YY ?--------	1. Enter the date in the appropriate format, and touch RETURN(EXEC).
2.	ARE THE PARAMETERS O.K.? Y/N ?- CARD IMAGE DUMP UTILITY The parameters displayed are: 1. INPUT 4. FILE NAME 2. OUTPUT ADDRESS 5. INPUT ADDRESS 3. TITLE 6. CARD TYPE	2. If yes, key Y, touch RETURN (EXEC), and proceed to step 6. If no, key N, touch RETURN (EXEC), and proceed to next step.
3.	ENTER THE NUMBER OF THE ITEM TO BE CHANGED (0 = END) ?-/	3. Enter the number of the item to be changed, and touch RETURN (EXEC). When all necessary changes have been made, key 0, touch RETURN(EXEC), and proceed to step 5.
4.	Depending on the item number chosen, one of the following will be displayed: 1. INPUT: 1=CARD 2=TAPE 3=DISK 2. OUTPUT ADDRESS: 1=ADDRESS 215 2=ADDRESS 211 3. ENTER REPORT TITLE ---------- 4. ENTER FILE NAME -------- 5. INPUT ADDRESS: If disk: If tape: 1. 310 4. B10 7. 10A 2. 320 5. B20 8. 10B 3. 350 6. 360 9. 10C	4. Key in parameter choice, touch RETURN(EXEC), and return to step 3. [Every time a parameter is changed, it will be reflected on the display.] Report title (maximum-20 characters) and file name (maximum-8 characters) must be keyed in by operator. File name is not displayed if card was chosen as input. Input address is not displayed if card was chosen as input.

6. CARD TYPE:

   1 = HOLLERITH
   2 = PROGRAM
   3 = BINARY

Card type is not displayed if tape or if disk was chosen as input.

5. DO YOU WISH TO SAVE THESE PARAMETERS AS SYSTEM DEFAULTS? Y/N

5. If yes, key Y, and touch RETURN(EXEC). If no, key N, and touch RETURN(EXEC).

> NOTE:
>
> The program disk must not be protected to save system defaults.

6. MOUNT PAPER IN PRINTER
   KEY RETURN(EXEC) TO RESUME
   ?_

6. Activate and select the printer. Mount a sufficient amount of paper and touch RETURN(EXEC). (Be sure paper is of a sufficient width.)

7. One of the following requests will be displayed, depending on input device:

   GET CARD READER READY
   KEY RETURN(EXEC) TO RESUME?_

   or

   MOUNT DATA TAPE IN UNIT nnn
   KEY RETURN(EXEC) TO RESUME?_

   or

   MOUNT DATA DISK IN DISK UNIT nnn
   KEY RETURN(EXEC) TO RESUME?_

   CARD IMAGE DUMP

7. Perform the action indicated. (nnn=input address.) The cards or the file will be processed.

8. DO YOU WISH TO DO ANOTHER JOB? Y/N

8. If yes, key Y, touch RETURN (EXEC), and return to step 2. If no, key N, touch RETURN (EXEC), and return to step 5 of System Start-Up Procedures.

CHAPTER 4 CARD IMAGE PRINT (FN'02)

4.1 INTRODUCTION

This program reads Hollerith or program cards from a card reader or card images from a tape or disk. The image on tape or disk must have been created by the CIMAGOUT program or in a similar manner.

The user defines the fields he wishes to be printed. For each field the program must be given:

1. The column heading (space allowed)
2. The starting source position
3. The field length
4. The print starting position
5. Whether or not to sum a field

Since the program works on card images, the following restrictions are made:

1. The number of fields may be any integer from 1 to 40.
2. The source start position may be any integer from 1 to 80 (or record length).
3. The field size may not exceed 80 characters (or record length).
4. The sum of the source starting position and field size must not exceed 81 (or the record size stored on tape or disk).

The program keeps track of the print position (when entering) to prevent the overlapping of fields. A minimum print position is calculated and displayed. The input is checked against this figure and no value less than the calculated minimum is allowed. The field size plus print position must not exceed the entered line length.

If you choose to sum a field, you must take caution that the field is numeric. Line sequencing may be printed on either the right or left margin. Line sequencing is a sequential count of each card image processed by the program.

The program checks for either "&&" (2 ampersands) as the first and second bytes of a card or an EOF1 as the four control bytes of a tape or disk block.

For tape and disk file formatting, refer to section 1.5.

4.2 THEORY OF OPERATION

The Card Image Print Program consists of four (4) modules:

MODULE 1 - CIPT010A

- initializes default variables and requests a date.

- asks the user to recall a format file (if desired). If so desired, the name of the file is requested (there are 20 allowable files: CIPT01 → CIPT20) and the validity of its presence on the program disk is checked with DEFFN'229. If present, system parameters from it are loaded and default values previously set are overlayed. Also, all field definition parameters are loaded and set.

MODULE 2 - CIPT020A

- displays system default parameters, whether original or loaded from a format file and gives the user the opportunity to revise them. If a different format file is entered in this module, the file is immediately checked for its existence and loaded (if present). All previous default values are overlayed and the new ones displayed.

MODULE 3 - CIPT030A

- gives the user the opportunity to enter, review, or accept field definitions.

- Field Definitions:

  1. If a format file has not been recalled, field definitions must be entered.

  2. If a format file has been recalled, any choice may be initiated (enter, review, or accept).

  3. If enter is chosen, all current field definition data present (if any) is initialized to zero. First the number of fields to be defined is input; then the title, source position, size, print position, and whether or not to sum the field are input. Definitions for each field are requested until all fields are defined.

  4. If review is chosen, the display reads: "ENTER FIELD NO. TO BE REVIEWED (0 TO END) OR EXEC FOR HARDCOPY." To review a specific field, enter the field number, RETURN(EXEC), and the parameters for that field are displayed with requests to input data as in the ENTER field definitions. When the requested data is entered and acceptable as displayed, simply touch RETURN(EXEC) and the request for entering the next piece of data will appear. If a portion of data needs to be modified, key in the correct value when it is requested. When finished reviewing a field, the

display mentioned at the beginning of this step will be redisplayed. Key in the next field number to be reviewed, touch RETURN(EXEC).

NOTE:
When field sizes and print positions are modified (when reviewing), the effect on other adjacent fields is not checked or modified. The user must be aware of the effects on other fields and the final report layout as to length of fields and print positions.

5. When the field definition has been accepted, the option to save this data in a format file will be offered. If saved, a format file name must be entered by the operator. (There are 20 acceptable format file names: CIPT01 → CIPT20.) The system checks for its existence (see step 18 in Operating Instructions), saves all parameters defined in CIPT020A, and saves all field definition data on the program disk. Upon entering CIPT010A the next time, this format file may be recalled with the same parameters used again or another format file may be recalled.

MODULE 4 - CIPT040A

- processes file and generates report.
- when file is completed, the user may return to step 5 of the Start-up Procedures or back to CIPT020A to process another file.

NOTES:

1. Depress Special Function Key 15 to return to CIPT020A to edit parameters.
2. An extra carriage return/line feed is produced after each line if printing is being produced from a tape or a disk program card image; this does not occur if reading cards directly to the printer.

4.3 OPERATING INSTRUCTIONS

CARD IMAGE PRINT

	DISPLAY		INSTRUCTIONS
1.	ENTER TODAY'S DATE AS MM/DD/YY ?_--------	1.	Enter the date in the appropriate format, and touch RETURN(EXEC).
2.	DO YOU WISH TO RECALL A FORMAT FILE? (Y or N) ?_	2.	If yes, key Y, and touch RETURN(EXEC). If no, Key N, touch RETURN(EXEC), and go to step 4.

3. ENTER THE NAME OF THE FORMAT FILE
?------

3. Enter the name of the format file, and touch RETURN(EXEC). The values of the file will be loaded. (Format File Name: CIPT01 to CIPT20.) If the system does not locate the specified format file name, step 2 will be redisplayed.

4. ARE THE PARAMETERS O.K.? Y/N
?-

CARD IMAGE PRINT UTILITY

The parameters displayed are:

1. INPUT TYPE	7. LINE SEQUENCING?
2. PRINT ADDRESS	8. SEQUENCE MARGIN
3. LINES/PAGE	9. FORMAT FILE
4. LINE LENGTH	10. CARD FORMAT
	or
5. LINE SPACING	10. INPUT ADDRESS
6. TITLE	11. FILE NAME

4. If yes, key Y, touch RETURN(EXEC), and proceed to step 8. If no, key N, touch RETURN(EXEC), and proceed to the next step.

5. ENTER THE NUMBER OF THE ITEM TO BE CHANGED (0 = END)
?--/

Parameters are displayed as above.

5. Enter the number of the item to be changed, and touch RETURN (EXEC). When all necessary changes have been made, key 0, touch RETURN(EXEC), and proceed to step 7.

6. Depending on the item number chosen, one of the following will be displayed:

1. INPUT TYPE 1 = CARD 2=TAPE 3=DISK

2. PRINT ADDRESSES 1=ADDRESS 215 2=ADDRESS 211

3. LINES/PAGE_ _(Max = 60)

4. LINE LENGTH ---/

5. LINE SPACING (1 OR 2)

6. TITLE----------

7. LINE SEQUENCING (Y OR N)

6. Key in parameter choice, touch RETURN(EXEC), and return to step 5. [Every time a parameter is changed, it will be reflected on the display.]

Lines/page and line length must be keyed in by the operator.

Report title must be keyed in by operator. (Maximum report title - 20 characters.)

If N is entered for line sequencing, you cannot enter a sequence margin.

8. SEQUENCE MARGIN (L OR R)

L = left margin sequence
R = right margin sequence

9. FORMAT FILE ------

Format file (if desired) must be keyed in by operator (CIPT01 → CIPT20).

10. INPUT ADDRESS

If disk:

1. 310
2. 320
3. 350
4. B10
5. B20
6. 360
7. 10A
8. 10B
9. 10C

If tape:

or

If using tape or disk as input, this step will be displayed.

10. CARD FORMAT 1=HOLLERITH 2=PROGRAM

If using cards as input, this step will be displayed.

11. FILE NAME --------

File name (maximum-8 characters) must be keyed in by the operator if using tape or disk as input.

7. DO YOU WISH TO: 1-ENTER 2-REVIEW OR 3-ACCEPT FIELD DEFINITIONS?

7. If you wish to enter field definitions, key 1, touch RETURN(EXEC), and follow instructions in steps 8 through 14.

If you wish to review field definitions, key 2, touch RETURN(EXEC), and follow instructions in steps 15 through 20.

If you wish to accept field definitions, key 3, touch RETURN(EXEC), and follow instructions as indicated below:

If a format file was recalled and no changes were made to it follow steps 23 through 25.

If a format file was recalled and changes were made to it or a format file was not recalled follow steps 21 through 25.

8.	Appropriate mount request displayed (depending on input device specified as parameter): MOUNT DATA TAPE IN TAPE UNIT nnn KEY RETURN(EXEC) TO RESUME?_ or MOUNT DATA DISK IN DISK UNIT nnn KEY RETURN(EXEC) TO RESUME?_	8. Mount appropriate input device in unit nnn (nnn = input address), and touch RETURN (EXEC). If cards were selected as the input device, this step will not be displayed. Proceed directly to step 9.
9.	ENTER THE NUMBER OF FIELDS ?-/	9. Enter the number of fields on the cards or card images to be printed, and touch RETURN(EXEC).
10.	FIELD DEFINITION ENTER COLUMN TITLE OR KEY EXEC The CRT will display the following: FIELD NO. TITLE SOURCE SIZE PRINT SUM Each time a field definition is entered, it will be added to the above display.	10. Enter column title, and touch RETURN(EXEC). If no title is desired, touch RETURN(EXEC).
11.	FIELD DEFINITION ENTER SOURCE POSITION FOR FIELD XXX ?--	11. Enter the source position, and touch RETURN(EXEC). [XXX = number of the field being entered.]
12.	FIELD DEFINITION ENTER SIZE OF FIELD XXX ?--	12. Enter the length of the field, and touch RETURN(EXEC).
13.	MINIMUM PRINT POSITION AVAILABLE = ccc ENTER PRINT POSITION FOR FIELD XXX ?--	13. Enter the print position ≥ ccc, and touch RETURN(EXEC).
14.	MINIMUM PRINT POSITION AVAILABLE = ccc DO YOU WISH TO SUM ON THIS COLUMN? (Y OR N) ?-	14. If yes, key Y, and touch RETURN(EXEC) If no, key N, and touch RETURN(EXEC).

NOTE:

Steps 10 to 14 will be repeated for the number of fields specified in step 9. When all definitions have been entered, step 7 will be displayed on the CRT. You should then REVIEW or ACCEPT field definitions.

15.	Appropriate mount request displayed (depending on input device specified as parameter): MOUNT DATA TAPE IN TAPE UNIT nnn KEY RETURN(EXEC) TO RESUME?_ or MOUNT DATA DISK IN DISK UNIT nnn KEY RETURN(EXEC) TO RESUME?_	15. Mount appropriate input device in unit nnn (nnn = input address), and touch RETURN (EXEC). If cards were selected as the input device, this step will not be displayed. Proceed directly to step 16.
16.	EDIT/REVIEW ENTER NO. OF FIELD TO BE REVIEWED (0 = END) OR EXEC FOR HARDCOPY	16. Enter the number of the field to be reviewed, and touch RETURN(EXEC). The definitions for the specified field will be displayed (steps 10 to 14). You can change a definition or simply touch RETURN(EXEC) if it is correct. After the entire field has been reviewed, step 16 will be redisplayed. To produce a hardcopy of field definitions, activate the printer and touch RETURN(EXEC). After printing, step 7 will be displayed. When you are finished reviewing fields, key 0, touch RETURN(EXEC), and proceed to step 17.
17.	EDIT/REVIEW DO YOU WISH TO SAVE THESE PARAMETERS AS SYSTEM DEFAULTS? Y/N ?_	17. If yes, key Y, touch RETURN (EXEC), and go to step 18. If no, key N, touch RETURN(EXEC), and proceed to step 19.
18.	ENTER FORMAT FILE NAME ------	18. Enter the format file name (CIPT01 to CIPT20), and touch RETURN(EXEC). The system will check to see if this file already exists. If it does, you have the option of either rewriting the file name by keying 1 and touching RETURN(EXEC) or renaming the file by touching RETURN(EXEC). If tape or disk were specified as input type, proceed to step 20. If card is input, go to next step.

19.	GET CARD READER READY KEY RETURN(EXEC) TO RESUME ?_	19. Activate the card reader, set the back panel controls to the appropriate positions, and touch RETURN(EXEC).
20.	MOUNT PAPER IN OUTPUT DEVICE KEY RETURN(EXEC) TO RESUME ?_ GENERATING REPORT	20. Activate the output device, mount a sufficient amount of paper, and touch RETURN(EXEC). (Be sure paper is of a sufficient width.) After the report is generated, proceed to step 25.
21.	DO YOU WISH TO SAVE THESE PARAMETERS AS SYSTEM DEFAULTS? Y/N ?_	21. If yes, key Y, and touch RETURN(EXEC). If no, key N, touch RETURN(EXEC), and proceed to step 23.
22.	ENTER FORMAT FILE NAME ------	22. Enter the name of the format file (CIPT01→CIPT20), and touch RETURN(EXEC). The system will check to see if this file already exists. If it does, you have the option of either rewriting the file name by keying 1 and touching RETURN(EXEC) or renaming the file by touching RETURN(EXEC).
23.	One of the following will be displayed depending on the input device specified as parameter: MOUNT DATA TAPE IN TAPE UNIT nnn KEY RETURN(EXEC) TO RESUME ?_ or MOUNT DATA DISK IN DISK UNIT nnn KEY RETURN(EXEC) TO RESUME ?_ or GET CARD READER READY KEY RETURN(EXEC) TO RESUME ?_	23. Perform the appropriate request, touch RETURN(EXEC). (nnn = input address.)
24.	MOUNT PAPER IN OUTPUT DEVICE KEY RETURN(EXEC) TO RESUME ?_	24. Activate the output device, mount a sufficient amount of paper, and touch RETURN(EXEC).

25. DO YOU WISH TO DO ANOTHER JOB (Y OR N)?	25. If yes, key Y, and touch RETURN(EXEC). Return to step 4. If no, key N, touch RETURN(EXEC), and return to step 5 of System Start-Up Procedures.

CHAPTER 5 CARD PROGRAM LIST (FN'03)

5.1 INTRODUCTION

This program lists out Hollerith or GEAC/Wang cards with automatic page control on a high speed printer or selectric typewriter. To terminate this program (under program control), an E must be placed in column 80 on the final card of a Hollerith deck or an END verb on the final card of a GEAC/Wang deck.

5.2 THEORY OF OPERATION

The Card Program List program consists of three (3) modules:

MODULE 1 - CPLT010A

- initializes default variables and requests a date.

MODULE 2 - CPLT020A

- searches disk for default file CPLT and, if present, overlays values set in CPLT010A.
- displays default values and, if modified, allows user to resave values in CPLT.
- CPLT is a cataloged data file with a length of three (3) sectors.

MODULE 3 - CPLT030A

- displays appropriate mount message and processes card program deck from card reader.
- upon completion, the user may return to CPLT020A or to step 5 of the Start-Up Procedures.

NOTES:

1. Special Function Key 15 returns the user to CPLT020A at any time during the processing of CPLT030A.

2. If program cards are used, line spacing defaults to 2 and cannot be modified. This is due to the extra carriage return/line feed input with every card from the card reader.

3. In this program, the last card of a GEAC/Wang deck must consist of an END verb and the last card of a Hollerith deck must have an E in column 80.

5.3 OPERATING INSTRUCTIONS

CARD PROGRAM LIST

	DISPLAY		INSTRUCTIONS
1.	ENTER TODAY'S DATE AS MM/DD/YY ?--------	1.	Enter the date in the appropriate format, and touch RETURN(EXEC).
2.	ARE THE PARAMETERS O.K.? Y/N ?- CARD PROGRAM LIST UTILITY The parameters displayed are: 1. CARD FORMAT 2. OUTPUT ADDRESS 3. LINES PER PAGE 4. SPACING	2.	If yes, key Y, touch RETURN(EXEC), and proceed to step 6. If no, key N, touch RETURN(EXEC), and proceed to next step.
3.	ENTER THE NUMBER OF THE ITEM TO BE CHANGED (0 = END) ?-/	3.	Enter the number of the item to be changed, and touch RETURN(EXEC). When all necessary changes have been made, key 0, touch RETURN (EXEC), and proceed to step 5.
4.	Depending on the item number chosen, one of the following will be displayed: 1. CARD FORMAT: 1 = HOLLERITH 2 = GEAC or WANG 2. OUTPUT ADDRESS: 1 = ADDRESS 215 2 = ADDRESS 211	4.	Key in parameter choice, touch RETURN(EXEC), and return to step 3. [Every time a parameter is changed, it will be reflected on the display.]

3. LINES PER PAGE:

   (max = 60)

4. SPACING: 1 = 1 2 = 2

The number of lines must be entered by the operator.

5. DO YOU WISH TO SAVE THESE PARAMETERS AS SYSTEM DEFAULTS?
   Y/N
   ?-

5. If yes, key Y, and touch RETURN (EXEC). If no, key N, and touch RETURN(EXEC).

> NOTE:
>
> The program disk must not be protected to save system defaults.

6. MOUNT PAPER IN OUTPUT DEVICE
   KEY RETURN(EXEC) TO RESUME
   ?-/

6. Activate the output device, mount a sufficient amount of paper, touch RETURN(EXEC). (Be sure paper is of a sufficient width.)

7. GET CARD READER READY
   KEY RETURN(EXEC) TO RESUME
   ?-/

7. Activate the card reader, set the back panel controls to the appropriate positions, and touch RETURN(EXEC).

8. DO YOU WISH TO DO ANOTHER JOB?
   Y/N

8. If yes, key Y, touch RETURN (EXEC), and return to step 2. If no, key N, touch RETURN (EXEC), and return to step 5 of System Start-Up Procedures.

APPENDIX A

ERROR MESSAGES

1.	INVALID REENTER	Indicates that the alphanumeric entry does not fulfill the requirements for the particular prompt. Enter the appropriate data and continue operation.
2.	LEADING EDGE READ CHECK	Indicates that the card is torn on the leading edge or contains punches or marks before the first data column. Replace the bad card and depress the card reader RESET button to restart the reader.
3.	PICK CHECK	Indicates that a card has failed to reach the read station during a read operation. Inspect the cards in the upper hopper for excessive leading edge damage, torn webs, or cards stapled together. Remove faulty cards. For stapled cards, remove the staple, straighten the card, and reinsert. If no faulty cards can be found, check for excessive warpage in the card deck (in excess of one inch), and/or ink glaze buildup on the picker face. If necessary, clean the picker face with denatured alcohol. When corrective action has been taken, restart the unit with the card reader RESET button.
4.	HOPPER EMPTY	Indicates that the hopper is empty, a normal operational occurrence. Refill the hopper and restart the card reader with RESET.
5.	STACKER FULL	Indicates that the output stacker is full. Empty the stacker and restart the card reader with RESET.
6.	STACK CHECK	Indicates that the last card read has not been properly seated in the output stacker. Check the card and track to be sure it is clear, and check the stacker for a badly warped or mutilated card. Clean and stack the card manually. Depress the card reader RESET button to restart the reader.
7.	READER NOT READY	Indicates that remote operation was initialized before the card reader RESET light illuminated. Depress the RESET button and wait for the green light to illuminate.
8.	SHORT READ	Indicates that the data received was less than expected, a short card, a jam, or a special card with less than 80 columns, or the card reader was not sufficiently warmed up.

9.	READ ALERT	Indicates that a photoelectric sensor has failed or that the read head is dirty. Refer to the 2234A/2244A Reference Manual for details concerning the cleaning of the read head. To continue, depress the RESET button.
10.	FILE NAME ALREADY EXISTS	Indicates that the file name specified is a duplicate. Enter another file name.
11.	FILE NOT FOUND	Indicates that the file selected does not exist on the mounted media.
12.	OUTPUT MEDIUM FULL- REMOVE MEDIUM ENTER EXEC TO START ANOTHER FILE OR 1 TO HALT	Indicates that the output medium is full. Either enter 1, RETURN(EXEC) to end the program or touch RETURN(EXEC) to return to the beginning of the program.

APPENDIX B

KEY VARIABLES

Listed below are the key variables and their definitions for the utility programs. Through them a user may slightly alter or modify programs to fit individual program requirements.

CARD IMAGE OUT

A$()	=	card input buffer
B$()	=	write buffer
C	=	number of cards read in
C2	=	record length
I2	=	output address
L	=	tape length
N$	=	file name
O	=	output device type
T	=	card format
T2$	=	card format name

CARD IMAGE DUMP

A2$()	=	256 byte read buffer
I2	=	input address
N$	=	file name
O	=	input device type
O1	=	printer address
T	=	card format
T2	=	tape/disk block size
T$	=	report title

CARD IMAGE PRINT

A2$()	=	disk/tape read buffer
C	=	input device type
F	=	number of fields
F()	=	field size
I2	=	input address
I2$	=	input address display
N$	=	file name
O	=	printer address
O$	=	input type
O$()	=	output work buffer
P()	=	print start position
S()	=	source start position
T	=	card format
T2$	=	card format name

CARD PROGRAM LIST

A$()	=	80 character read buffer
A1$()	=	160 character read buffer
L1	=	lines per page
O	=	output device
S	=	spacing
T	=	card format
T2$	=	card format name

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