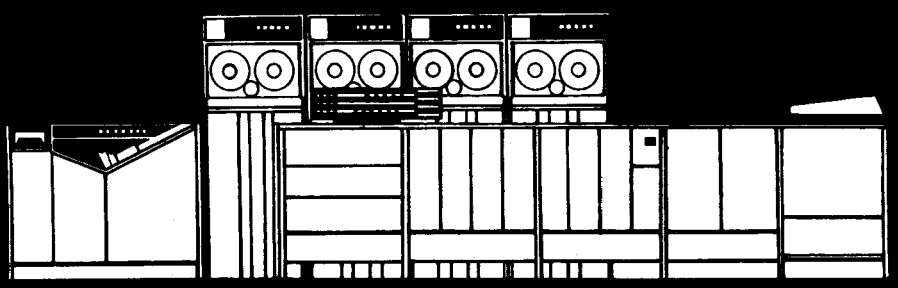
STUDY GUIDE:

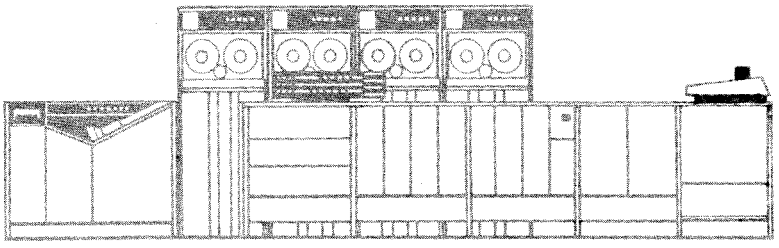
EASYTAB SYSTEM



HONEYWELL ELECTRONIC DATA PROCESSING

STUDY GUIDE:

EASYTAB SYSTEM



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PREFACE

The purpose of this study guide is to illustrate some practical applications for the utility programs provided with the Easytab system. The options and functions available with each program are presented by utilizing them in one or more examples. Each example includes a brief description of the application, the record layouts of the files involved, the preparation required, the keypunching of the parameter card(s), and the suggested computer setup for run execution.

A separate section is devoted to each of the utility programs. The concluding section contains a payroll application which was transferred from a tabulating environment to the Series 200 computer via the utilization of several of these Easytab programs plus three individually written COBOL programs. For those readers not familiar with COBOL, a companion set of publications entitled Study Guide: COBOL Programming (Order No. 259) is recommended. Sections I, II, and III of this set are the minimum prerequisites for the understanding of this manual. It is further suggested to all readers that they reference the Honeywell Software Manual Easytab Utility Programs, File Number 206, when adapting these programs to their own applications.

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SECTION I

THE EASYTAB SYSTEM

INTRODUCTION

The Easytab System consists of a series of utility routines which perform functions similar to those of basic tabulating equipment. Together with the COBOL Language programming system, these routines enable the user to transfer any tabulating process to a Series 200 computer.

As mentioned in the set of publications entitled Study Guide: COBOL Programming, Order No. 259, each data processing application destined for transfer to the Series 200 computer must be studied in order to determine which segments can be handled by these precoded routines and which segments might best be individually coded in the COBOL language. In general, when the process consists of some basic unit-record function such as sorting, merging, listing, or reproducing, the same results can very likely be accomplished on the Series 200 computer by merely punching a card, called a director or parameter card which provides basic information concerning the particular job, and executing the appropriate routine. Table 1-1 indicates the utility routines provided, the basic functions performed by them, and the tabulating equipment which they replace.

Table 1-1. Easytab Utility Program Chart

THESE UTILITY PROGRAMS — PERFORM — THESE FUNCTIONS — AND REPLACE — THIS EQUIPMENT		
Sort B	Sorting	Sorter
Merge B	Normal merging, match-merging, selecting of unmatched primary or secondary cards	Collator
Total B	Listing or tabulating of cards	Tabulator
Select B	Selection of cards according to the contents of one or more fields, their location within a control group, or by card count	Collator, Sorter
PERIO B	Conversion of punched cards to magnetic tape, magnetic tape to punched cards, magnetic tape to printer	No equivalent
Reproduce B	Reproducing cards, emitting information, card numbering	Reproducing punch
Alter B	Filing cards into, pulling cards from, or replacing cards within a card file	Manual

USE OF THE UTILITY PACKAGES

In determining whether the Easytab utility routines offer a solution, and in what manner they can best be utilized in a particular application, several questions must be answered:

1. Does any single utility routine perform the processing required? To discover this, you must first choose the utility routine which seems to most closely fit these requirements. Is a file to be sorted in some ordered sequence? Is one file to be merged with another file? Are certain cards to be selected from a file? Are totals to be tabulated for control groups within a file? Is information to be reproduced from one file to another? Once you have selected what seems to be the appropriate routine, the next step is to discover whether that routine provides the complete processing desired. If not, will the use of several utility routines provide the complete solution? If again the answer is no, then the use of COBOL must be considered, usually in combination with one or more of the utility functions.

2. Is reassignment of an input file to a different hardware device necessary? If so, this can be accomplished very quickly by altering the ASSIGN TO statement for that particular file in the utility program's COBOL source deck and recompiling. For example, in the Alter program, the input file to be corrected is assumed to be on magnetic tape and the corrections on punched cards. If this is not so, then the ASSIGN TO statements for one or both of the files must be changed and the program recompiled.

3. Is reassignment of an output file to a different hardware device necessary? If so, the ASSIGN TO statement for that file must be changed to the appropriate output device. For example, if it would be more convenient to have the selected output of the Select program on magnetic tape instead of punched cards or the printer, the ASSIGN TO statement for the selected output can be changed.

4. What peripheral units are available and what are the restrictions on their use? In those computer configurations having a card reader/punch unit as the only punched card input/output device, any utility routine operation is limited to either one card input file or one card output file. The PERIO B program can be used to place one or more input card files on magnetic tape prior to executing the utility routine or to place one or more magnetic tape files on punched card decks following the execution of the routine. Other decisions to be made concerning the assignment of peripheral units may relate to the number of magnetic tape drives available. For example, in the Sort B program the number of drives available will determine such things as whether a four-tape sort can be used instead of the slower three-tape sort and whether the Sort B program will be loaded from tape or from cards.

Each of the following sections relates to a separate utility routine and can be referenced independently of each other. The concluding section contains a sample payroll application as it was transferred from a tabulating environment to the computer via the Easytab utility routines and the COBOL language.

SECTION II

SORT B PROGRAM

INTRODUCTION

The Sort B program performs all of the basic functions of the sorter. Eighty-character items (punched cards or card images on tape) are read, sorted in ascending or descending order on a maximum of eight key fields, and written onto an output tape. Any unreadable records are printed out for correction and deleted from the sort. The number of items sorted is limited to approximately 57,000, the number which can be stored on a full reel of tape. Three or four tapes can be utilized by the sorting process.

The general setup for the Sort B program is shown in Figure 2-1.

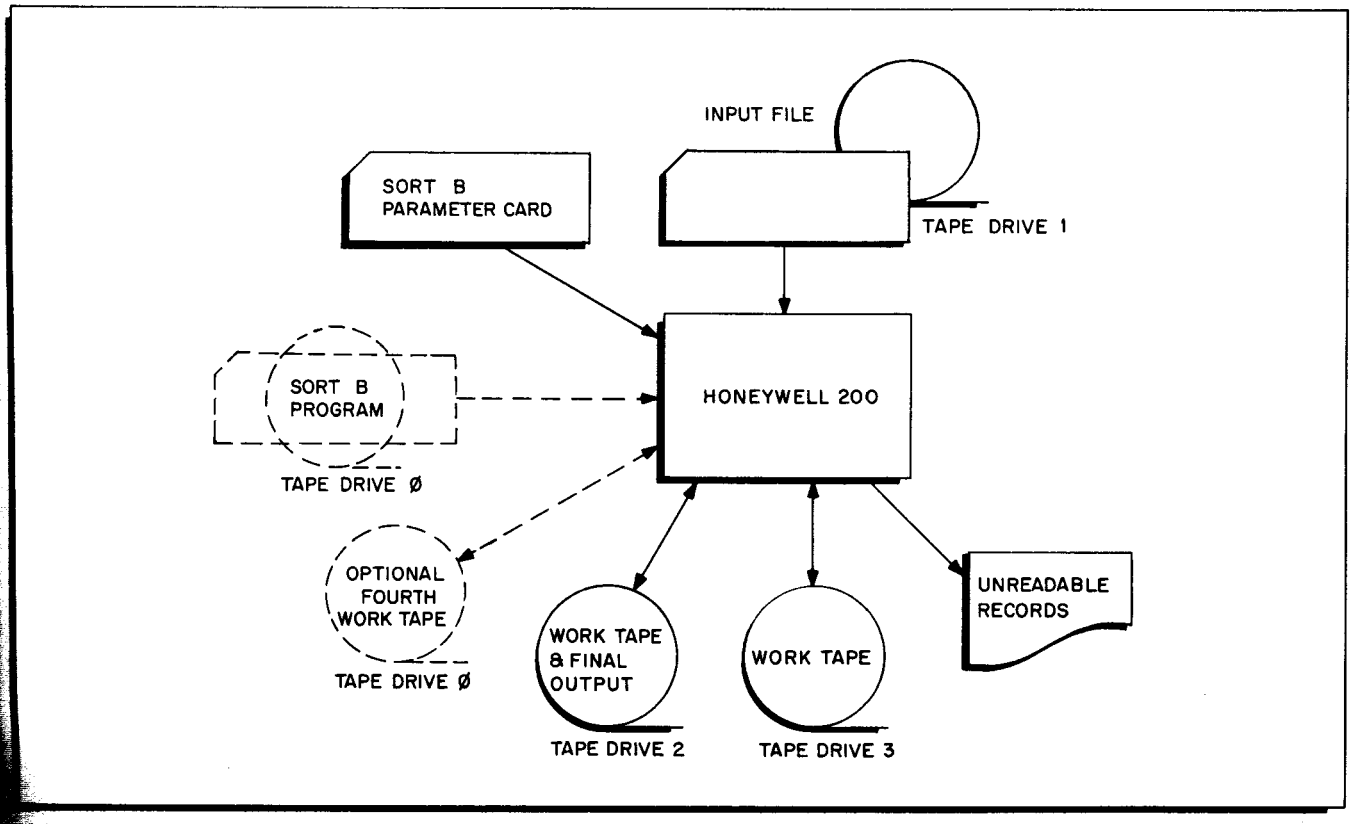


Figure 2-1. The Sort B Program

A complete coverage of the Sort B program can be found in Section III of the Easytab Utility Programs Software Manual, File Number 206.

SPECIFICATIONS

1. The input file can be on punched cards or magnetic tape. The total number of input records must not exceed the number of items which can be written on a full reel of tape (approximately 57,00 items).
2. The final sorted output file is on tape.
3. A minimum of three tapes is needed during the sort. If the input reel contains 30,000 items or less, the user can indicate that the portion of the tape following the input data is to be used for one of the tapes. If the input reel contains more than 30,000 items, the input tape file must be removed following the presort phase and a work tape must be mounted. If four tape drives are available, a third tape can be utilized.
4. The Sort B program consists of three segments:
   a. Presort - Input items are read, ordered into strings, and written out onto two of the tapes.
   b. Merge - Groups of strings are merged together until a single ordered string remains on each of the tapes. Read-backward polyphase merging is used to advantage during this segment.
   c. Last pass - The string from each tape is merged together, giving one string which is the sorted output file.
5. A maximum of eight key fields can be specified.

THREE-TAPE SORT (CARD INPUT, ASCENDING ORDER)

Application

An input deck of insurance premium cards is to be placed on tape and sorted as follows:

Major	Date Due	
↓	Month	columns 21-22
	Day	columns 23-24
	Territory	columns 43-46
	Agent Number	columns 15-20
Minor	Policy Number	columns 1-10

Three tape drives are available.

Preparation

1. Punch a Sort B parameter card as shown in Figure 2-2.
2. Set up the computer run as shown in Figure 2-3. Since only three drives are available, notice the manner in which the Sort B program is loaded from cards along with the data input deck.

EASYTAB - SORT B

Date _____

I.D. _____

APPLICATION THREE-TAPE SORT (CARD INPUT, ASCENDING) Author _____

SORT B
1 5

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
C		1	
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

NO. OF REELS OF INPUT: Input on cards; leave blank — 10; 1 Thru 9

MACHINE SIZE: 11; Δ = 8K, 3 = 12K, 4 = 16K

INPUT BLOCKING ②: Input on cards; leave blank — 15 16; ΔΔ = 02

OUTPUT BLOCKING ②: 17 18; ΔΔ = 02 — Output file blocked by two in order to be compatible with other Easytab Utility Routines

Key 1 (Month, Day)	Key 2 (Territory)	Key 3 (Agent #)	Key 4 (Policy #)
2104	4304	1506	0110
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification: 61 70

Output Reel Identification: DAILY-PREM (71 80) — Identification will be placed in Identification field of the header label on the sorted output file.

① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 2-2. Sort B Program; Three-Tape Sort (Card Input, Ascending Order) - Parameter Card

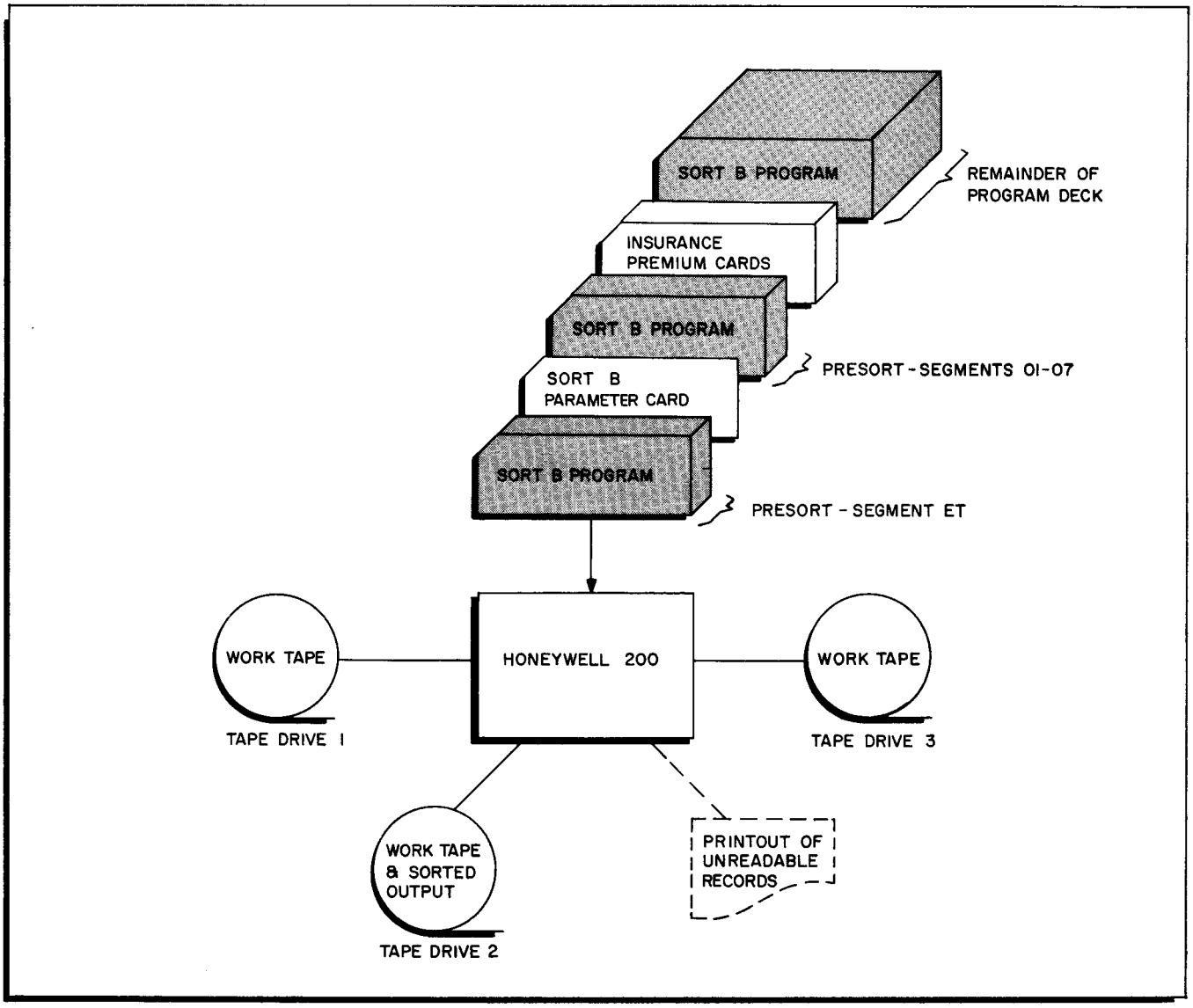


Figure 2-3. Sort B Program; Three-Tape Sort (Card Input, Ascending Order) - Computer Setup

THREE-TAPE SORT (TAPE INPUT, DESCENDING ORDER)

Application

The accounts receivable master file is to be sorted by balance outstanding (columns 40-47) in descending order in preparation for printing the monthly balance report. The master file contains a maximum of 27,000 items.

Preparation

1. Punch a Sort B parameter card as shown in Figure 2-4. Since the input tape tape contains less than 30,000 records, the remainder of the reel can be used as a work tape.
2. Set up the computer run as shown in Figure 2-5.

EASYTAB - SORT B

Date _____

I.D. _____

APPLICATION THREE-TAPE SORT (TAPE INPUT-DESCENDING) Author _____

S O R T B
1 5

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
T		1	D
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

NO. OF REELS OF INPUT	MACHINE SIZE	INPUT BLOCKING ②	OUTPUT BLOCKING ②
1			
10	11	15 16	17 18
1 Thru 9	Δ = 8K 3 = 12K 4 = 16K	ΔΔ = 02	ΔΔ = 02

Both tapes use standard Easytab blocking of two

Balance Outstanding

Key 1	Key 2	Key 3	Key 4
4 Ø Ø 8			
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification

A/R MASTER
61 70

{ This value will be compared with the value found in the header label of the input file.

Output Reel Identification

SORTED A/R
71 80

{ This value will be placed in the header label of the sorted output tape.

① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 2-4. Sort B Program; Three-Tape Sort (Tape Input, Descending Order) - Parameter Card

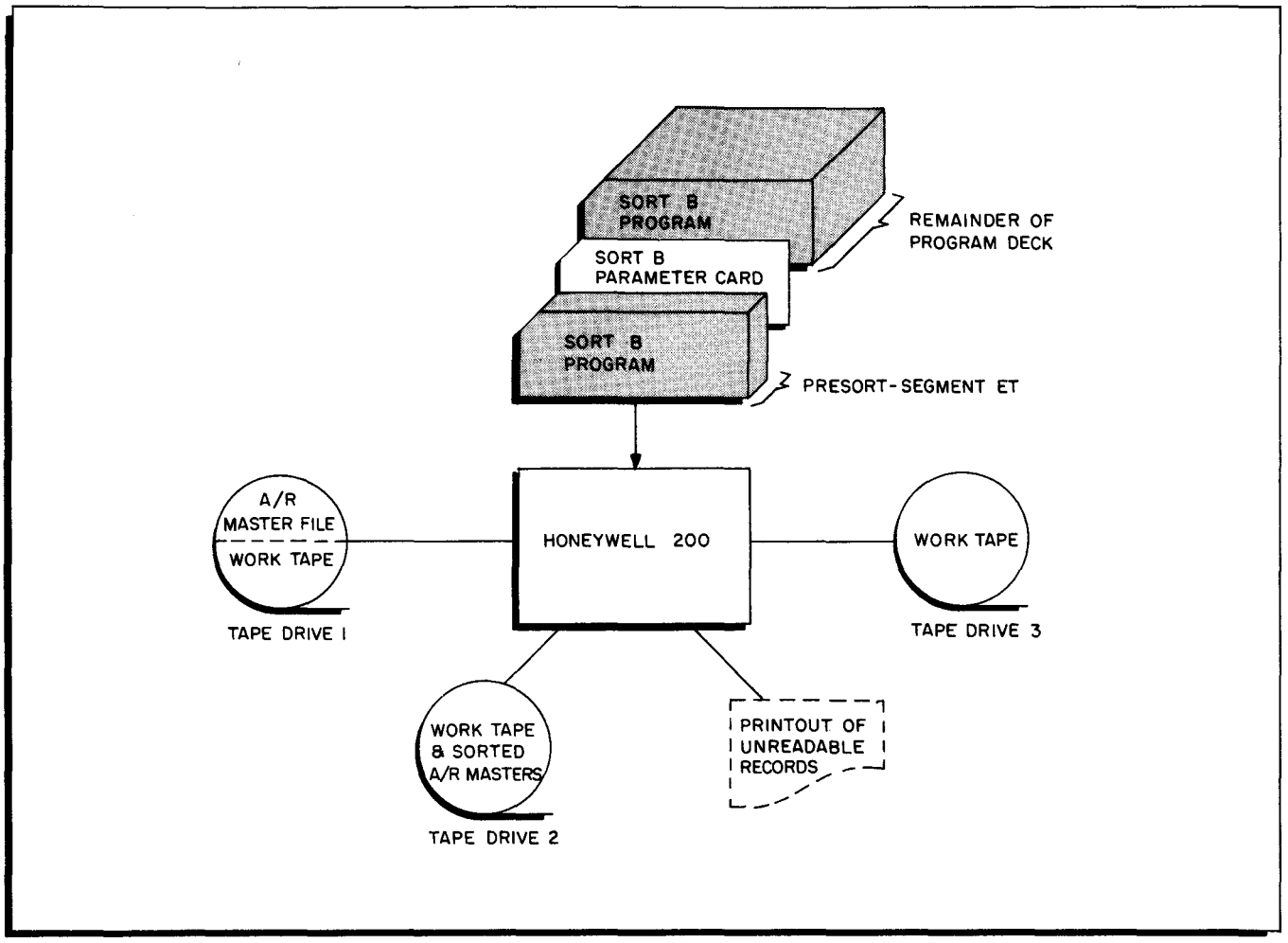


Figure 2-5. Sort B Program; Three-Tape Sort (Tape Input, Descending Order) - Computer Setup

FOUR-TAPE SORT (CARD INPUT)

Application

A hospital patients' history file is to be sorted on the following fields:

Attending Physician No. (columns 60-67)

Date of Admission (Month, Day, Year - columns 25-30)

Date of Discharge (Month, Day, Year - columns 31-36)

Patient Name (columns 1-15)

The history file is on punched cards. The computer being used has a 12,288-character memory and four tape drives.

Preparation

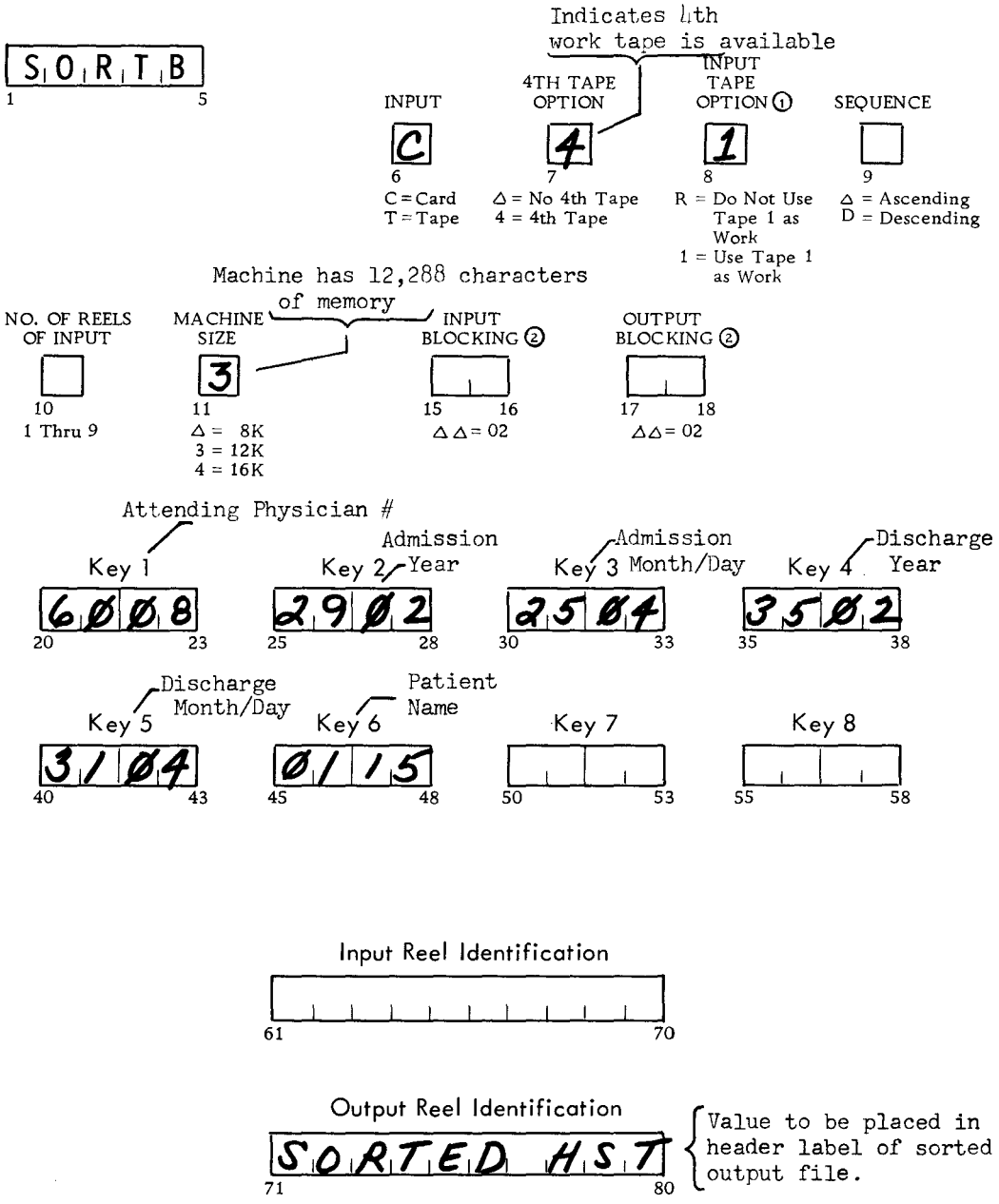
1. Punch a Sort B parameter card as shown in Figure 2-6.
2. Set up the computer run as shown in Figure 2-7.

EASYTAB - SORT B

Date _____

I.D. _____

APPLICATION *FOUR-TAPE SORT (CARD INPUT)* Author _____



① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 2-6. Sort B Program; Four-Tape Sort (Card Input) - Parameter Card

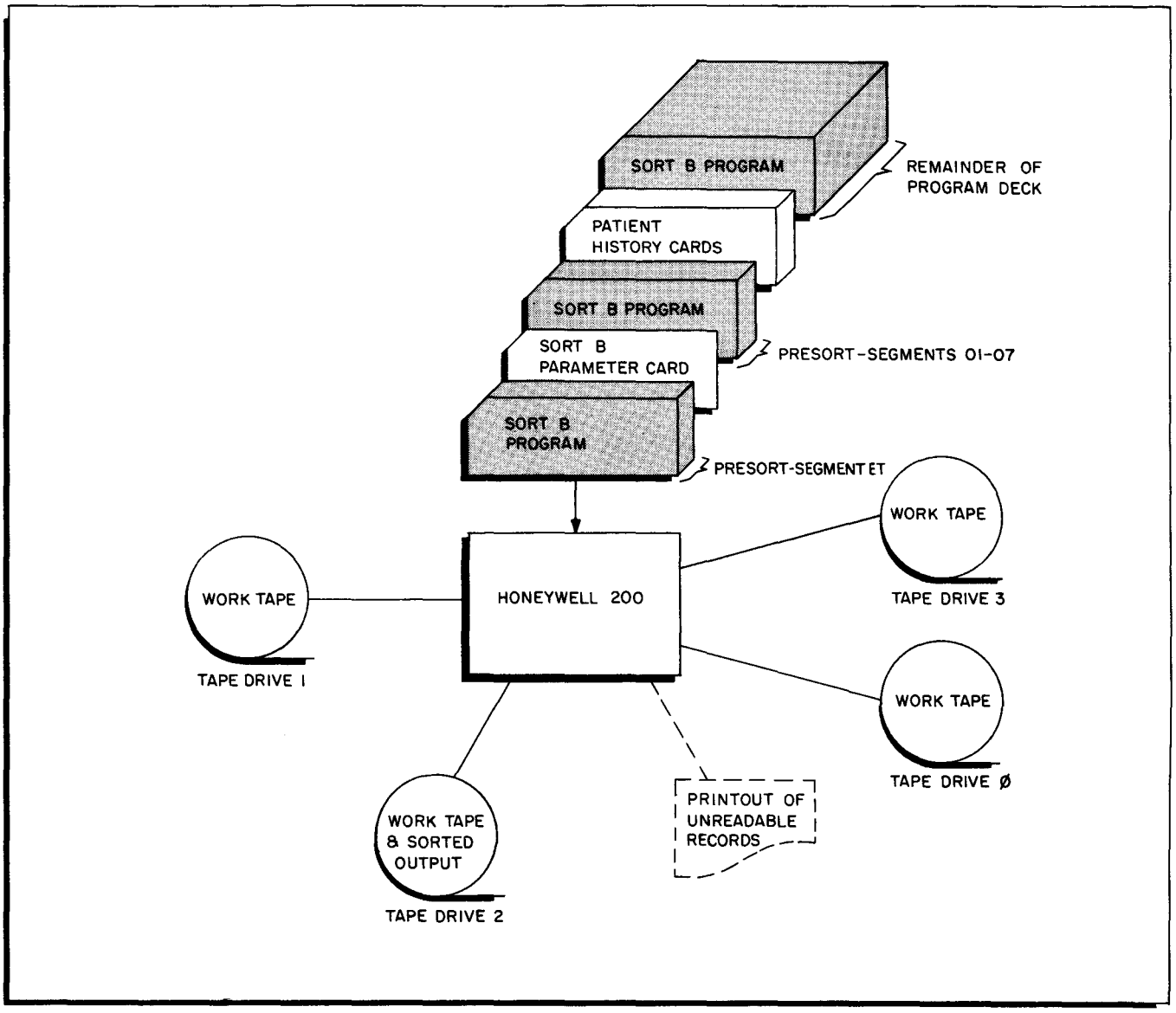


Figure 2-7. Sort B Program; Four-Tape Sort (Card Input) - Computer Setup

FOUR-TAPE SORT (TAPE INPUT)

Application

An inventory master file is to be sorted according to the contents of the following fields:

Cost Ratio (columns 71-76)

Component Number (columns 1-8)

The inventory file is on tape. The computer being used has 16, 384 characters of memory and four tape units. The number of items in inventory vary between 40 - 45, 000.

EASYTAB - SORT B

Date _____

I.D. _____

APPLICATION *FOUR-TAPE SORT (TAPE INPUT)* Author _____

S O R T B
1 5

Input file is to be rewound at end of **Presort** and replaced by work tape

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
T	4	R	
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

Memory = 16,384 characters

NO. OF REELS OF INPUT	MACHINE SIZE	INPUT BLOCKING ②	OUTPUT BLOCKING ②
1	4		
10	11	15 16	17 18
1 Thru 9	Δ = 8K 3 = 12K 4 = 16K	ΔΔ = 02	ΔΔ = 02

Standard **Easytab** blocking

Cost Ratio — Component Number

Key 1	Key 2	Key 3	Key 4
7 1 Ø 6	Ø 1 Ø 8		
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification

I N V M A S T E R
61 70

Input label checked for this identification value

Output Reel Identification

I N V M A S T E R 1
71 80

Value to be placed in output label.

① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 2-8. Sort B Program; Four-Tape Sort (Tape Input) - Parameter Card

Preparation

1. Punch a Sort B parameter card as shown in Figure 2-8. Notice that the program is directed to rewind the input reel so that it can be removed and replaced by the work tape.
2. Set up the computer run as shown in Figure 2-9.

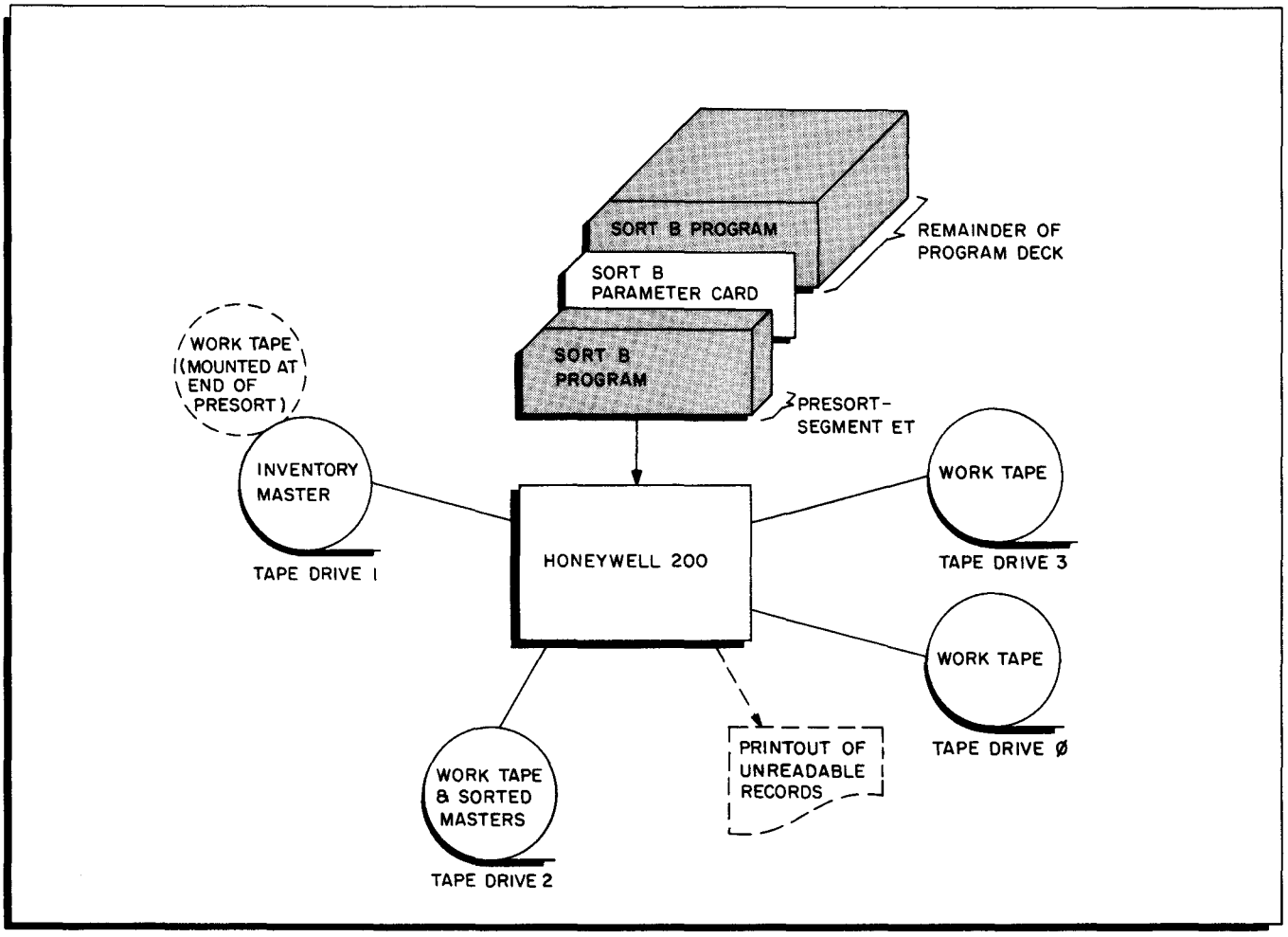


Figure 2-9. Sort B Program; Four-Tape Sort (Tape Input) - Computer Setup

LOADING THE SORT B PROGRAM FROM TAPE

In all of the previous examples, the Sort B program was loaded from cards. On any computer having only three tape drives this is mandatory since the sorting process requires a minimum of three work tapes. In a four-tape system, two alternatives are possible: (1) the fourth drive can be used for loading the Sort B program; or (2) the additional drive can be used for a work tape. In most instances faster sort speeds can be realized by choosing the latter alternative. One obvious exception to this rule is the situation where many short files are to be sorted in consecutive operations. In this case, the time consumed by the repeated loading of the sort program from cards for each execution might well be longer than the time saved by adding the fourth work tape.

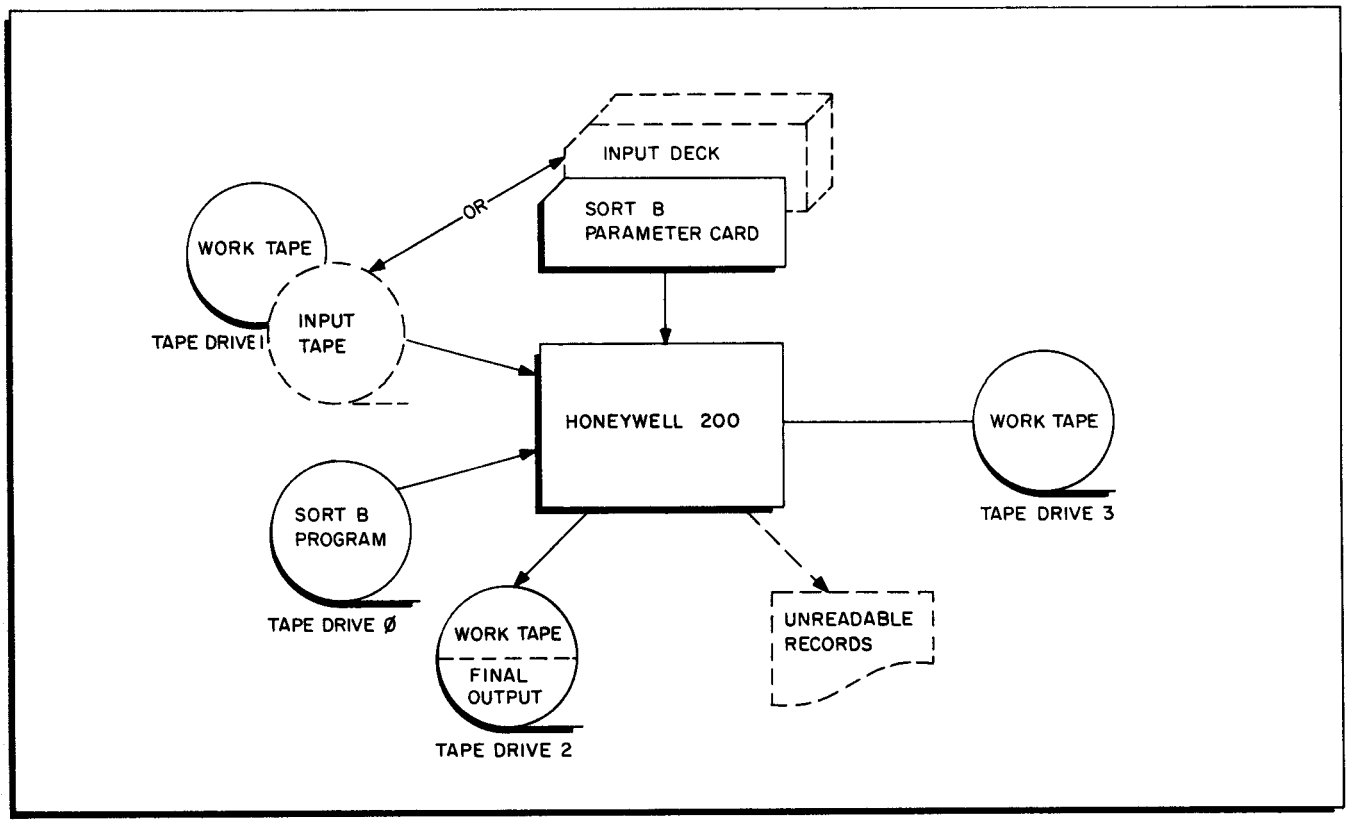


Figure 2-10. Sort B Program; Four-Tape Configuration - Program Tape with Three-Tape Sort

EASYTAB - SORT B

Date _____

I.D. _____

APPLICATION CHECK SHEET Author _____

S O R T B
1 5

Must be "R" if tape input contains more than 30,000 items.

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

Leave blank if input on cards.

NO. OF REELS OF INPUT	MACHINE SIZE	INPUT BLOCKING ②	OUTPUT BLOCKING ②
10	11	15 16	17 18
1 Thru 9	Δ = 8K 3 = 12K 4 = 16K	ΔΔ = 02	ΔΔ = 02

Blocking = "02" if Easytab compatibility is desired

Check beginning position and length of each key.

Key 1	Key 2	Key 3	Key 4
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification
61 70

Output Reel Identification
71 80

① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 2-11. Sort B Program Check Sheet

SECTION III

MERGE B PROGRAM

INTRODUCTION

The Merge B program performs four collator functions: merging, match merging, selecting unmatched primaries, and selecting unmatched secondaries.

The general setup of the program is shown in Figure 3-1.

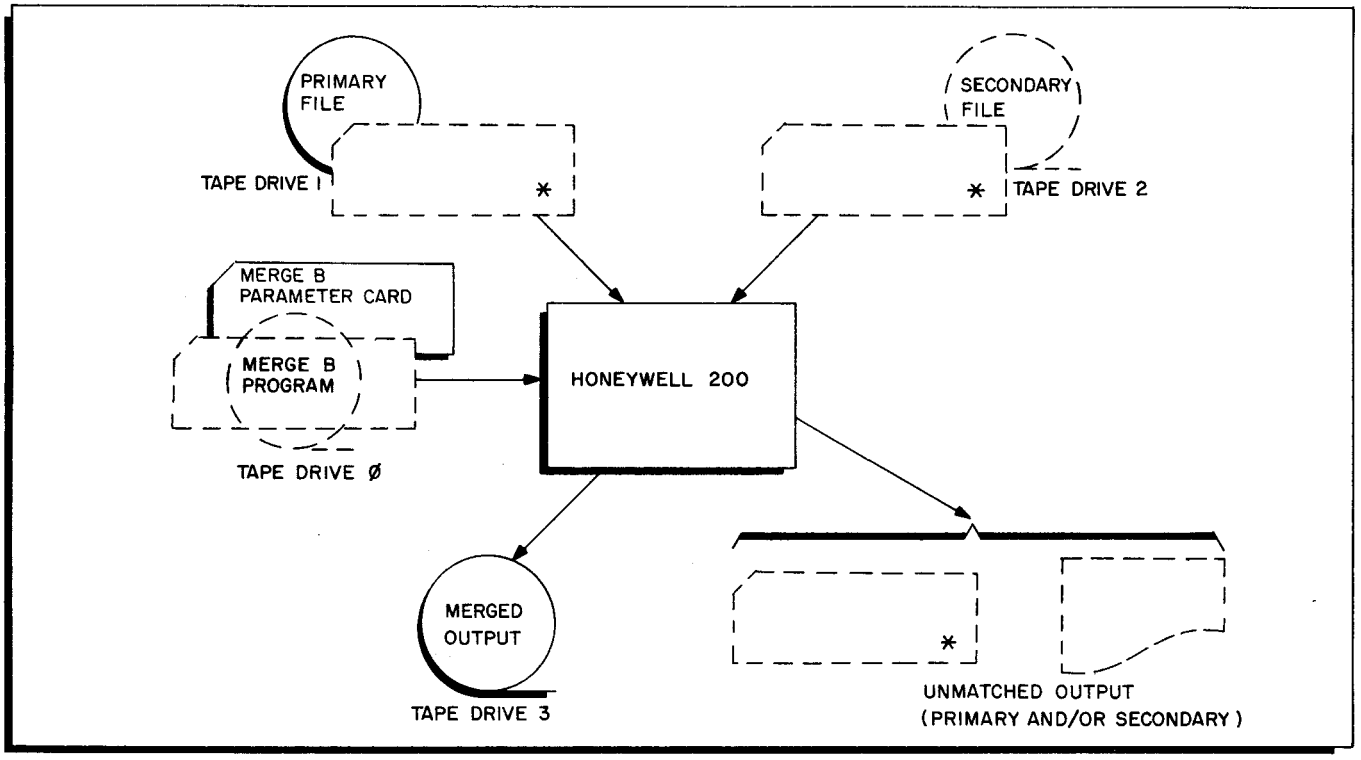


Figure 3-1. The Merge B Program

A complete coverage of the Merge B program director card and operations procedures can be found in Section II of the Easytab Utility Programs Software Manual, File Number 206.

SPECIFICATIONS

1. Both the primary and the secondary files must be sorted in the same sequence and in the same direction (ascending or descending) before being entered into the merge. The key data fields, of which a maximum of five may be specified, need not occupy the same relative positions in the primary file as they do in the secondary file, although this is usually the case when merging. All tape files are assumed to have a blocking factor of two.

2. The appropriate Merge B parameter card must be punched and inserted into the card reader to provide the following data to the Merge B program:

   a. The number of key fields to be considered during the merge.

   b. The function (normal merge, match merge, select unmatched primary, or select unmatched secondary) to be performed on the two files.

   c. The type of media (punched cards or magnetic tape) on which the primary and secondary input files are stored and the type of media (punched cards or printed output) desired for the selected records. Unless a separate card reader and a card punch are available, only one type of card operation can be specified.

   d. The location of the key fields on the primary and the secondary input files. The key fields are specified, left to right, in the same order as they are wired into the selector hubs on the collator plugboard.

NORMAL MERGE

Application

Two card decks, a year-to-date summary file and a monthly summary file are merged, producing a merged output deck. The setup under the former tabulating system is shown in Figure 3-2.

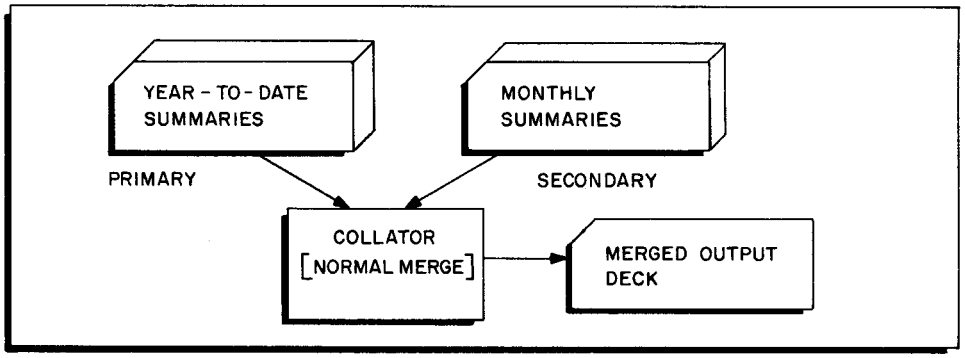


Figure 3-2. Merge B Program; Normal Merge - Tabulating Setup

Under the computer system, the year-to-date summaries have been stored on magnetic tape. The key fields are located as follows:

Area code (major)	col. 16-23
Account number (interm.)	col. 1-10
Date (minor)	col. 75-80 (Month, day, year)

Both files are in ascending order.

Preparation

1. Punch a Merge B parameter card (Figure 3-3).
2. Set up the run as shown in Figure 3-4. Set SENSE switch 4 OFF to indicate that the files are in ascending sequence.

EASYTAB - MERGE

Date _____

I.D. _____

APPLICATION NORMAL MERGE _____ Author _____

M E R G E
1 5

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
5	NM	PT	SC		
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary SS = Select Secondary MM = Match Merge NM = Normal Merge	PC = Card PT = Tape	SC = Card ST = Tape	PL = Printer PP = Punch	SL = Printer SP = Punch

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
1608	Ø110	7902	7502	7702
25 28	29 32	33 36	37 40	41 44
Area code (Major)	Account Number (Interm.)	Date (Minor) Year	Month	Day

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
1608	Ø110	7902	7502	7702
45 48	49 52	53 56	57 60	61 64

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 3-3. Merge B Program; Normal Merge - Parameter Card

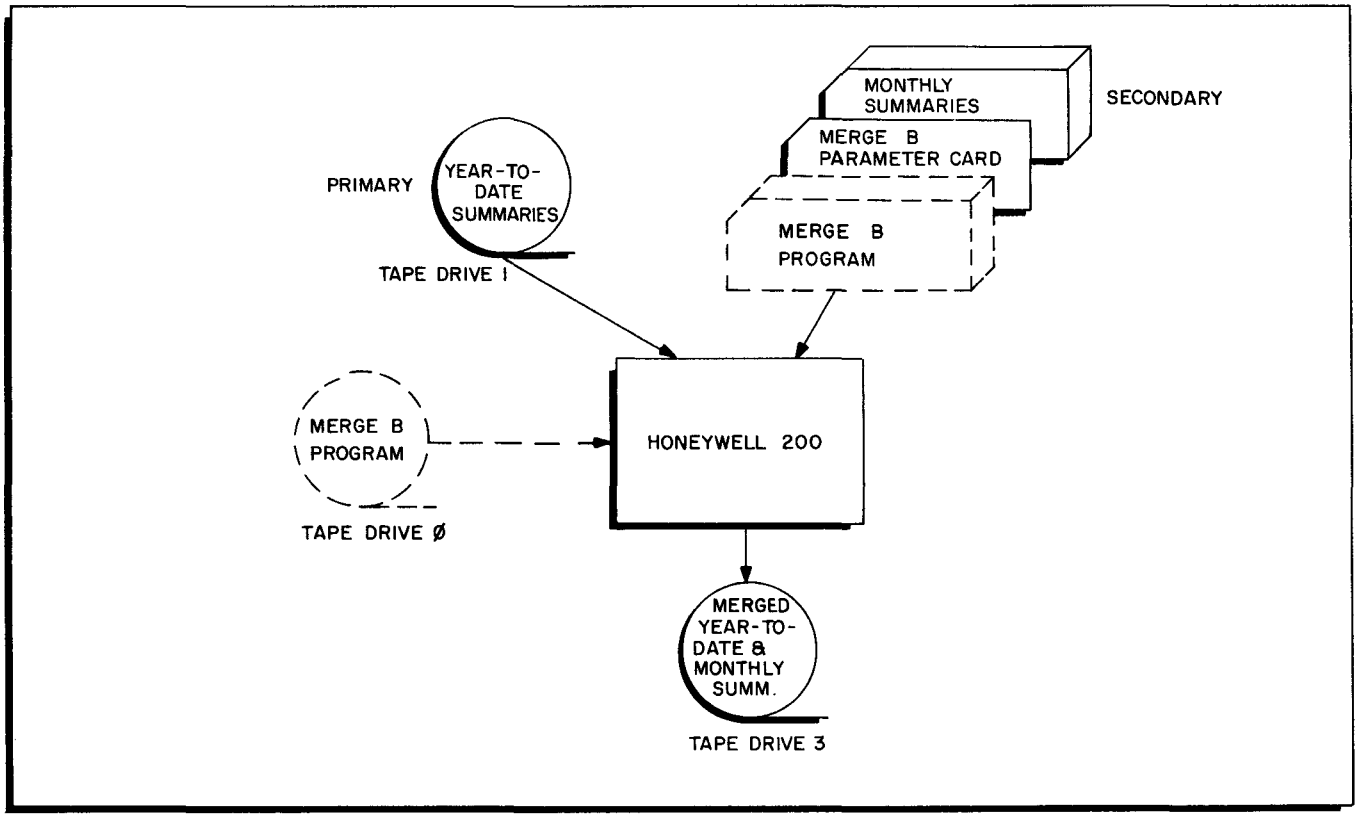


Figure 3-4. Merge B Program; Normal Merge - Computer Setup

MATCH MERGE

Application

Twice each year the year-to-date summary file is used as input to a run which prints a semiannual statement for each customer account. Statements are printed only for those accounts which were active during the six month period. As part of the processing, a name and address card must be merged in front of the summary record for each account. The setup under the tabulating system is shown in Figure 3-5.

Under the computer system both files are on magnetic tape. The key fields are located as follows:

	Name and Address File	Year-to-Date Summary File
Area Code (major)	col. 1-8	col. 16-23
Account Number (minor)	col. 9-18	col. 1-10

Preparation

1. Punch a Merge B parameter card (Figure 3-6). Since, under the old system the unmatched primaries (name and address cards) were listed, we indicate in columns 18-19 that they are to be printed. Likewise, since the unmatched

secondaries (summary cards) were corrected and later inserted, we indicate in columns 21-22 that selected secondaries are to be punched out.

2. Set up the run as shown in Figure 3-7. Set SENSE switch 4 OFF to indicate that the input files are in ascending sequence.

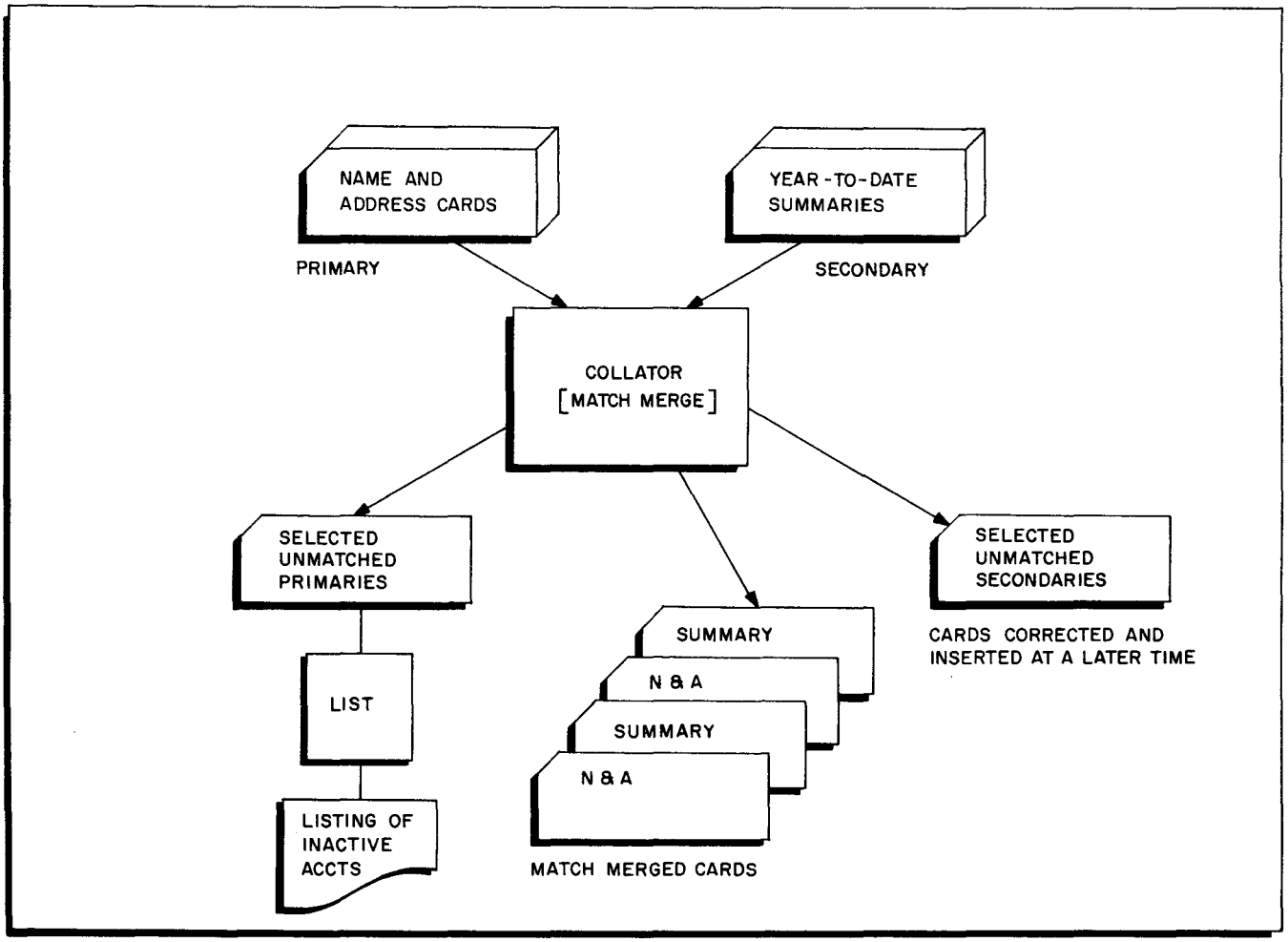


Figure 3-5. Merge B Program; Match Merge - Tabulating Setup

EASYTAB - MERGE

Date _____

I.D. _____

APPLICATION MATCH MERGE EXAMPLE Author _____

M E R G E
1 5

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
2	MM	PT	ST	PL	SP
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary	PC = Card	SC = Card	PL = Printer	SL = Printer
	SS = Select Secondary	PT = Tape	ST = Tape	PP = Punch	SP = Punch
	MM = Match Merge				
	NM = Normal Merge				

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
Ø1Ø8	Ø91Ø			
25 28	29 32	33 36	37 40	41 44

Area Code (Major)

Account Number (Minor)

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
1608	Ø11Ø			
45 48	49 52	53 56	57 60	61 64

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 3-6. Merge B Program; Match Merge - Parameter Card

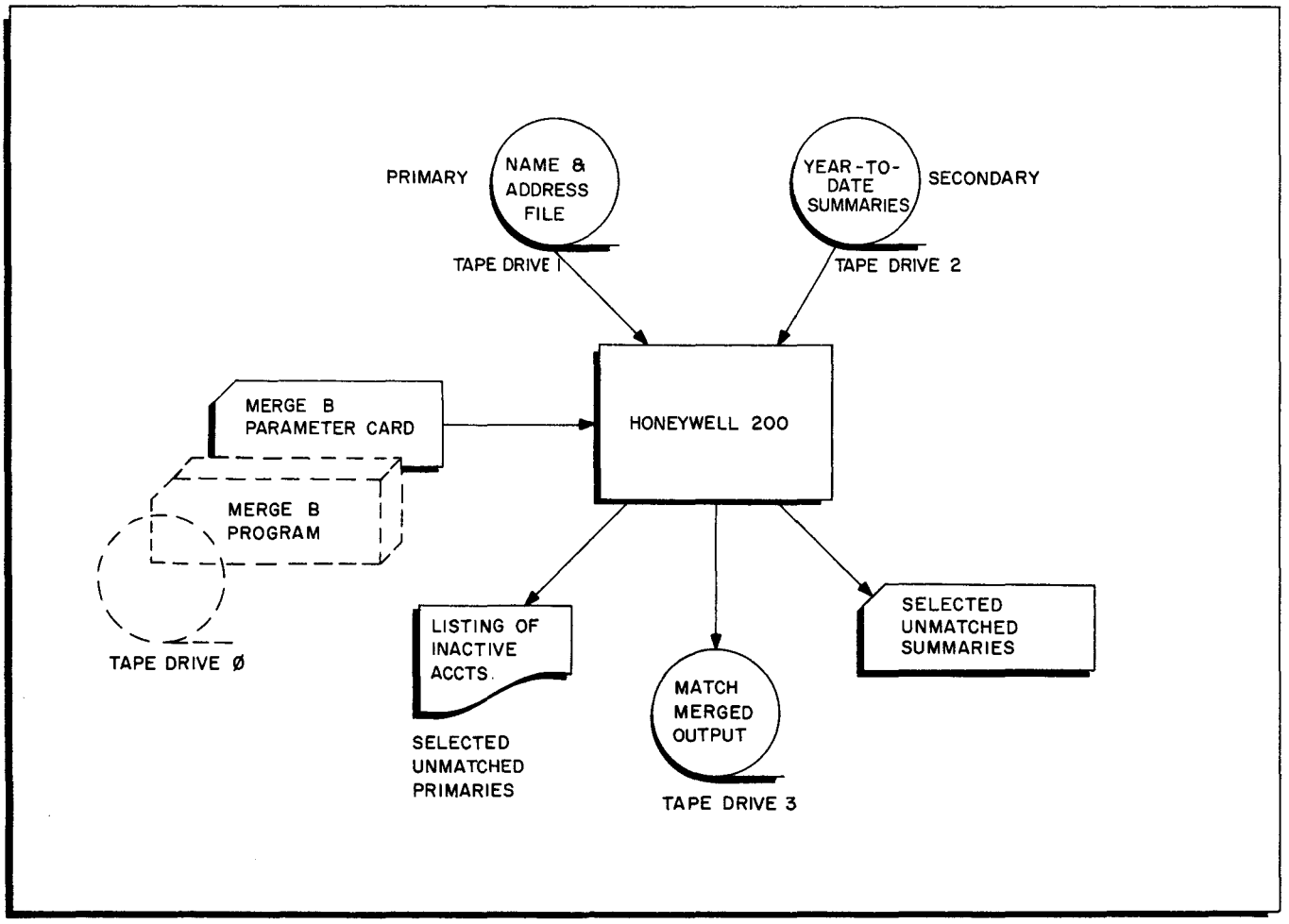


Figure 3-7. Merge B Program; Match Merge - Computer Setup

SELECT PRIMARY

Application

Once each week the accumulated sales detail cards are merged in front of the month-to-date sales summaries in preparation for the month-to-date tabulation and summarizing run. Unmatched detail cards are selected as errors. The setup under the tabulating system is shown in Figure 3-8.

Under the computer system, the monthly summary file has been converted to magnetic tape. The key data for both files is located as follows:

Store code (major)	col. 75-80
Department (intermediate)	col. 70-74
Merchandise code (minor)	col. 01-10

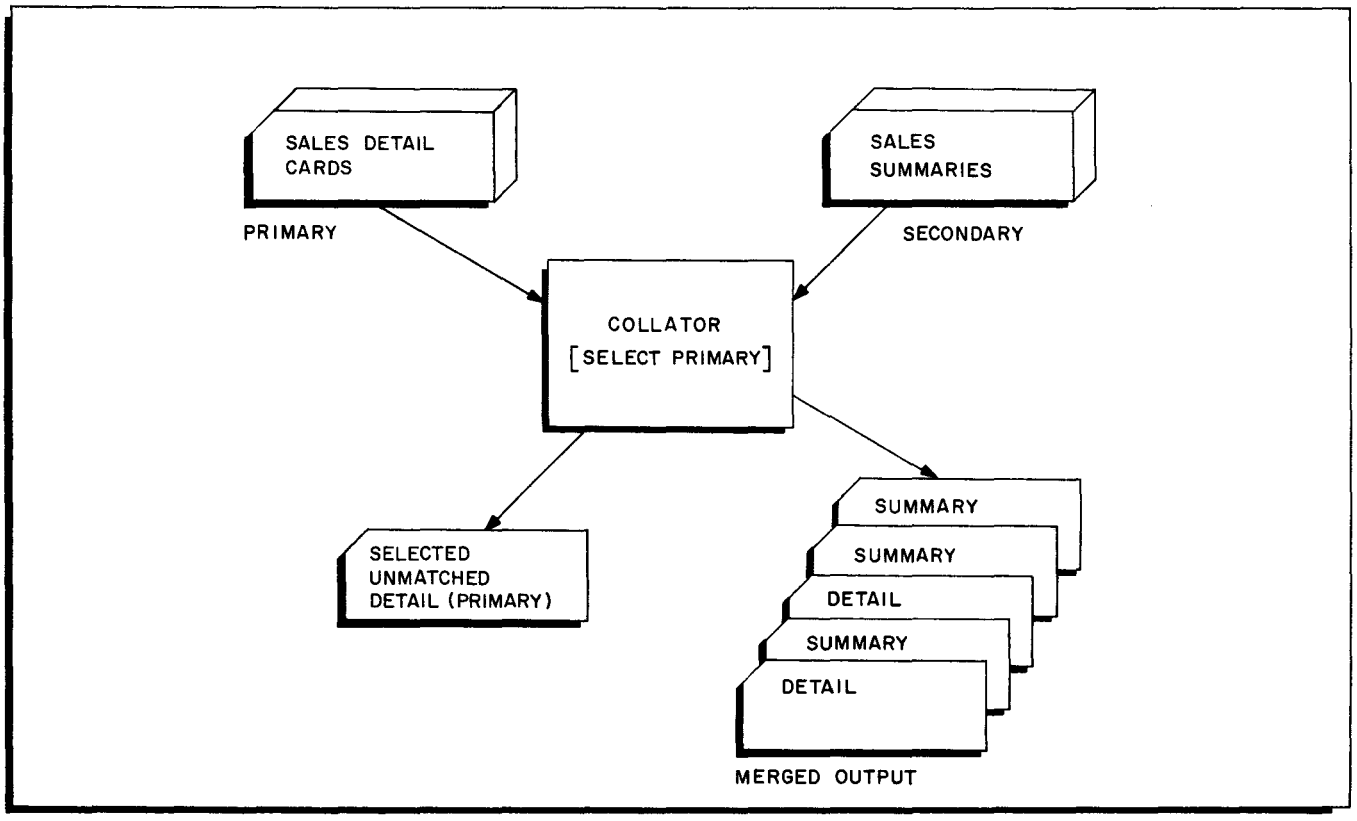


Figure 3-8. Merge B Program; Select Primary - Tabulating Setup

Preparation

1. Punch a Merge B parameter card (Figure 3-9). Since only one card operation can be executed, the selected unmatched primaries cannot be punched out at the same time as the input detail sales cards are being read. Because of this, we have chosen to print the unmatched detail cards.
2. Set up the run as shown in Figure 3-10. Set SENSE switch 4 OFF to indicate that the input files are in ascending sequence.

SELECT SECONDARY

Application

Preparatory to calculating gross pay, the weekly payroll cards must be merged behind the corresponding payroll master cards which contain the hourly rate for each employee. Unmatched employee payroll cards are selected. The setup under the tabulating system is shown in Figure 3-11.

EASYTAB - MERGE

Date _____

I.D. _____

APPLICATION SELECT PRIMARY EXAMPLE Author _____

M E R G E
1 5

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
3	S P	P C	S T	P L	
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary SS = Select Secondary MM = Match Merge NM = Normal Merge	PC = Card PT = Tape	SC = Card ST = Tape	PL = Printer PP = Punch	SL = Printer SP = Punch

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
7 5 Ø 6	7 Ø Ø 5	Ø 1 1 Ø		
25 28	29 32	33 36	37 40	41 44

Store Code (Major)

Dept. (Interm.)

Merchandise code (Minor)

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
7 5 Ø 6	7 Ø Ø 5	Ø 1 1 Ø		
45 48	49 52	53 56	57 60	61 64

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 3-9. Merge B Program; Select Primary - Parameter Card

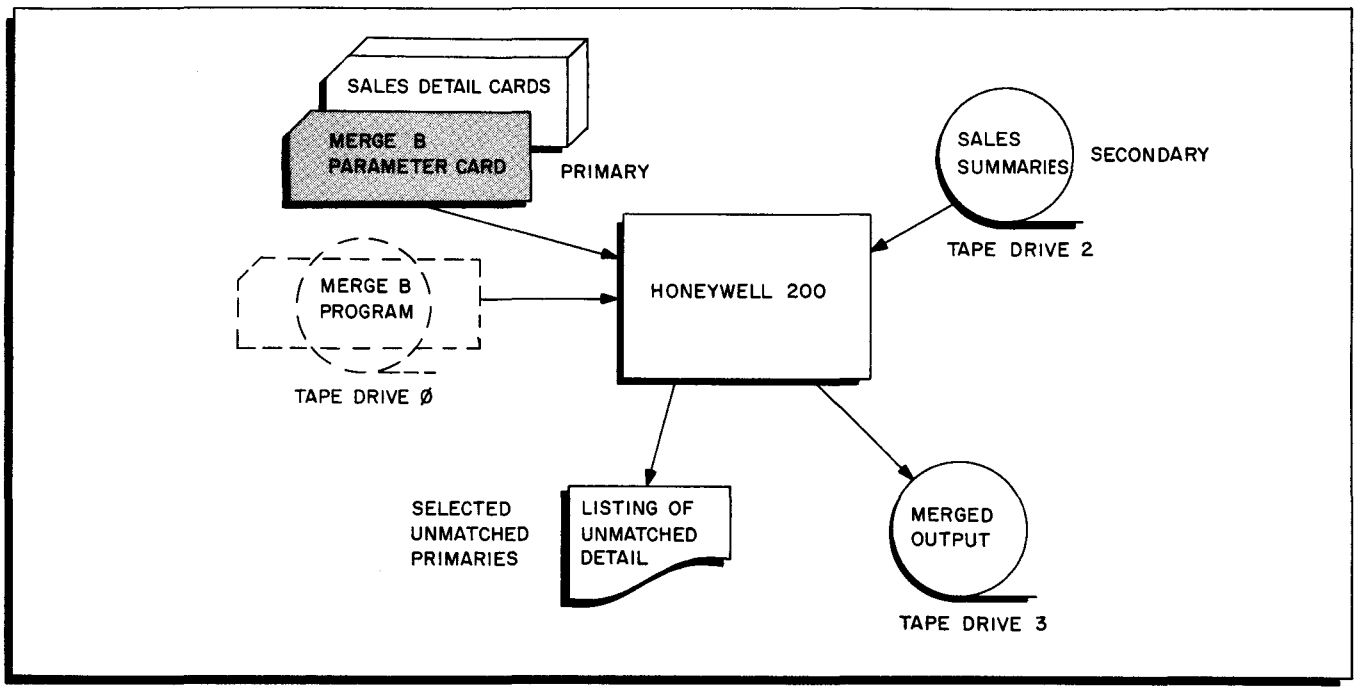


Figure 3-10. Merge B Program; Select Primary - Computer Setup

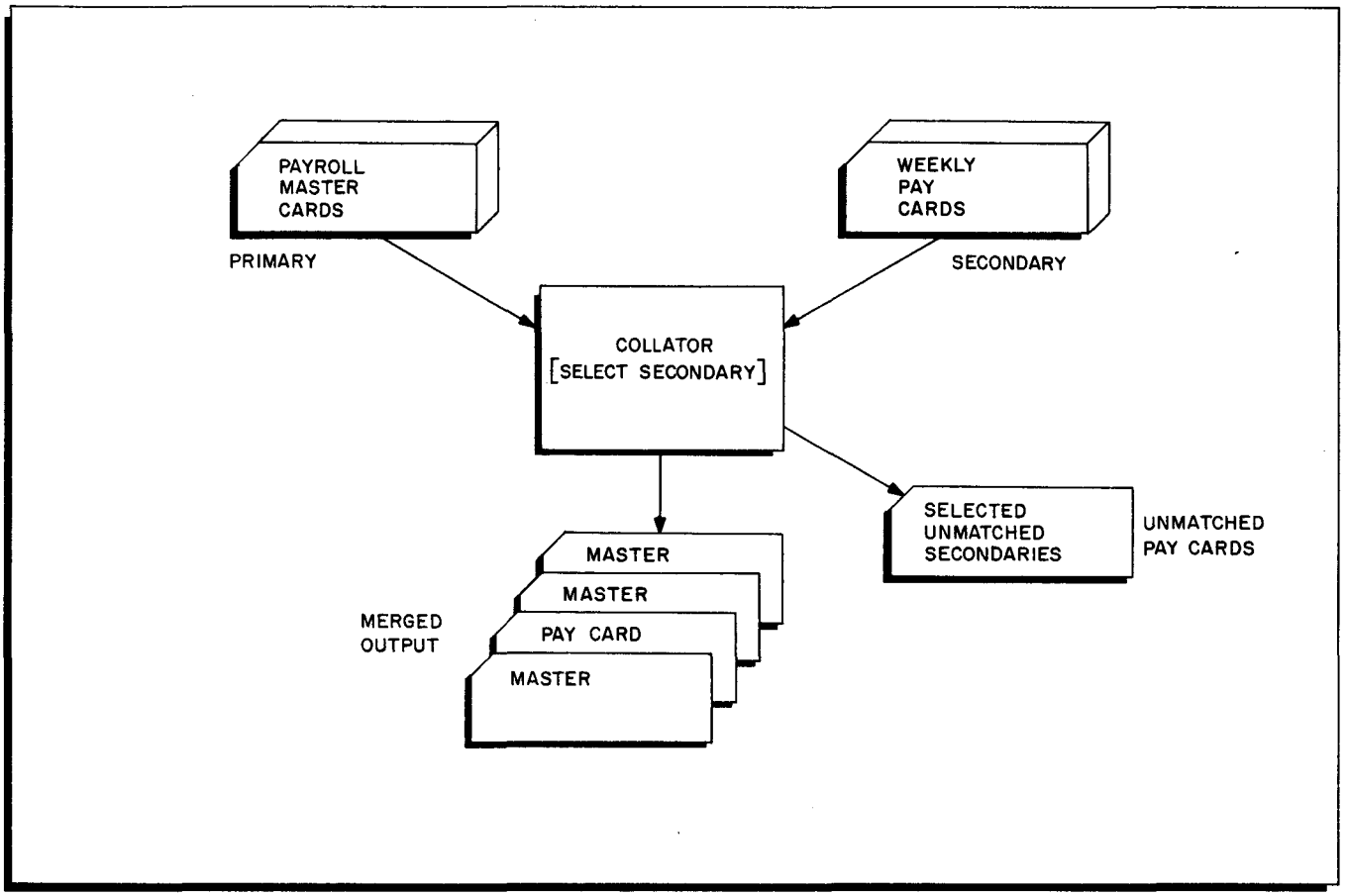


Figure 3-11. Merge B Program; Select Secondary - Tabulating Setup

EASYTAB - MERGE

Date _____

I.D. _____

APPLICATION SELECT SECONDARY EXAMPLE Author _____

MERGE
1 5

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
4	SS	PT	ST		SP
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary SS = Select Secondary MM = Match Merge NM = Normal Merge	PC = Card PT = Tape	SC = Card ST = Tape	PL = Printer PP = Punch	SL = Printer SP = Punch

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
01 03	04 03	07 04	11 05	
25 28	29 32	33 36	37 40	41 44
Plant Number	Building Number	Department Number	Employee Number	

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
20 03	23 03	26 04	01 05	
45 48	49 52	53 56	57 60	61 64

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 3-12. Merge B Program; Select Secondary Example - Parameter Card

Under the computer system the payroll masters and the payroll cards have both been placed on magnetic tape. The key data fields for both files are located as follows:

	Master file	Pay card file
Plant number	col. 1-3	col. 20-22
Building number	col. 4-6	col. 23-25
Department number	col. 7-10	col. 26-29
Employee number	col. 11-15	col. 1-5

Preparation

1. Punch a Merge B parameter card (Figure 3-12). Indicate in columns 21-22 that the selected unmatched secondaries are to be punched out onto cards due to their extremely small volume.

2. Set up the run as shown in Figure 3-13. Set SENSE switch 4 OFF to indicate that the input files are in ascending sequence.

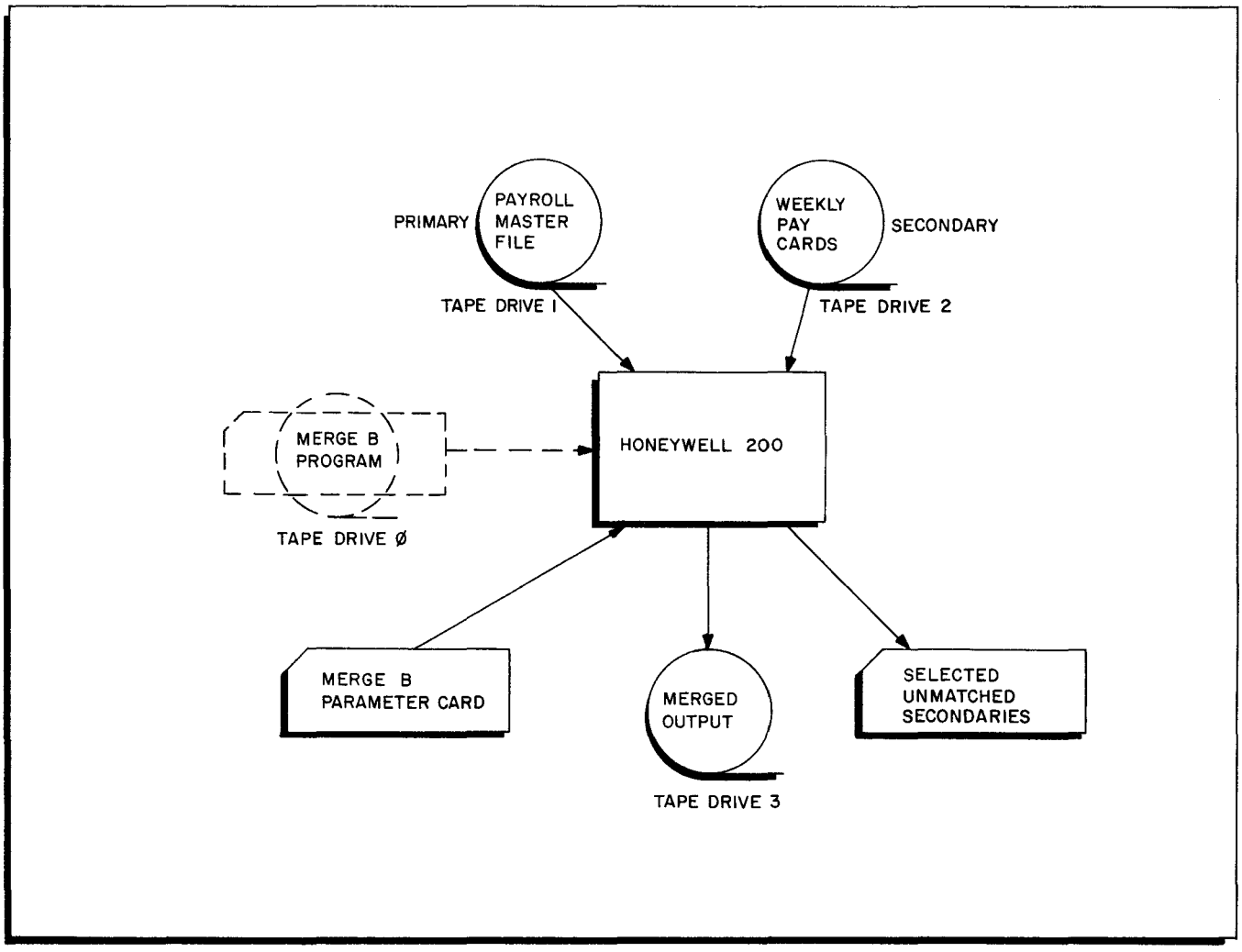


Figure 3-13. Merge B Program; Selected Secondary - Computer Setup

EASYTAB - MERGE

Date _____

I.D. _____

APPLICATION CHECK SHEET Author _____

M,E,R,G,E
1 5

Must be specified.

Number of keys must be equal to number of boxes filled below.

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary SS = Select Secondary MM = Match Merge NM = Normal Merge	PC = Card PT = Tape	SC = Card ST = Tape	PL = Printer PP = Punch	SL = Printer SP = Punch

Card reader/punch unit: only one card file can be specified.
Only one print file can be specified.

Check beginning position and length of each key.

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
25 28	29 32	33 36	37 40	41 44

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
45 48	49 52	53 56	57 60	61 64

Check corresponding Primary/Secondary key lengths (e.g., columns 27-28 must equal columns 47-48, etc.)

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 3-14. Merge B Program Check Sheet

SECTION IV

TOTAL B PROGRAM

INTRODUCTION

The Total B Program performs the three basic functions of the accounting machine:

1. Listing - produces a line of print for each input item plus a total line for each control level break.
2. Accumulation - accumulates and prints a maximum of seven total fields on up to four control levels plus a final total line.
3. Tabulating - individual input items are not printed; a line of totals is printed for each control break.

The general setup for the Total B Program is shown in Figure 4-1. A complete coverage of the program can be found in Section VI of the Easytab Utility Programs Software Manual, File Number 206.

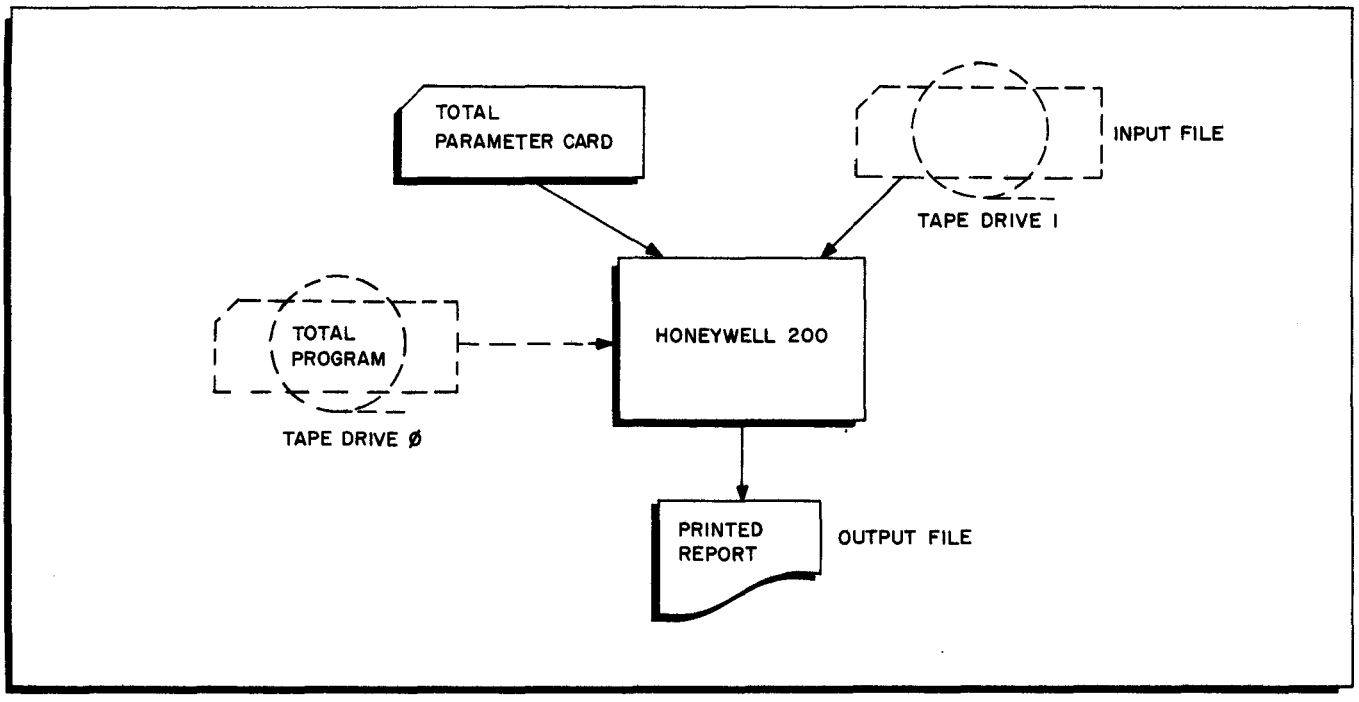


Figure 4-1. The Total B Program

SPECIFICATIONS

1. Input can be on punched cards or on magnetic tape.

2. Output is a printed report.

3. Listing: One line is printed for each input item. Each line contains the printout of the contents of up to four control fields and the contents of up to seven total fields. In addition, up to four level of totals plus a final total can be printed.

4. Tabulating: Each line contains the contents of up to four control fields and the totals of up to seven accumulated amount fields. Four levels of totals plus a final total level can be selected.

5. Page Headings: A page number is automatically printed at the top of each page. In addition, one- or two-line report headings and field headings can also be printed.

LISTING

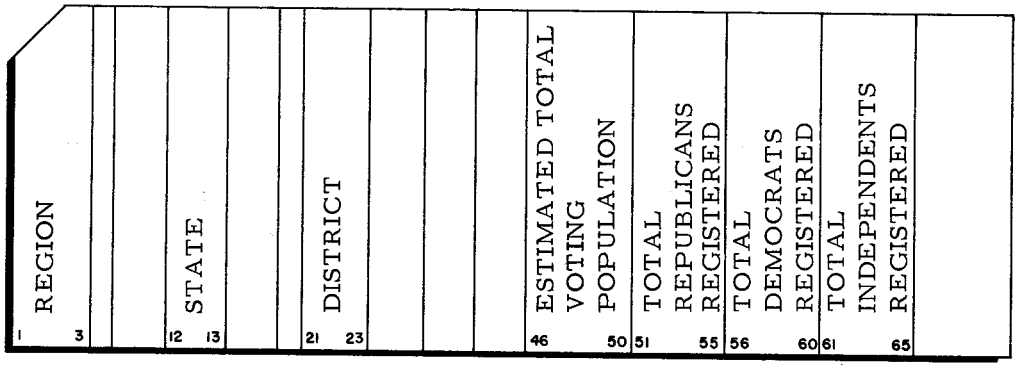
Application

A deck of cards (see Figure 4-2) is to be listed with controls on the following fields:

Region (columns 1-3) major field.

State (columns 12-13) intermediate field.

District (columns 21-23) minor field.



1 73 86

POLL STATISTICS AS OF DECEMBER 31, 1967

	REGION	STATE	DISTRICT	TOTAL VOTE	REPUB-LICANS	DEMOCRATS	INDEPENDENTS
	001	25	205	10259	2056	1437	975
	001	25	205	7702	1502	5516	1961
Minor	TOTAL-1			17961	3558	6953	2936
	001	25	206	584	303	125	86
	001	25	206	200	85	33	50
	001	25	206	25500	14680	8945	855
Minor	TOTAL-1			26284	15068	9103	991
Interm.	TOTAL-2			44245	18626	16056	3927
	001	26	046	9009	2564	6015	333

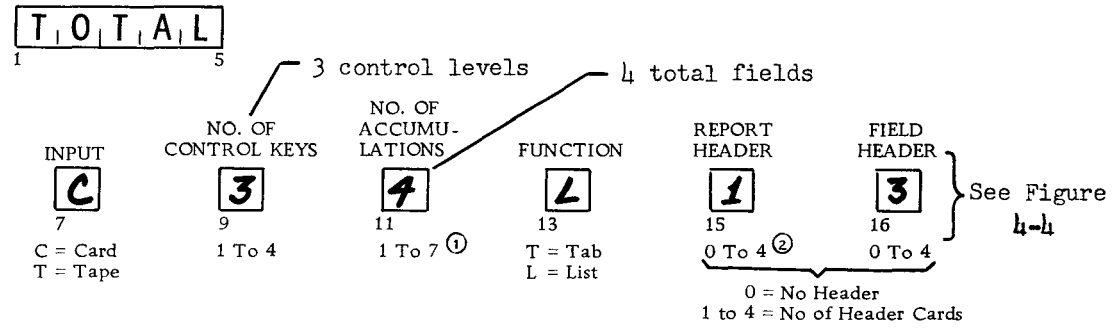
Figure 4-2. Total B Program; Listing - Input and Output File Formats

EASYTAB - TOTAL

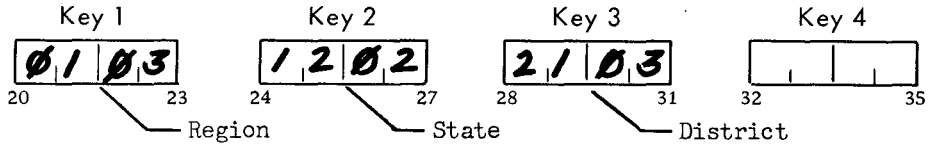
Date _____

I.D. _____

APPLICATION LISTING - CARD TO PRINTER Author _____

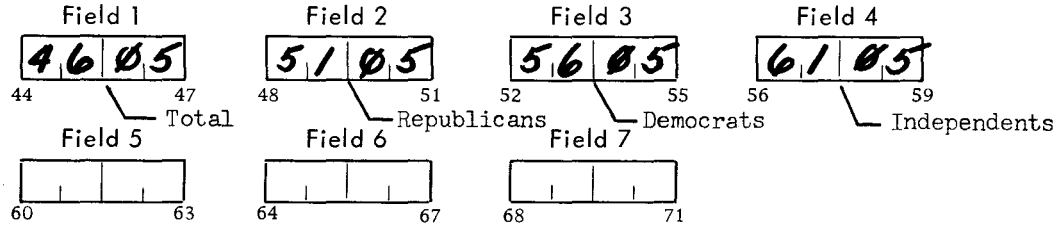


CONTROL KEYS ③



LEFT-MOST PRINT POSITIONS OF CONTROL KEYS ④

ACCUMULATION FIELDS ⑤



① Indicates the highest accumulation key field used.

② Print positions 117-120 of the first line of a Report Header contain the Page Number.

③ Each key may not exceed ten characters.

④ Total number of print positions may not exceed 36 characters.

⑤ The print positions for the accumulations are fixed as follows:
Field 1 = 37 to 48; Field 2 = 49 to 60; Field 3 = 61 to 72; Field 4 = 73 to 84;
Field 5 = 85 to 96; Field 6 = 97 to 108; Field 7 = 109 to 120.

Figure 4-3. Total B Program; Listing (Card to Printer) - Parameter Card

Preparation

1. Punch the following cards:
   a. Total B parameter card (see Figure 4-3).
   b. Report heading card (see Figure 4-4).
   c. Three field heading cards (see Figure 4-4).
2. Set up the Total B program run as shown in Figure 4-5.

TABULATING

Application

The same poll statistics cards are to be tabulated to produce a report as shown in Figure 4-6. Controls are on the same fields (region, state, district) as in the listing example.

Preparation

The preparation is the same as that of the listing example (page 4-5) except that a "T" must be punched in column 13 of the director card.

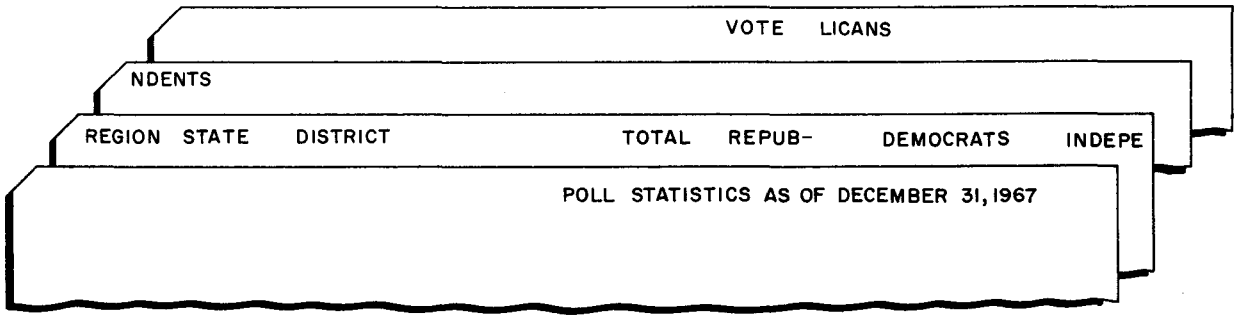


Figure 4-4. Total B Program; Listing - Report and Field Heading Cards

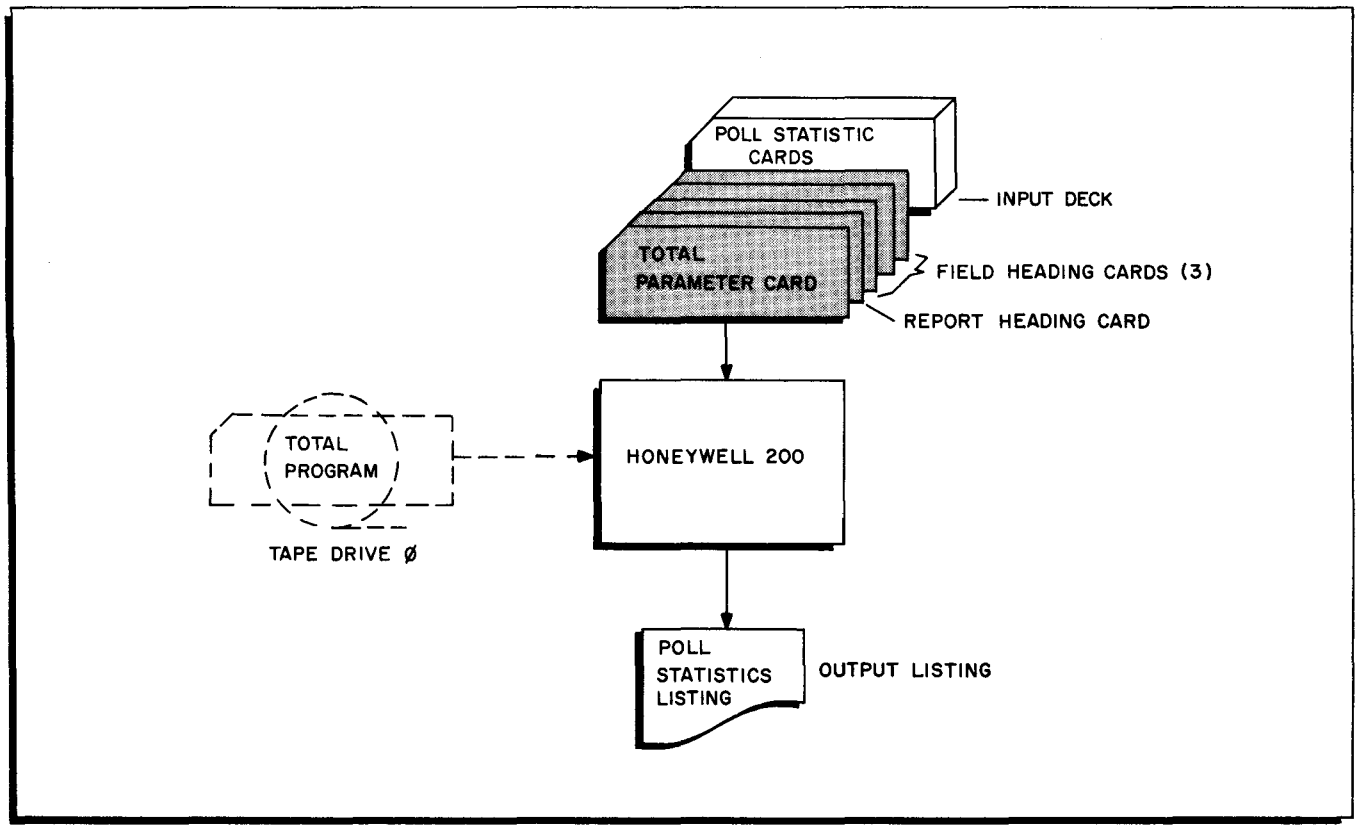


Figure 4-5. Total B Program; Listing (Card to Printer) - Computer Setup

POLL STATISTICS REPORT

	REGION	STATE	DISTRICT	TOTAL	REPUB-LICANS	DEMOCRATS	INDEPENDENTS
Minor	001	25	205	17961	3558	6953	2936
	001	25	206	26284	15068	9103	991
Interm.	TOTAL-2			44245	18626	16056	3927
	001	26	046	356700	220005	114330	12240
	001	26	049	4500	3627	300	265
	001	26	054	6650	4771	1520	123
	TOTAL-2			367850	228403	116150	12628
Major	TOTAL-3			412095	247029	132206	15555
	002	04	155	55607	23661	25817	599

Figure 4-6. Total B Program; Tabulating - Output File Format

EASYTAB - TOTAL

Date _____

I.D. _____

APPLICATION CHECK SHEET Author _____

T O T A L (cols 1–5) — Must equal number of keys filled below. Must equal highest accumulation field used.

INPUT	NO. OF CONTROL KEYS	NO. OF ACCUMULATIONS	FUNCTION	REPORT HEADER	FIELD HEADER
7	9	11	13	15	16
C = Card T = Tape	1 To 4	1 To 7 ①	T = Tab L = List	0 To 4 ②	0 To 4

Total must equal number of header cards that follow (cannot be blank).

0 = No Header
1 to 4 = No of Header Cards

CONTROL KEYS ③

Maximum key length = 10; total key lengths must not exceed 36.

Key 1	Key 2	Key 3	Key 4
20 – 23	24 – 27	28 – 31	32 – 35

LEFT-MOST PRINT POSITIONS OF CONTROL KEYS ④

Last print position used must be less than 36.

Key 1	Key 2	Key 3	Key 4
36 – 37	38 – 39	40 – 41	42 – 43

ACCUMULATION FIELDS ⑤

Maximum length of each accumulation field is nine.

Field 1	Field 2	Field 3	Field 4
44 – 47	48 – 51	52 – 55	56 – 59

Field 5	Field 6	Field 7
60 – 63	64 – 67	68 – 71

① Indicates the highest accumulation key field used

② Print positions 117-120 of the first line of a Report Header contain the Page Number.

③ Each key may not exceed ten characters.

④ Total number of print positions may not exceed 36 characters.

⑤ The print positions for the accumulations are fixed as follows:
Field 1 = 37 to 48; Field 2 = 49 to 60; Field 3 = 61 to 72; Field 4 = 73 to 84;
Field 5 = 85 to 96; Field 6 = 97 to 108; Field 7 = 109 to 120.

Figure 4-7. Total B Program Check List

SECTION V

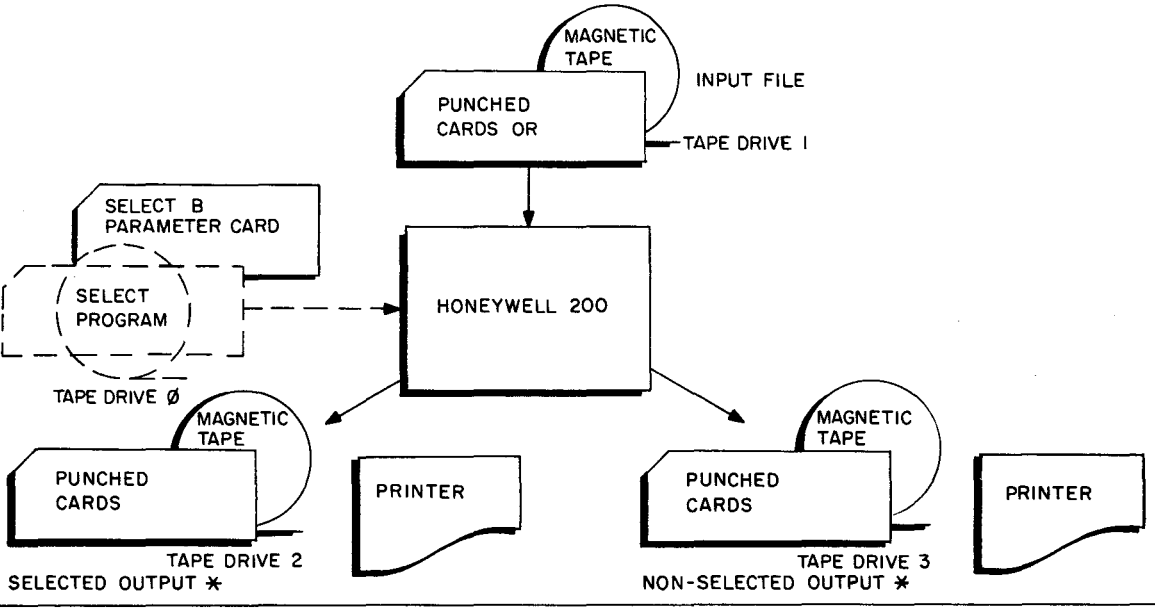
SELECT B PROGRAM

INTRODUCTION

The Select B program provides selection functions far in advance of those available on the collator. On the typical collator, selection of cards can be made according to whether a card is the first or last card within a control group, or whether a card contains a particular number or other value in certain columns. In contrast, the Select program permits the selection of cards or card images according to any one of the following methods:

1. Selection by count - Every n^{th} item of the input file can be selected.
2. Selection by location within the control group - The first or the last item in each group of items can be selected from the input file.
3. Selection by test - Up to three fields on each input item can be compared to one or more values for an equal to, higher than, or lower than comparison. All cards which satisfy these tests can be selected. For example, all cards specifying a subscriber's age of greater than 30 and an average income of less than 7000 dollars and no dependents can be selected from an input file.

The general setup for the program is shown in Figure 5-1.



*The selected output and/or the non-selected output can be placed on punched cards, magnetic tape, printer, cards and printer, or tape and printer. Unless a separate card reader and card punch are available, only one file (input, selected output, or non-selected output) can be on punched cards. Only one printer output may be specified.

Figure 5-1. The Select B Program

A complete coverage of the Select B program, including the format of the director card and the operating procedures, can be found in Section IV of the Easytab Utility Programs Software Manual, File Number 206.

SPECIFICATIONS

1. The input file can be in the form of punched cards or magnetic tape. The selected and non-selected output files can be placed on cards, tape, or printer, or on a combination of cards and printer or tape and printer.
2. Selection by count - Selection of every n^{th} item of the input file is specified by coding columns 1-10 and columns 12-15 of the Select parameter card.
3. Selection by location within group - All columns of the parameter card except for the counter select field (columns 12-15) and the test constant field (columns 33-80) may be utilized whenever this function is chosen. A control group is determined by comparing on up to three key fields. If more than one key field is specified a logical OR relationship is assumed and a control break occurs each time there is a change in the contents of one or more of the fields between two contiguous card records. Then, depending upon the value in column 29 (must be a "1" or "2" only), the first or the last card of the preceding control group is selected.
4. Selection by test - Cards are selected by comparing the contents of one to three key fields to constant values for an equal to, greater than, or less than relationship. If a logical OR is indicated in column 29, only one key field test need be satisfied in order for the card to be selected. If a logical AND is indicated, the contents of all of the key fields specified must satisfy the tests specified in order to select the card. All columns of the parameter card can be utilized with the exception of the counter select field (columns 12-15).

SELECTION BY COUNT (TAPE TO CARD)

Application

Every twentieth item of an input income status file is to be selected for a statistical study. The income status file is on tape; the selected items are to be punched and listed.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-2.
2. Set up the computer run as shown in Figure 5-3. Notice that the non-selected items are not written out since they are not desired. Therefore, no output device was specified for them in the director card.

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION SELECTION BY COUNT (TAPE TO CARD) Author _____

S E L E C
1 5

INPUT	SELECTED OUTPUT	NON-SELECTED OUTPUT	NO. OF KEYS	COUNTER SELECT
T	CP			0020
6	7 8	9 10	11	12 15
C = Card T = Tape	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	1 To 3	

Key 1	Key 2	Key 3	CONDITION
16 19	20 23	24 27	28
			A = And O = Or

Test 1	Test 2	Test 3
29	30	31

Key 1 Test Constant
33 48

Key 2 Test Constant
49 64

Key 3 Test Constant
65 80

TESTS: E = Equal
H = High
L = Low
1 = First Card
2 = Last Card

Figure 5-2. Select B Program; Selection by Count (Tape to Card) - Parameter Card

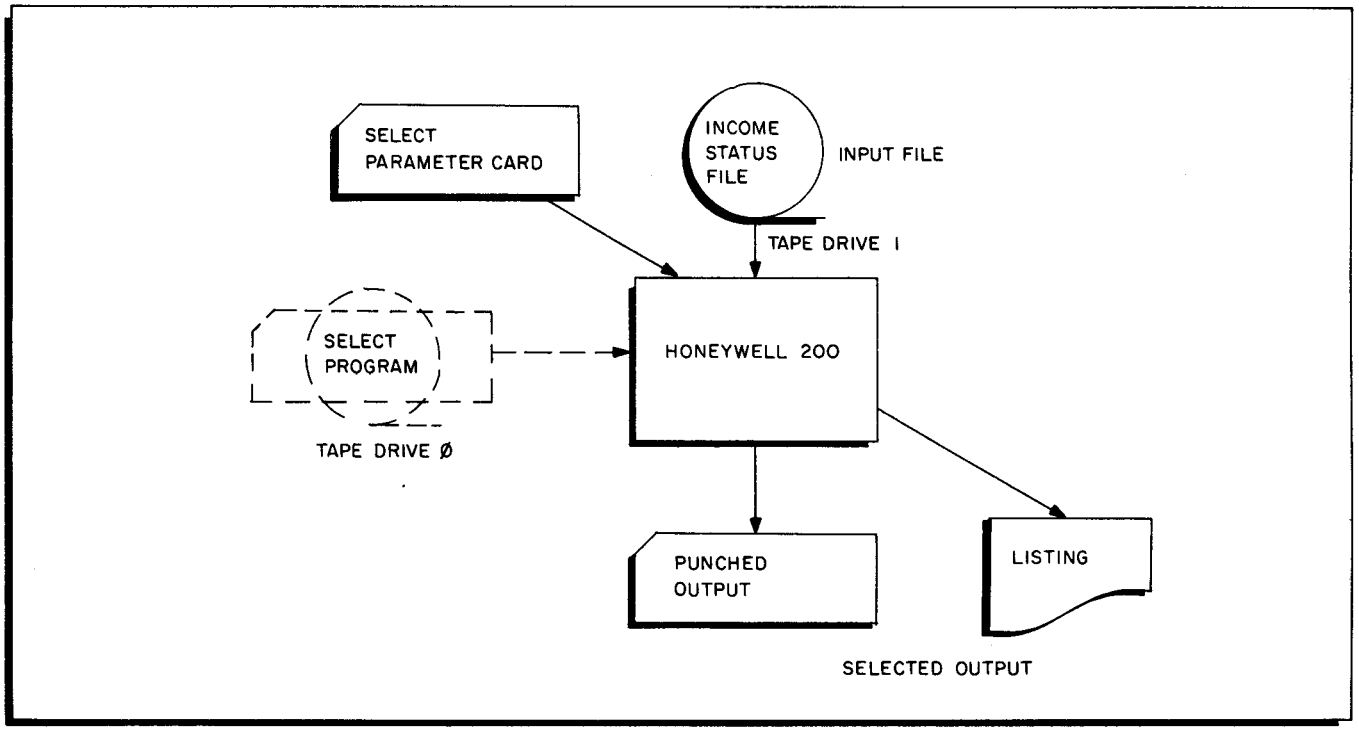


Figure 5-3. Select B Program; Selection by Count (Tape to Card) - Computer Setup

SELECTION BY LOCATION WITHIN GROUP (CARD TO TAPE)

Application

In a deck of cards representing the sales transactions for the month, the first card of each control group is a name and address header. It is desired to place this file on tape, but eliminate the header cards.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-4. Notice that the header cards are eliminated by indicating that the first card is to be selected from each control group. The key fields are region number (columns 8-10) and store code (columns 20-25). The OR condition (column 28) is assumed; i.e., a control break in either of the control fields constitutes the beginning of a new group.
2. Set up the run as shown in Figure 5-5. The selected output (i.e., the header cards) can be eliminated entirely by not specifying an output device in columns 7-8 of the parameter card.

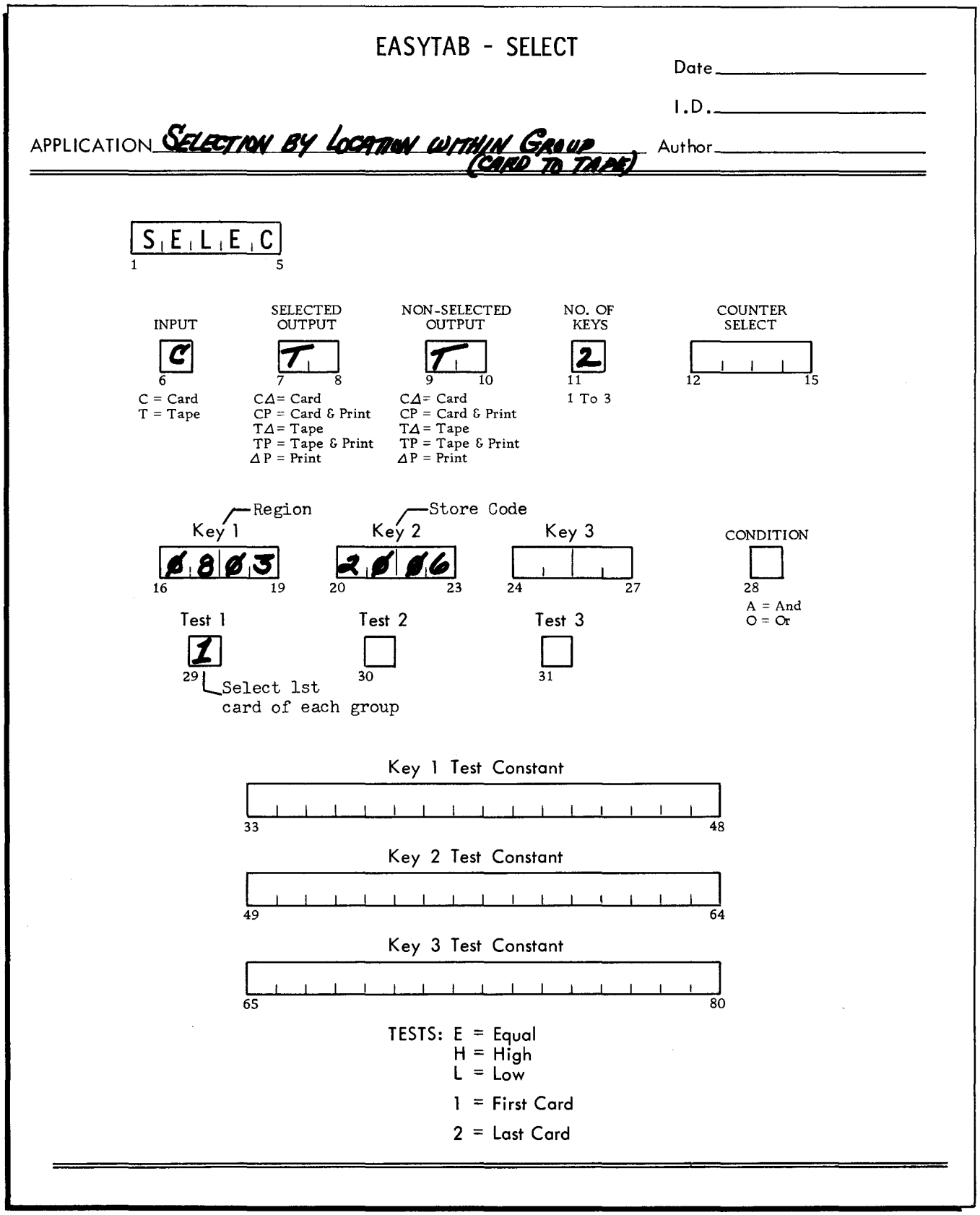


Figure 5-4. Select B Program; Selection by Location within Group (Card to Tape) - Parameter Card

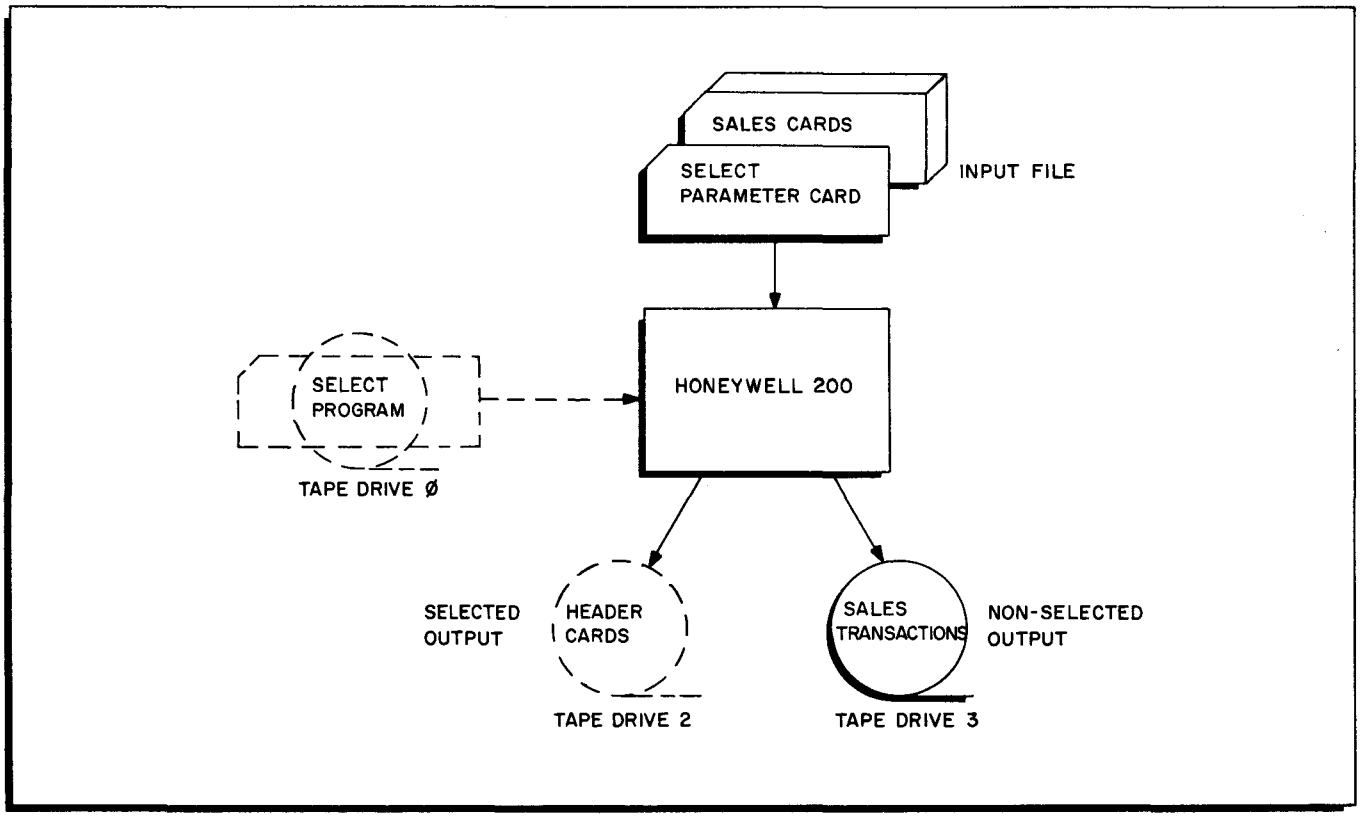


Figure 5-5. Select B Program; Selection by Location within Group (Card to Tape) - Computer Setup

SELECTION BY TEST

Application 1 - Single Field Test With Multiple Values

Whenever only one key field is being examined as a basis for card selection, the field can be tested for one, two, or three different values. For example, we might want to select all cards which have a coverage code of either 2300, 5614, or 7779 from an insurance subscriber file. The coverage code is located in columns 34-37. The insurance file is on tape and we need both a punched deck and a printed listing of all of the items containing any of these codes.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-6. Notice that the same key field definition (coverage code) is repeated in all three key fields. The three values to be used in the comparison are indicated below in the three fields reserved for test constants. The OR condition is specified in column 28 since an equal comparison to any one of the three values will satisfy the requirements for selection.
2. Set up the run as shown in Figure 5-7. The non-selected output tape file can be eliminated by not specifying an output device in columns 9-10.

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION Single Field Test (Tape to Card) Author _____

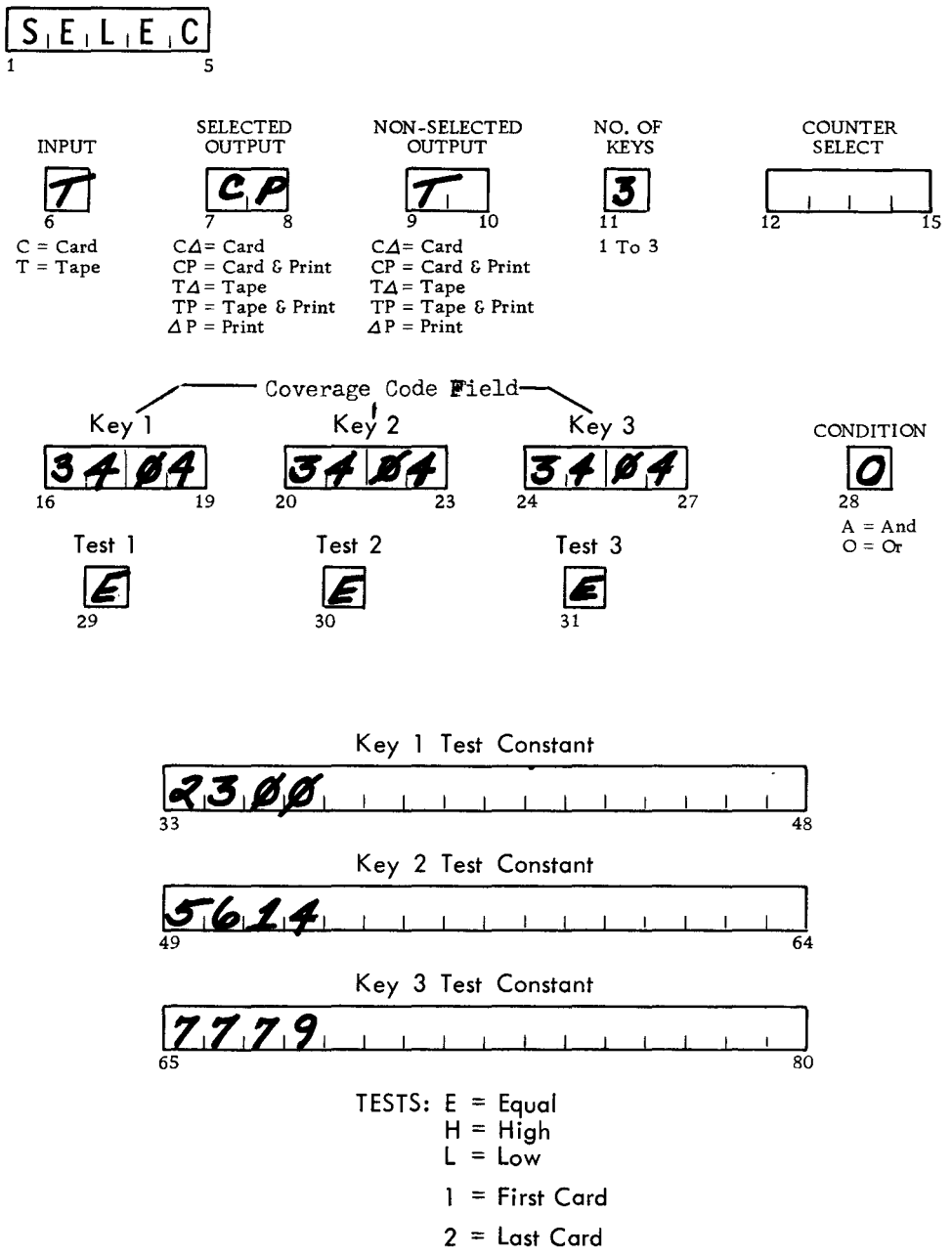


Figure 5-6. Select B Program; Selection by Test with Single Field Containing Multiple Values - Parameter Card

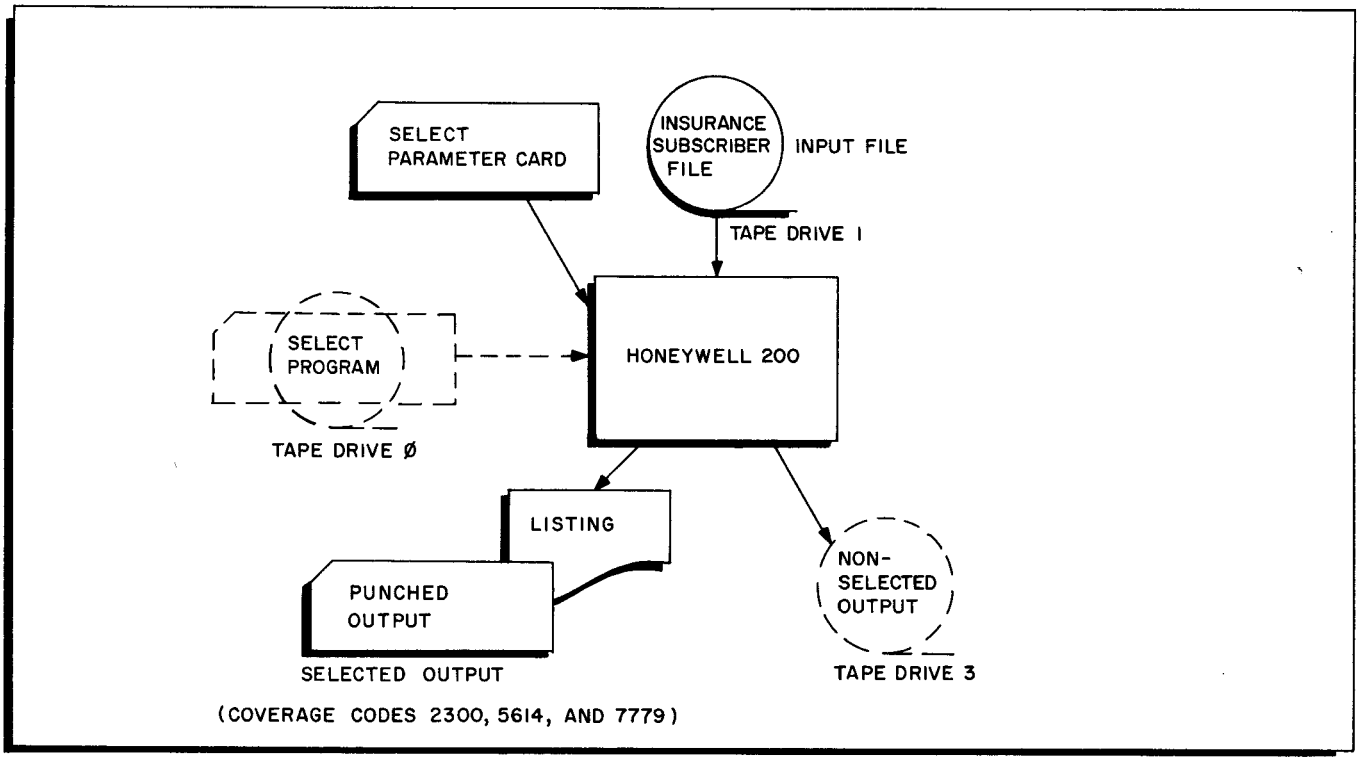


Figure 5-7. Select B Program; Selection by Test with Single Field Containing Multiple Values - Computer Setup

Application 2 - Multiple Fields (OR Condition)

Whenever the contents of more than one key field are being tested, two methods of testing can be performed: independent tests and dependent tests. In independent testing, if any of the key fields fulfill the condition tested for in that field the card is selected; in dependent testing, the contents of all the key fields indicated must satisfy the conditions tested in order for the card to be selected.

As an example of independent testing we might select all of the records in an auto claims file which contain either an "05" in the state code field (columns 25-26) or "DEPT01" in the source field (columns 65-70) or a value higher than 9000 in the limit field (columns 71-74). The auto claims input file is on tape. Both the selected and non-selected records are to be placed on tape along with a listing of the non-selected output.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-8.
2. Set up the computer run as shown in Figure 5-9.

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION MULTIPLE FIELDS (INDEPENDENT (OR) CONDITION) Author _____

SELEC
1 5

INPUT	SELECTED OUTPUT	NON-SELECTED OUTPUT	NO. OF KEYS	COUNTER SELECT
T	T	TP	3	
6	7 8	9 10	11	12 15
C = Card T = Tape	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	1 To 3	

Key 1 (State Code)	Key 2 (Source)	Key 3 (Limit)	CONDITION
2502	6506	7101	O
16 19	20 23	24 27	28

A = And
O = Or

Test 1	Test 2	Test 3
E	E	H
29	30	31

Key 1 Test Constant: 05 (33 48)

Key 2 Test Constant: DEPT01 (49 64)

Key 3 Test Constant: 9000 (65 80)

TESTS: E = Equal
H = High
L = Low

1 = First Card

2 = Last Card

Figure 5-8. Select B Program; Selection by Test with Multiple Fields (OR Condition) - Parameter Card

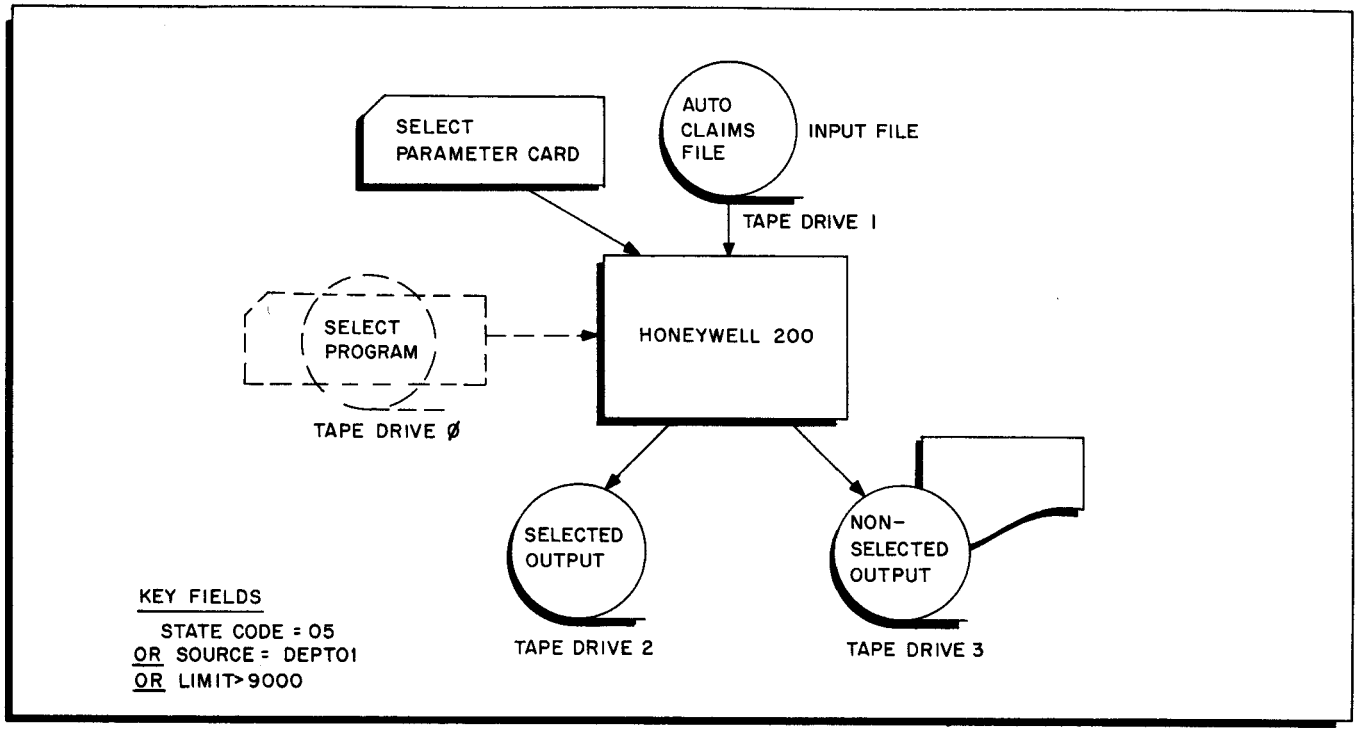


Figure 5-9. Select B Program; Selection by Test with Multiple Fields (OR Condition) - Computer Setup

Application 3 - Multiple Fields (AND Condition)

The dependent test, in which all key fields must satisfy the test which are applied to them, can be used in the following situation:

From an employee statistical file, the records for those employees fulfilling all of the following three requirements are to be selected and listed:

1. An income of under 7,000. (Income field - columns 60-66.)
2. Married with three or more dependents (Status field - column 7.)
3. Age over 35. (Age field - columns 40-41.)

The employee statistical file is on tape; the output is to be only the listing of the selected items.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-10.
2. Set up the computer run as shown in Figure 5-11.

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION MULTIPLE FIELDS (DEPENDENT (AND) CONDITION) Author _____

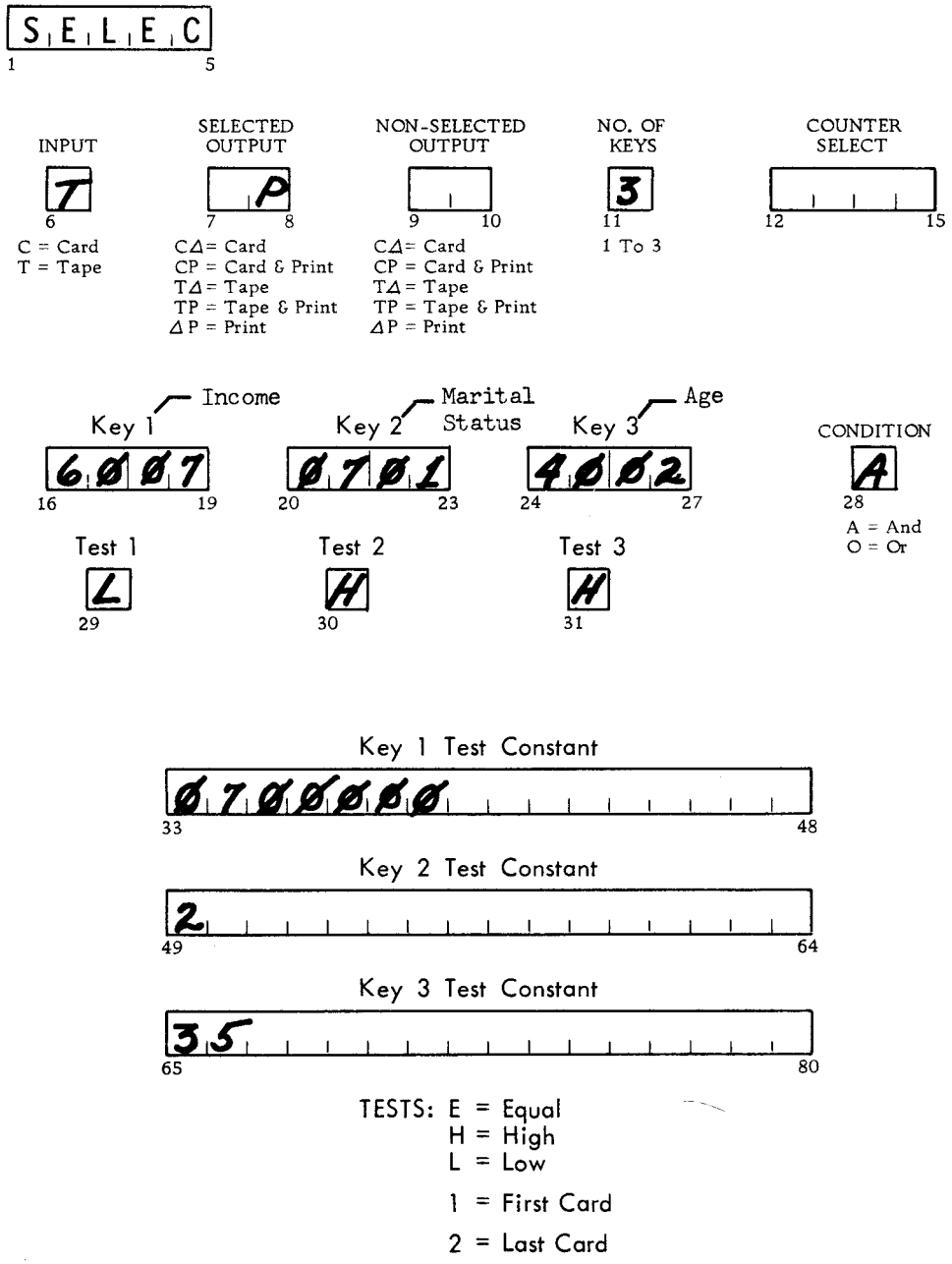


Figure 5-10. Select B Program; Selection by Test with Multiple Fields (AND Condition) - Parameter Card

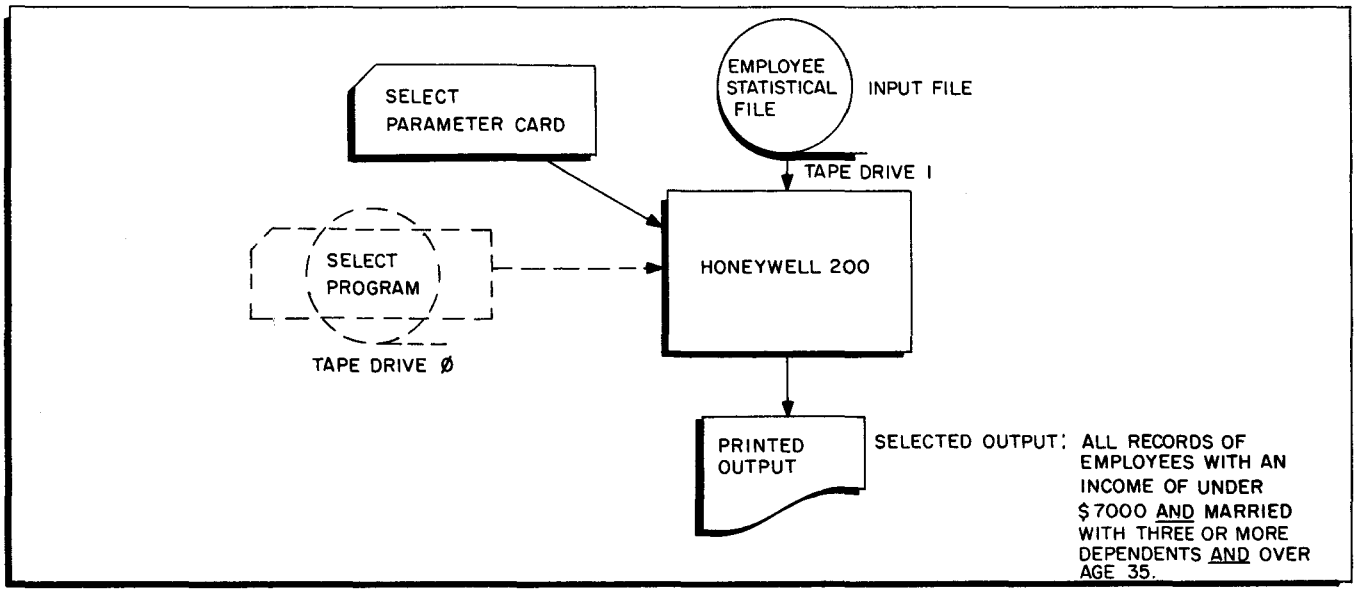


Figure 5-11. Select B Program; Selection by Test with Multiple Fields (AND Condition) - Computer Setup

Application 4 - Editing

Certain pre-editing of cards can be performed by the Select B program during the process of placing the cards on tape. The selection by test function can be used to test up to three fields for blanks, zero or non-zero balances, or certain ranges of values. Any cards failing one or more tests can be deleted as errors.

For example, in a deck of sales transactions the credit field (columns 25-30) should never have a zero balance (+0, -0, or unsigned 0). Errors are to be printed.

Preparation

1. Punch a Select B parameter card as shown in Figure 5-12.
2. Set up the computer run as shown in Figure 5-13.

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION SELECTION BY TEST: EDITING Author _____

SELEC
1 5

INPUT	SELECTED OUTPUT	NON-SELECTED OUTPUT	NO. OF KEYS	COUNTER SELECT
C	T	P	3	
6	7 8	9 10	11	12 15
C = Card T = Tape	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	CΔ = Card CP = Card & Print TΔ = Tape TP = Tape & Print ΔP = Print	1 To 3	

Credit Field

Key 1	Key 2	Key 3
2506	2506	2506
16 19	20 23	24 27

CONDITION: O (28) — A = And, O = Or

A card meeting any one of the conditions is to be selected as an error

Test 1	Test 2	Test 3
E	E	E
29	30	31

Key 1 Test Constant: 000000 (33 48)

Key 2 Test Constant: 000005 (49 64)

Key 3 Test Constant: 000010 (65 80)

TESTS: E = Equal
H = High
L = Low
1 = First Card
2 = Last Card

Figure 5-12. Select B Program; Selection by Test: Editing - Parameter Card

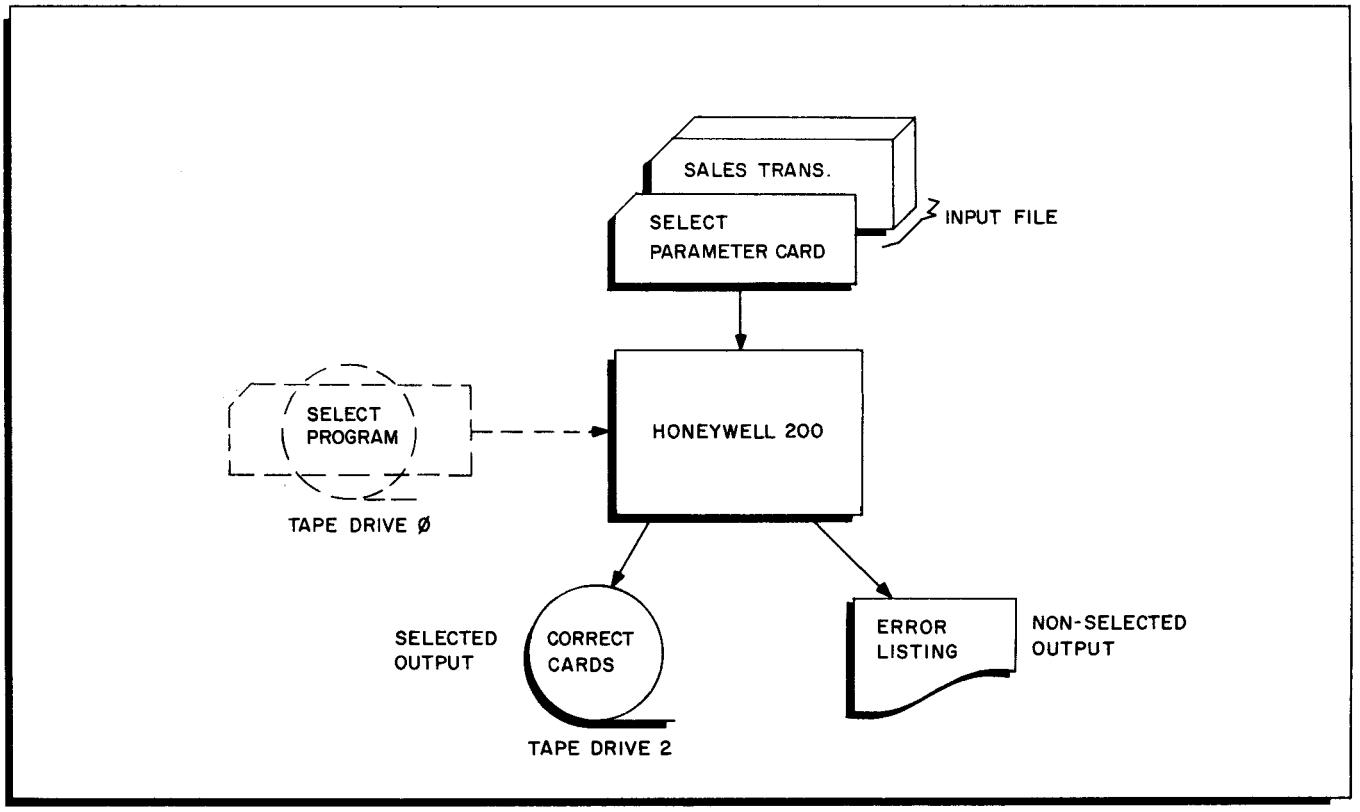


Figure 5-13. Select B Program; Selection by Test: Editing - Computer Setup

EASYTAB - SELECT

Date _____

I.D. _____

APPLICATION *CHECK SHEET* Author _____

S E L E C
1 5

INPUT (6)
C = Card
T = Tape

SELECTED OUTPUT (7 8)
CΔ = Card
CP = Card & Print
TΔ = Tape
TP = Tape & Print
ΔP = Print

NON-SELECTED OUTPUT (9 10)
CΔ = Card
CP = Card & Print
TΔ = Tape
TP = Tape & Print
ΔP = Print

NO. OF KEYS (11)
1 To 3

Must equal number of boxes filled in below. Counter select: leave blank.

COUNTER SELECT (12 15)

This option must be used alone.

Card reader/punch unit: only one card file can be specified.
Only one print file can be specified.

Check beginning position and length of each key; maximum length is 16.

Key 1 (16 19)
Key 2 (20 23)
Key 3 (24 27)

Test 1 (29)
Test 2 (30)
Test 3 (31)

Must be equal to "1" or "2" or E/H/L

CONDITION (28)
A = And
O = Or

A = All conditions must be satisfied.
O = One or more conditions must be satisfied.

Check length of constant against length of corresponding key.

Key 1 Test Constant (33 48)
Key 2 Test Constant (49 64)
Key 3 Test Constant (65 80)

TESTS: E = Equal
H = High
L = Low

1 = First Card

2 = Last Card

Figure 5-14. Select B Program Check List

SECTION VI

PERIO B PROGRAM

INTRODUCTION

The PERIO (PERipheral Input/Output) B program converts data from one media to another (punched cards to magnetic tape, magnetic tape to punched cards, or magnetic tape to printer), depending upon the setting of the SENSE switches.

The general setup for the program is shown in Figure 6-1.

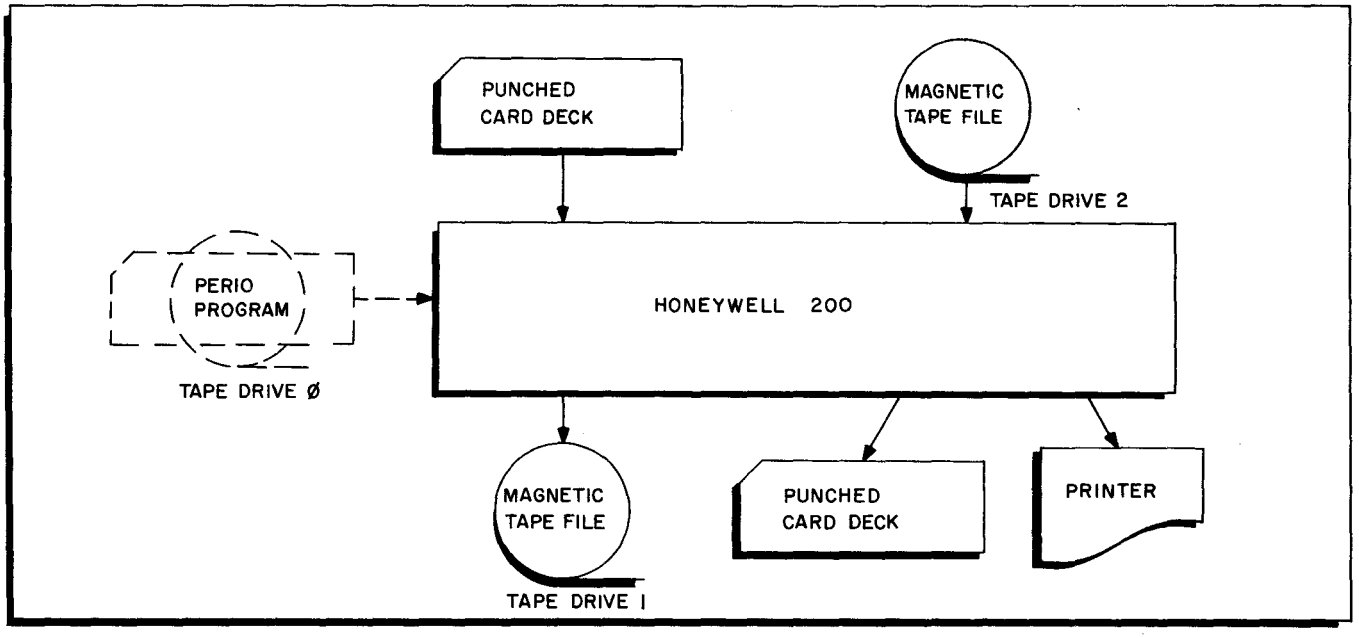


Figure 6-1. The PERIO B Program

A complete coverage of the PERIO B Program and its operating procedures can be found in Section VIII of the Easytab Utility Programs Software Manual, File Number 206.

SPECIFICATIONS

1. The input file(s) may be either in the form of punched cards or magnetic tape (records blocked by two). If the input file is on punched cards, the output is on magnetic tape; if the input file is on tape, the output can be either on punched cards or on the printer. In the case of multiple operations, only one file may be on punched cards unless a separate card reader and card punch are available.
2. The four SENSE switches can be set to direct one of the following functions or combinations of functions to take place:

a. Convert punched cards to magnetic tape.

b. Convert magnetic tape to punched cards.

c. Print the data from a magnetic tape file.

d. Convert punched cards to magnetic tape and, at the same time, print the data from another magnetic tape file.

e. Convert a magnetic tape file to punched cards and, at the same time, print the data from another magnetic tape file.

PUNCHED CARD TO MAGNETIC TAPE CONVERSION

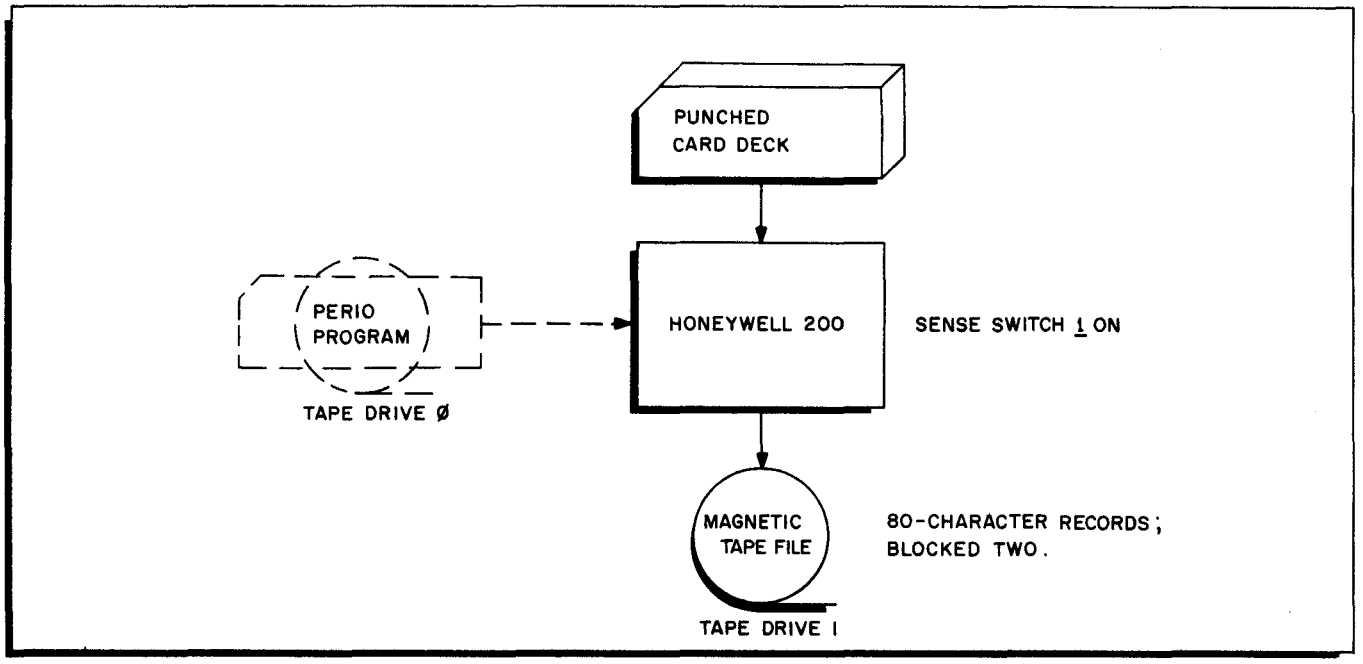


Figure 6-2. PERIO B Program; Punched Card to Magnetic Tape - Setup

Placing a deck of punched cards onto magnetic tape is accomplished via the PERIO B program by setting SENSE switch 1 ON. The cards are written, unchanged, onto the tape in blocks containing two 80-character card images each.

MAGNETIC TAPE TO PUNCHED CARD CONVERSION

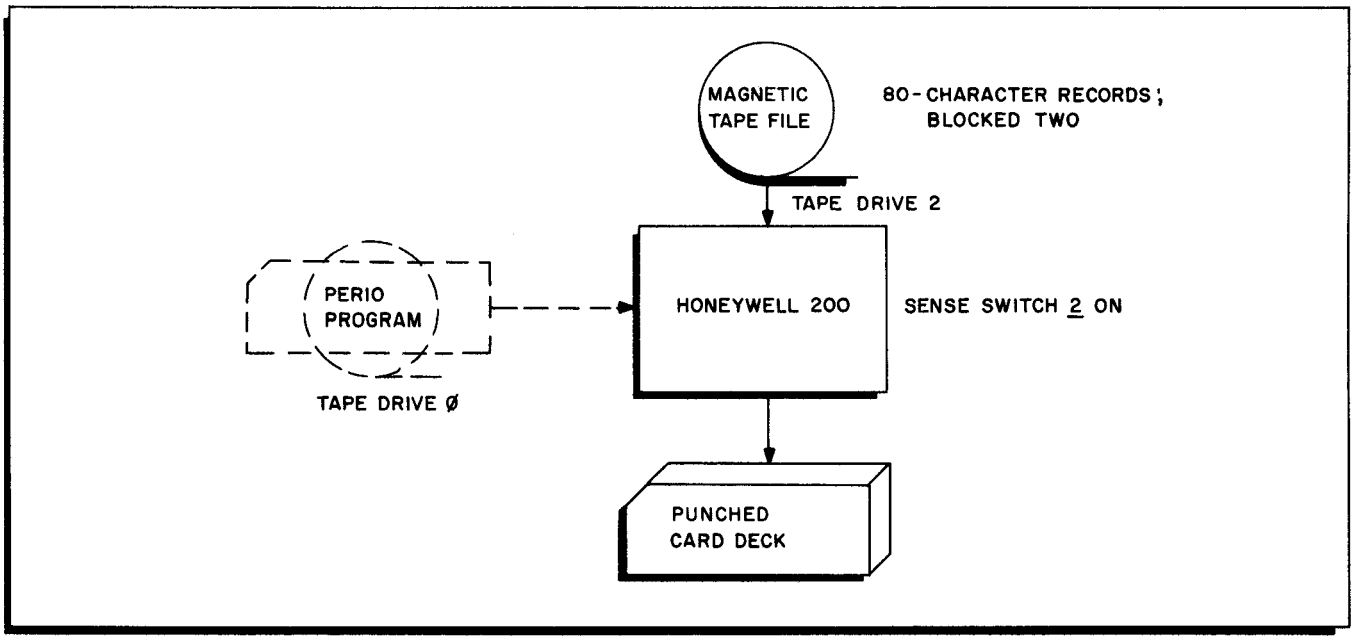


Figure 6-3. PERIO B Program; Magnetic Tape to Punched Card - Setup

Punching out the card images stored on a magnetic tape file onto a deck of cards is accomplished via the PERIO B program by setting SENSE switch 2 ON. The tape to be converted must contain 80-character card images blocked by two.

MAGNETIC TAPE TO PRINTER

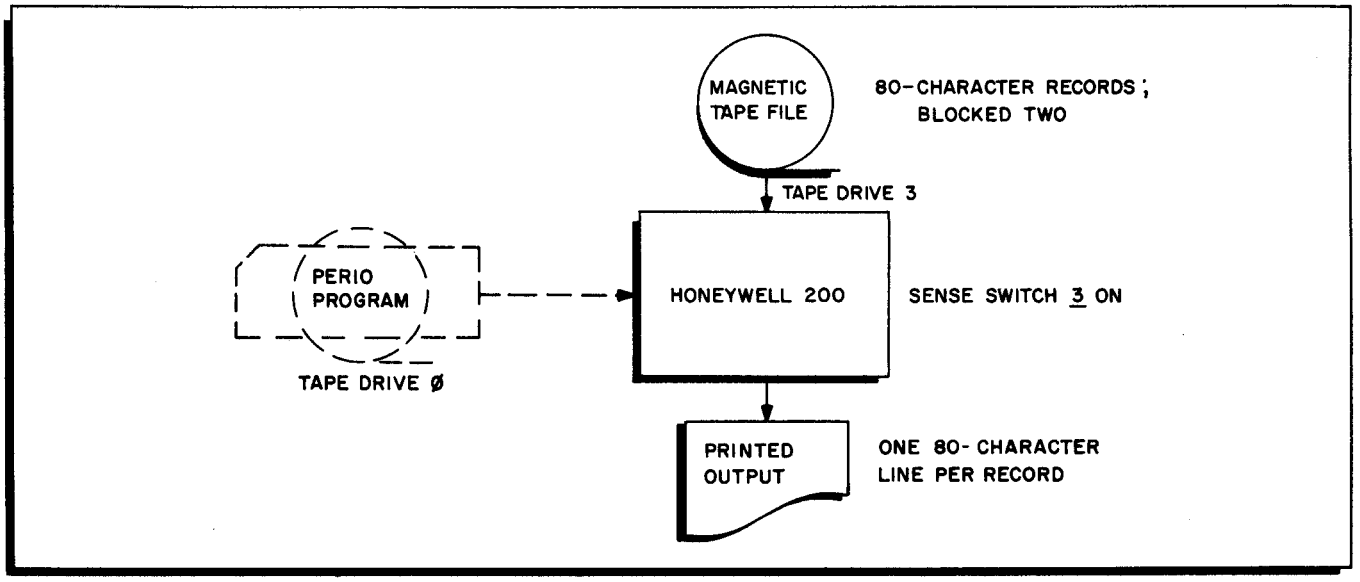


Figure 6-4. PERIO B Program; Magnetic Tape to Printer - Setup

Obtaining a printout of all of the card images stored on a magnetic tape file is accomplished via the PERIO B program by setting SENSE switch 3 ON. An 80-character line of unedited information is printed for each card stored on the tape. The input tape must contain 80-character card images blocked by two.

MULTIPLE OPERATIONS

In previous pages, we have covered the three basic operations of the PERIO B program: card to tape, tape to printer, and tape to card conversion. Each of these three operations is selected by setting one of the SENSE switches to the ON position. In the next several examples you will see that by setting more than one SENSE switch you can cause several of these operations to be performed in one run.

#1 - Card to Tape and Tape to Printer

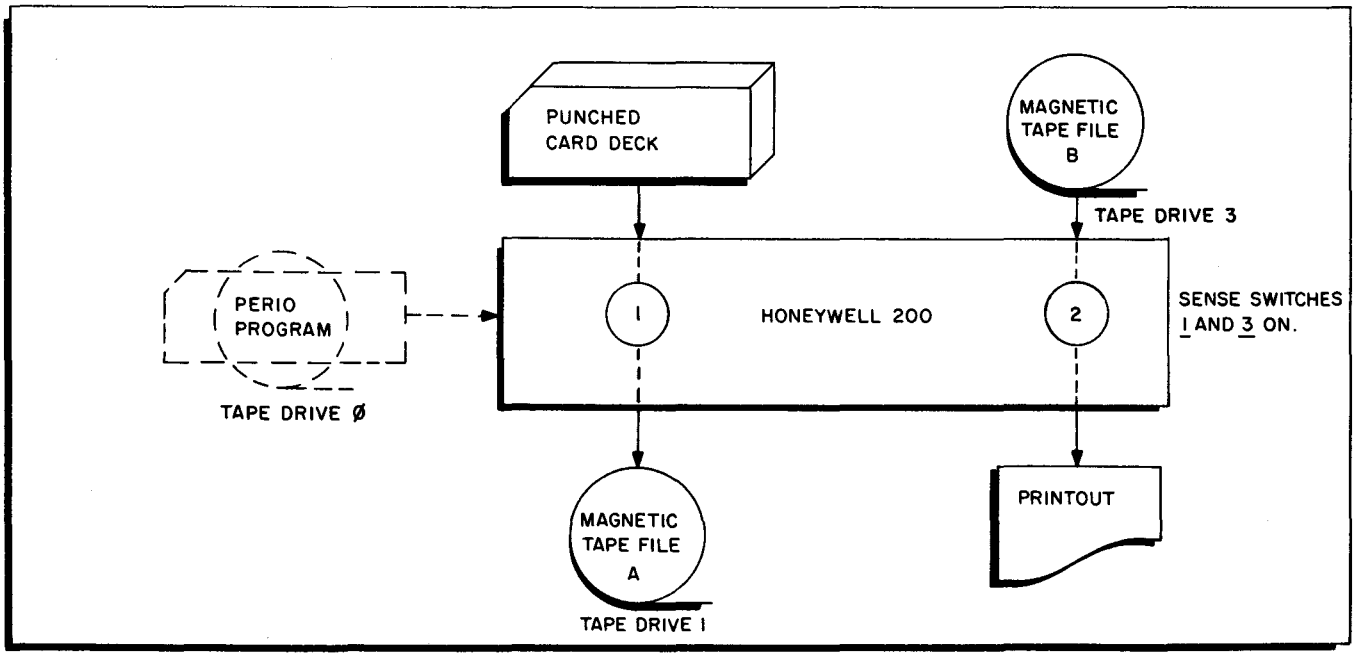


Figure 6-5. PERIO B Program; Multiple Operations #1

The setup shown in Figure 6-5 could be used if you should happen to have both a punched card deck to be converted to tape and another tape file to be printed. By setting SENSE switches 1 and 3 ON, both operations can be performed together.

#2 - Tape to Card and Tape to Printer

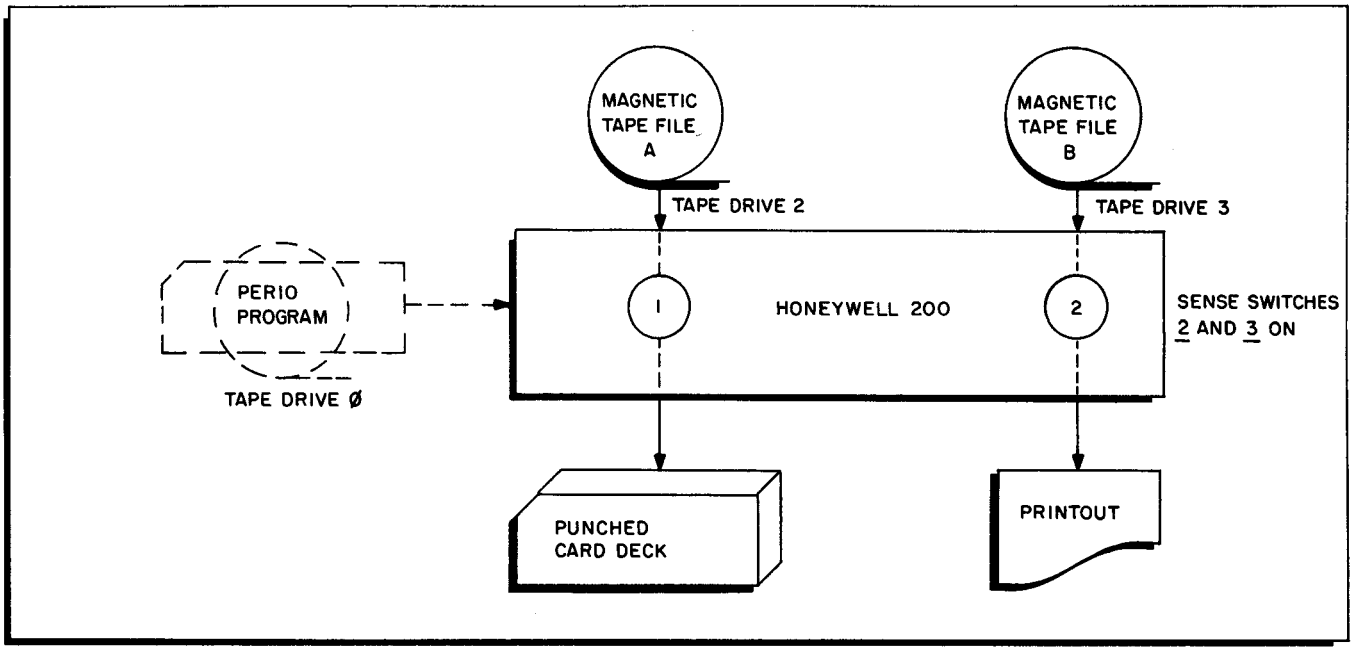


Figure 6-6. PERIO B Program; Multiple Operations #2

The setup in Figure 6-6 can be used whenever you wish to punch out the contents of one tape file and print the contents of another. By setting both SENSE switch 2 and SENSE switch 3 ON, both operations can be performed together.

SECTION VII

REPRODUCE B PROGRAM

INTRODUCTION

The Reproduce B program performs all of the functions of the reproducer:

1. 80-80 REPRODUCING - A direct copy of one or more fields from an input file into the same relative positions on the output file.
2. OFFSET REPRODUCING - A direct copy of one or more fields of an input file into different relative positions on the output file.
3. EMITTING - The characters punched in a parameter card following the Reproduce director card will be emitted into corresponding positions in the output file.

In addition, a fourth option can be specified:

4. NUMBERING - The input file is copied onto the output file with the output items being numbered, either consecutively or by some specified increment. This item number is emitted into some selected field in each output item.

The general setup for the program is shown in Figure 7-1.

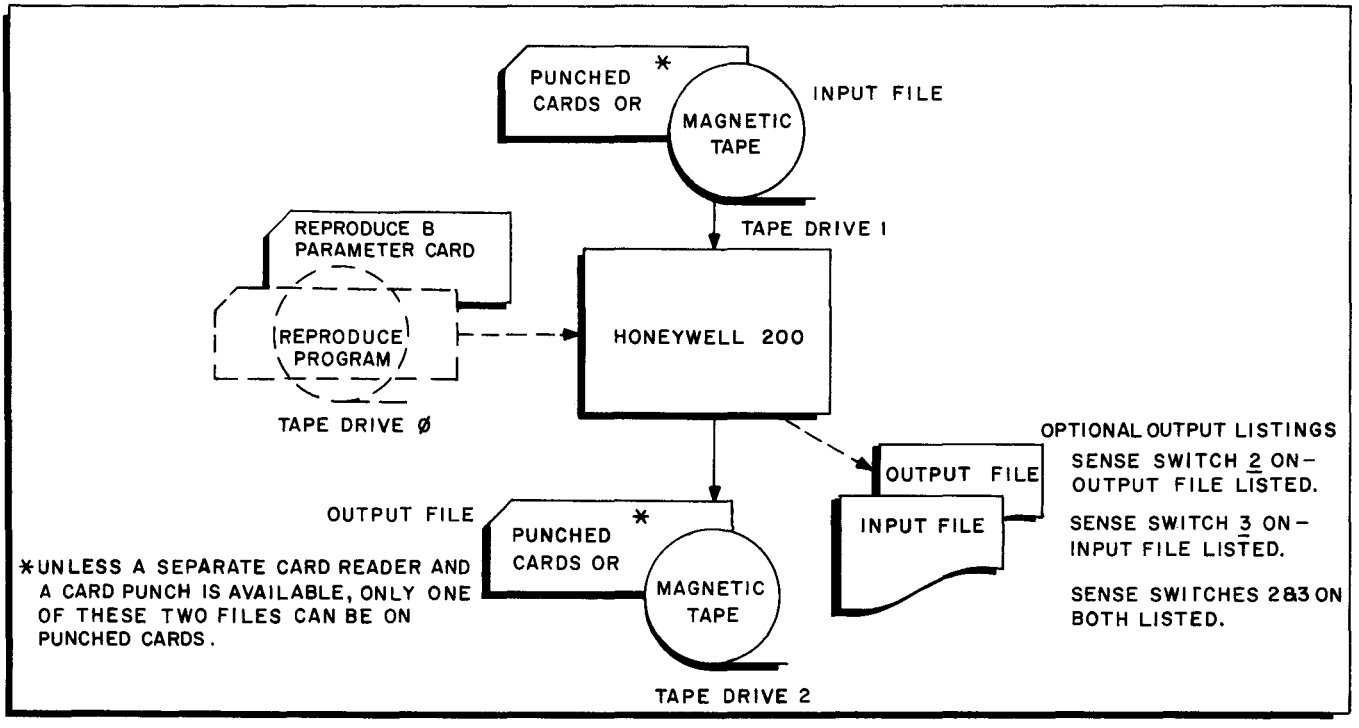


Figure 7-1. The Reproduce B Program

A complete coverage of the Reproduce B program, including the parameter cards and operating procedures, can be found in Section V of the Easytab Utility Programs Software Manual, File Number 206.

SPECIFICATIONS

1. There are three possible combinations of input/output media with the Type 214-2 Reader/Punch: the input file can be a punched card deck and the output file magnetic tape, the input file can be magnetic tape and the output file punched cards, or both can be on magnetic tape. Either file can be printed by setting SENSE switch 2 (output) or SENSE switch 3 (input) ON.

2. The Reproduce B parameter card is punched according to the function or combination of functions desired:

   a. 80-80 Reproducing - If the entire input card or card image is to be reproduced unchanged onto the output file, one of two methods can be used:

      Method A: Punch the required information into columns 1-7 of the Reproduce parameter card; leave column 8 blank. Run program with SENSE switch 4 ON.

      Method B: Punch the required information into columns 1-7; punch a "1" into column 8; punch "0180" into columns 17-20 and columns 49-52. Run program with SENSE switch 4 OFF.

   b. Combined Reproducing and Offset Reproducing - The input card or card image can be subdivided into a maximum of eight fields. The limits of each field are punched into the portion of the director card entitled input fields (columns 17-48). If any portion of the input card is not to be reproduced, its definition is omitted.

      The eight corresponding output field keys (columns 49-80) are used to indicate where each of the input fields is to be punched in the output item.

   c. Emitting - The emitting of one or more values into the output items can be accomplished by punching a "C" in column 9 and by following the Reproduce parameter card by an emit constant card. The contents of any non-blank columns in the emit constant card will be reproduced into the corresponding positions of each output item. However, these characters will not overwrite any data which would normally be punched in those positions as indicated by the output fields in the director card.

   d. Numbering - Columns 10-11 indicate the beginning column position of the numbering field in the output item; columns 12-13 indicate the size of this field; columns 14-16 contain the increment to be added to obtain the number to be punched in each consecutive output item. If 14-16 contain blanks, an increment of 1 is assumed.

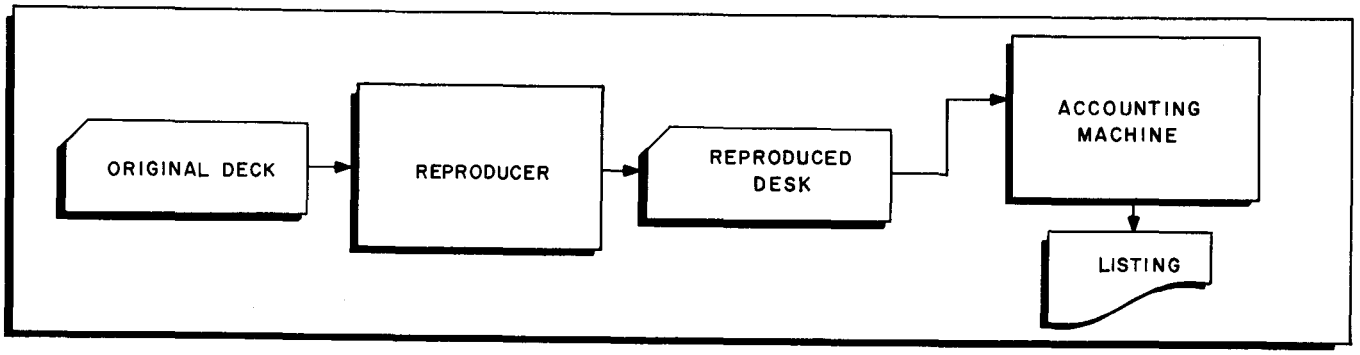


Figure 7-2. Straight 80-80 Reproducing with Listing of Reproduced Deck - Tab Setup

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION STRAIGHT 80-80 REPRODUCE (CARD TO TAPE) Author _____

R E P R O
1 5

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
C	T		
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Number
Start # Char Increment
10 12 14 16

INPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
17 20	21 24	25 28	29 32	33 36

Key 6	Key 7	Key 8
37 40	41 44	45 48

OUTPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
49 52	53 56	57 60	61 64	65 68

Key 6	Key 7	Key 8
69 72	73 76	77 80

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

1 5 10 15 20
21 25 30 35 40
41 45 50 55 60
61 65 70 75 80

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-3. Reproduce B Program; Straight 80-80 Reproduce (Card to Tape) - Parameter Card

STRAIGHT 80-80 REPRODUCE (CARD TO TAPE) WITH LISTING

Application

One common procedure in a tab environment is to reproduce a deck of cards as input to succeeding runs. The reproduced deck might then be listed on an accounting machine to obtain a permanent record of the deck. Figure 7-2 shows this operation.

Under the computer system, the card deck might be "reproduced" onto magnetic tape. The resultant tape file can then be used as a fast medium of input to following computer runs. Through the use of the Reproduce B program, this conversion can be performed and a listing of the output file obtained (see Figure 7-4).

Preparation

1. Punch a Reproduce B parameter card as shown in Figure 7-3.
2. Set up run as shown in Figure 7-4. Set SENSE switches 2 and 4 ON.

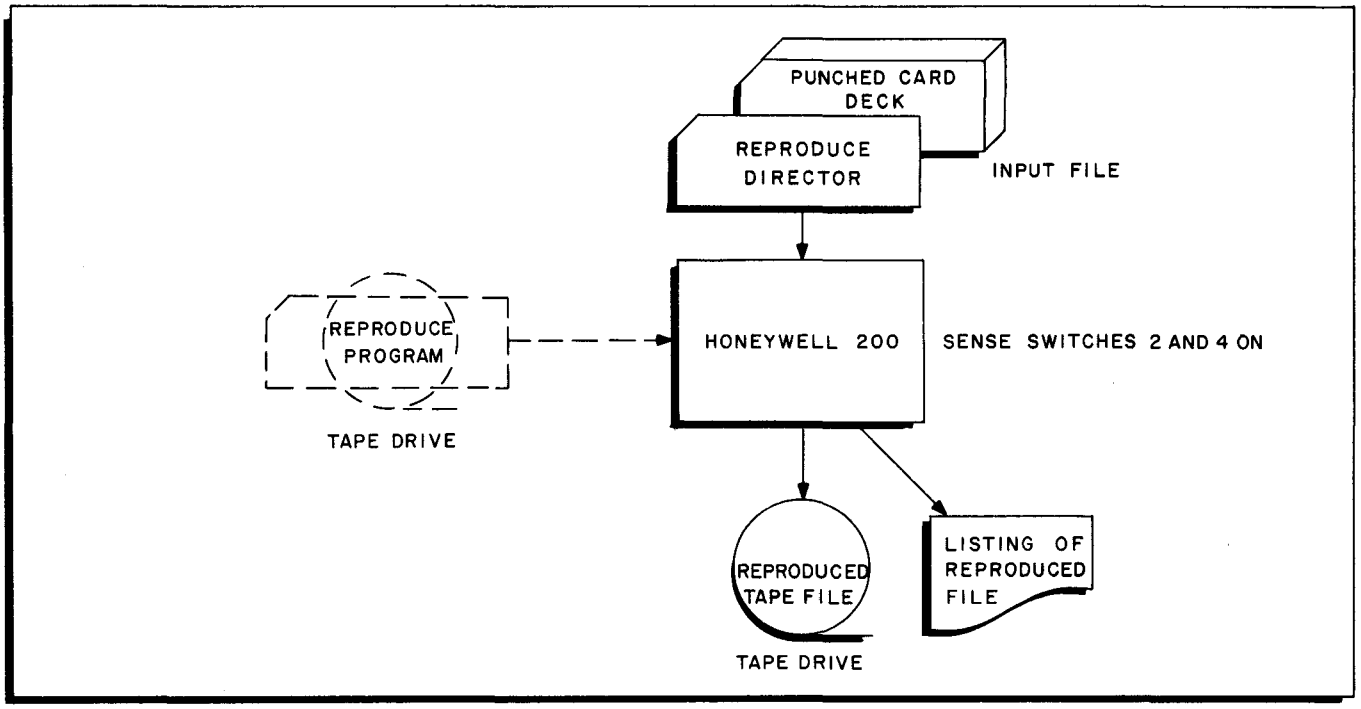


Figure 7-4. Reproduce B Program; Straight 80-80 Reproduce (Card to Tape) with Listing-Computer Setup

REPRODUCING AND OFFSET REPRODUCING - (TAPE TO CARD)

Application

Each month the product master file must be reproduced and listed as shown in Figure 7-5, in order to maintain a tub file of products available.

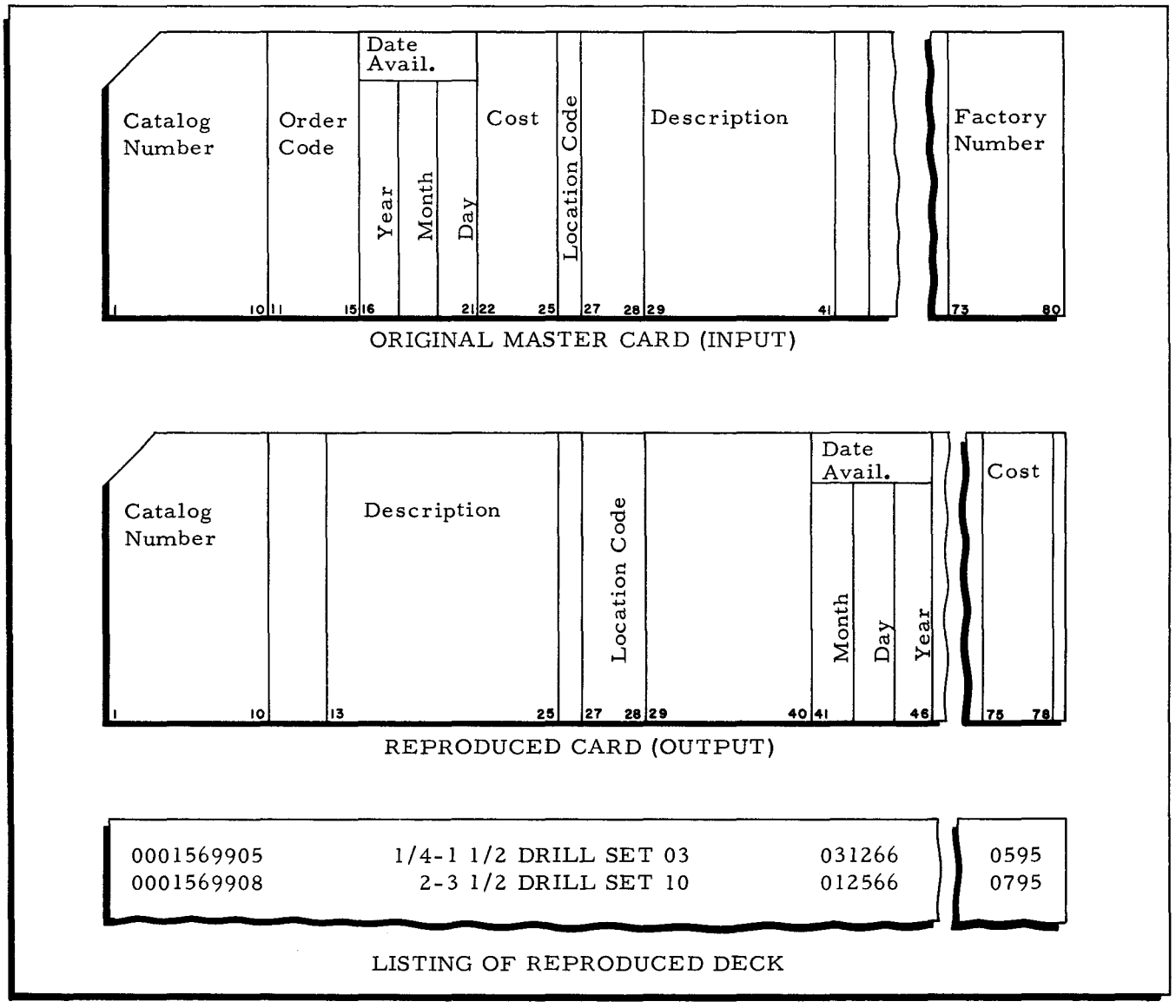


Figure 7-5. Reproduce B Program; Reproducing and Offset Reproducing - Record Layouts

Under the tabulating system the operation involved resembled that shown in Figure 7-2.

Under the computer system, the product master file is on tape. A card deck and a listing identical to those produced under the tabulating system is desired.

Preparation

1. Punch a Reproduce B parameter card as shown in Figure 7-6.
2. Set up run as shown in Figure 7-7. Turn SENSE switch 2 ON.

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION Reproducing & Offset Reproducing Author _____

REPRO
1 5

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
T	C	6	
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Number: Start | # Char | Increment
10 12 14 16

INPUT FIELDS

Key 1 Catalog Number	Key 2 Year	Key 3 Month, Day	Key 4 Cost	Key 5 Location Code
0110	1602	1804	2204	2702
17 20	21 24	25 28	29 32	33 36

Key 6 Description	Key 7	Key 8
2913		
37 40	41 44	45 48

OUTPUT FIELDS

Key 1 Catalog Number	Key 2 Year	Key 3 Month, Day	Key 4 Cost	Key 5 Location Code
0110	4502	4104	7504	2702
49 52	53 56	57 60	61 64	65 68

Key 6 Description	Key 7	Key 8
1313		
69 72	73 76	77 80

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

1 5 10 15 20
21 25 30 35 40
41 45 50 55 60
61 65 70 75 80

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-6. Reproduce B Program; Reproducing and Offset Reproducing (Tape to Card) - Parameter Card

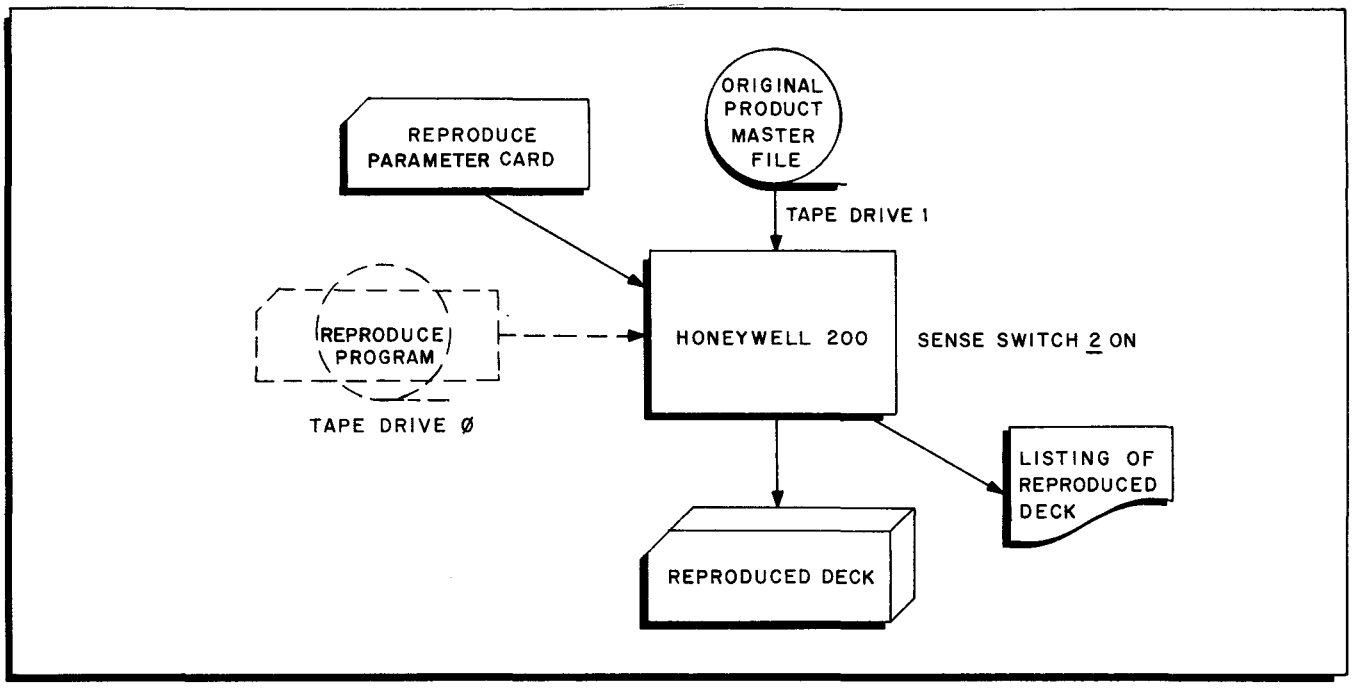


Figure 7-7. Reproduce B Program; Reproducing and Offset Reproducing (Tape to Card) - Computer Setup

STRAIGHT REPRODUCING WITH EMITTING (CARD TO TAPE)

Application

The example on page 7-4 describes an application requiring the 80-80 reproduce function. Assume that in addition to placing the punched cards on tape the current date must be emitted into columns 75-80.

Preparation

In this instance, where emitting must be performed in addition to reproducing, method B (see page 7-2) must be used; under method A the emit card would be ignored.

1. Punch a Reproduce parameter card as shown in Figure 7-8.
2. Set up the run as shown in Figure 7-9. Set SENSE switch 2 ON to obtain a listing of the reproduced output.

OFFSET REPRODUCING WITH EMITTING (TAPE TO CARD)

Application

The inventory master file must be copied, with the emitted information indicated, as shown in Figure 7-10.

Under the computer system, the inventory master file is on magnetic tape.

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION STRAIGHT REPRODUCING WITH EMITTING Author _____

R E P R O
1 5

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
C	T	1	C
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Number
Start # Char Increment
10 12 14 16

INPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
Ø174				
17 20	21 24	25 28	29 32	33 36

Key 6	Key 7	Key 8
37 40	41 44	45 48

OUTPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
Ø174				
49 52	53 56	57 60	61 64	65 68

Key 6	Key 7	Key 8
69 72	73 76	77 80

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

1 5 10 15 20

21 25 30 35 40

41 45 50 55 60

061 65 70 75 80 031266

Assume current date is March 12, 1966.

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-8. Reproduce B Program; Straight Reproducing with Emitting (Card to Tape) - Parameter Card

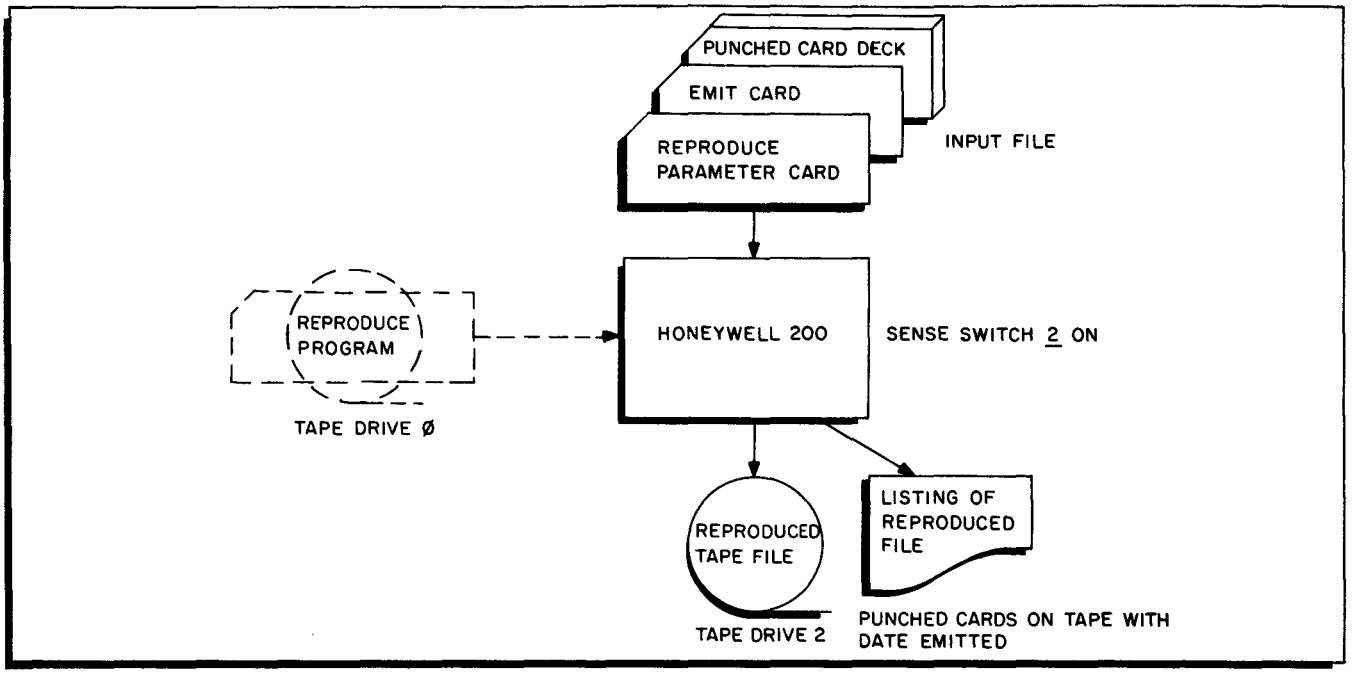


Figure 7-9. Reproduce B Program; Straight Reproducing with Emitting (Card to Tape) - Computer Setup

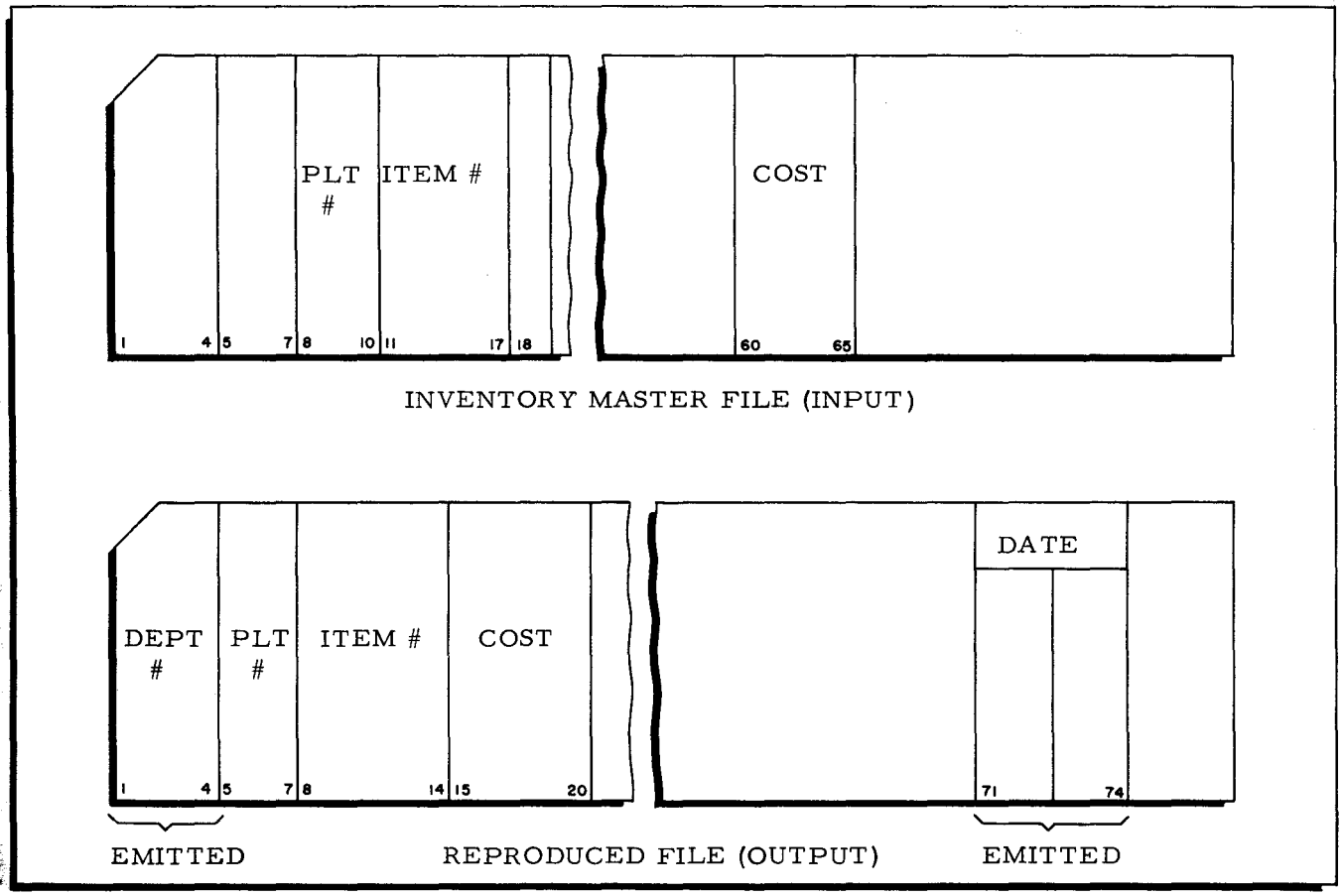


Figure 7-10. Reproduce B Program; Offset Reproducing with Emitting (Tape to Card) - Record Layouts

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION Offset Reproducing with Emitting Author _____

R E P R O
1 5

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
T	C	2	C
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Number: Start | # Char | Increment

10 12 14 16

INPUT FIELDS

Key 1 (Plt #, Item #): Ø 8 1 Ø — 17 20
Key 2 (Cost): 6 Ø Ø 6 — 21 24
Key 3: 25 28
Key 4: 29 32
Key 5: 33 36
Key 6: 37 40
Key 7: 41 44
Key 8: 45 48

OUTPUT FIELDS

Key 1 (Plt #, Item #): Ø 5 1 Ø — 49 52
Key 2 (Cost): 1 5 Ø 6 — 53 56
Key 3: 57 60
Key 4: 61 64
Key 5: 65 68
Key 6: 69 72
Key 7: 73 76
Key 8: 77 80

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

Department # 0125 is to be emitted: Ø 1 2 5 — 1 5 10 15 20

21 25 30 35 40

41 45 50 55 60

The date "0566" is to be emitted: Ø 5 6 6 — 61 65 70 75 80

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-11. Reproduce B Program; Offset Reproducing with Emitting (Card to Tape) - Parameter Card

A listing of the input inventory master file is desired.

Preparation

1. Punch a Reproduce B parameter card and an emit constant card as shown in Figure 7-11.
2. Set up the run as shown in Figure 7-12. Turn SENSE switch 3 ON to obtain a listing of the input file.

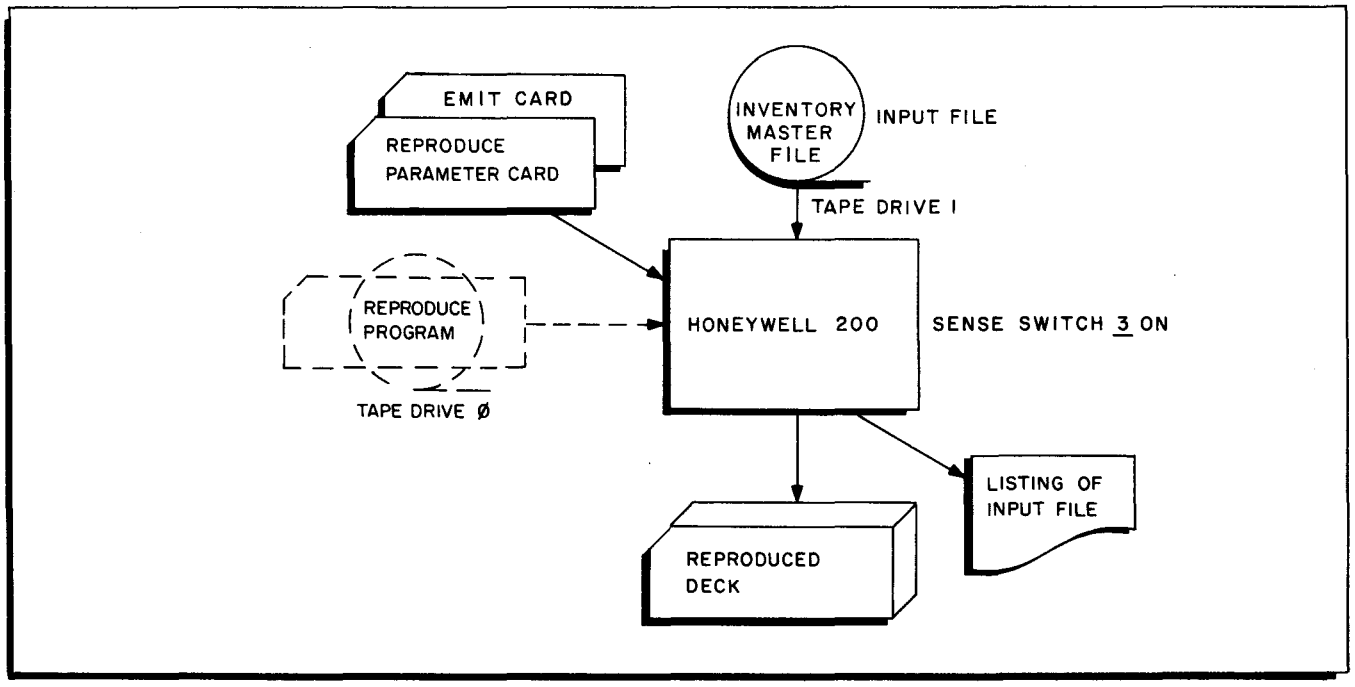


Figure 7-12. Reproduce B Program; Offset Reproducing with Emitting (Tape to Card) - Computer Setup

SEQUENTIAL NUMBERING (CARD TO TAPE)

Application

An input deck of sales transaction cards is to be placed on tape and a sequential transaction number is to be assigned to each item. The transaction number is to be placed into columns 1-5 of each output item.

Preparation

1. Punch a Reproduce B parameter card as shown in Figure 7-13. The increment field (columns 14-16) is filled with "001" whenever consecutive numbering is desired.
2. Set up the run as shown in Figure 7-14.

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION SEQUENTIAL NUMBERING (CARD TO TAPE) Author _____

R E P R O
1 5

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
C	T		
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Number

Start	# Char	Increment
01	05	001
10	12	14 16

INPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
17 20	21 24	25 28	29 32	33 36

Key 6	Key 7	Key 8
37 40	41 44	45 48

OUTPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
49 52	53 56	57 60	61 64	65 68

Key 6	Key 7	Key 8
69 72	73 76	77 80

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

1 5 10 15 20

21 25 30 35 40

41 45 50 55 60

61 65 70 75 80

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-13. Reproduce B Program; Sequential Numbering (Card to Tape) - Parameter Card

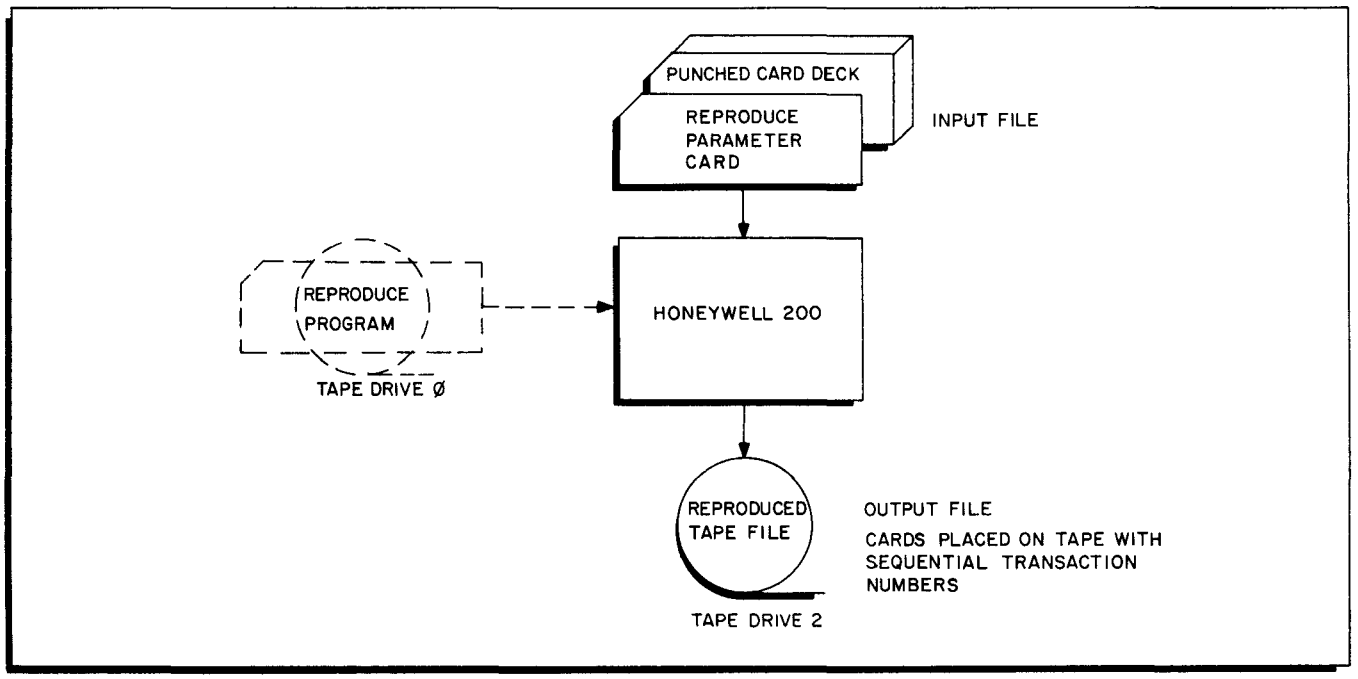


Figure 7-14. Reproduce B Program; Sequential Numbering (Card to Tape) - Computer Setup

EASYTAB - REPRODUCE

Date _____

I.D. _____

APPLICATION *CHECK SHEET* Author _____

R E P R O
1 5

Must equal number of keys filled in below.

INPUT	OUTPUT	NO. OF KEYS	CONTINUE
6	7	8	9
C = Card T = Tape	C = Card T = Tape	1 to 8	C = Card 2 Present

Contains "C" if emitting is to be performed.

Card reader/punch unit: only one card file can be specified.

Number
Start # Char Increment
10 12 14 16

INPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
17 20	21 24	25 28	29 32	33 36

Key 6	Key 7	Key 8
37 40	41 44	45 48

OUTPUT FIELDS

Key 1	Key 2	Key 3	Key 4	Key 5
49 52	53 56	57 60	61 64	65 68

Key 6	Key 7	Key 8
69 72	73 76	77 80

Check beginning position & length of each key. Lengths of corresponding keys must be equal (e.g., col. 19-20 = 51-52). Length must be in range 01-80.

CARD TWO - If CC9 of Card 1 equals "C" this card must be present.

1 5 10 15 20
21 25 30 35 40
41 45 50 55 60
61 65 70 75 80

Check that emitted constants and key fields specified above do not occupy the same columns.

Characters indicated in Card Two will be emitted into the corresponding positions in the Output Card or Card Image.

Figure 7-15. Reproduce B Program Check List

SECTION VIII

ALTER B PROGRAM

INTRODUCTION

The Alter B program performs those file updating activities, such as filing cards, removing cards, and replacing cards, which are most often accomplished manually in a tab installation. Alter should be used only when a small number of such changes is to be made. The program is capable of performing any or all of these functions during one pass of the tape file being updated. The general setup of the run is shown in Figure 8-1. The programmer indicates which of these operations are to be executed and provides other information to the Alter program through an Alter parameter card and one or more Alter director cards. A complete coverage of these cards and the operational procedures involved can be found in Section VII of the Easytab Utility Programs Software Manual, File Number 206.

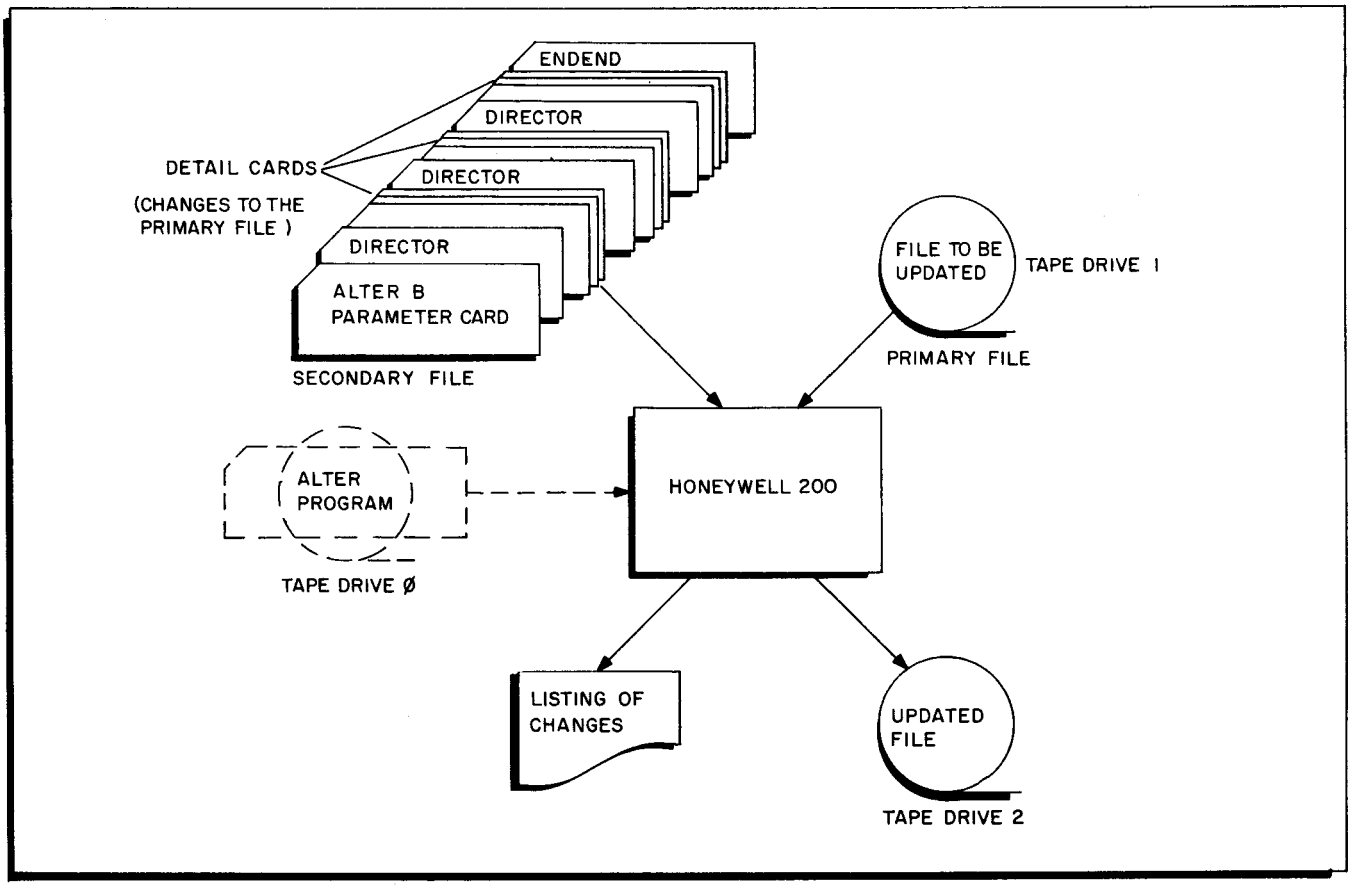


Figure 8-1. The Alter B Program

SPECIFICATIONS

1. Both the primary input file (the file being updated) and the secondary input file (the changes to be made to the primary file) must be in the same sequence (either ascending or descending). A maximum of eight key fields is allowed and they must be located in the same relative positions within the records of both files.
2. The appropriate Alter B directors must be inserted into the data card deck (secondary file) to indicate whether the data card or group of data cards which follow are to be inserted (INSERT director), deleted (DELETE director), or substituted (REPLACE director).
3. An Alter B parameter card, giving certain information about the files such as location of key fields, precedes the card deck and an ENDEND card terminates the card deck.

INSERT

Application

We have a sales master file which must be updated by inserting a new master record for the few new salesmen whom we have added to our staff during the past month. The sales master file is in order by region (major), territory (intermediate), and salesman number (minor), and is in ascending order. The record layout is shown in Figure 8-2.

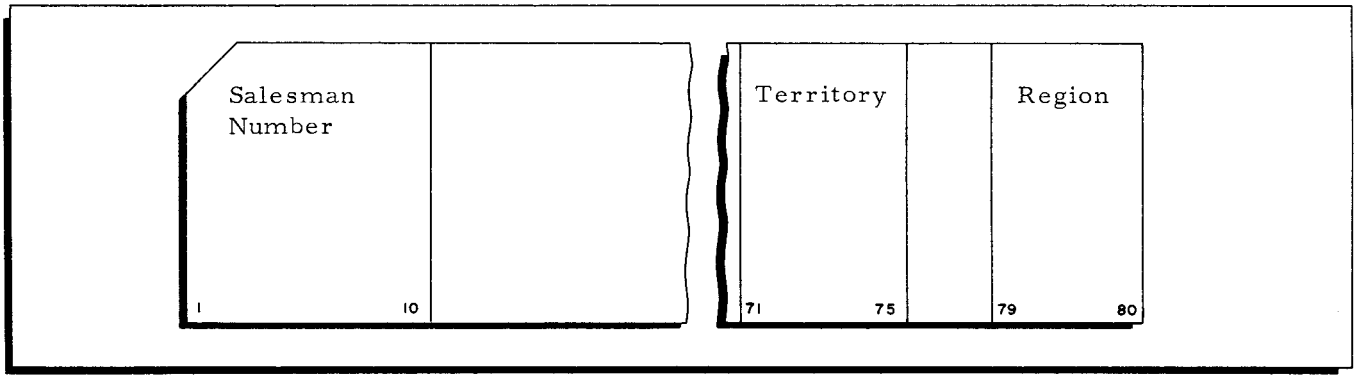


Figure 8-2. Alter B Program; INSERT - Record Layout

Preparation

1. Punch a master card for each salesman hired. Arrange cards in order by key fields (Major: region; intermediate: territory; minor: salesman number).
2. Punch an Alter card, an INSERT director, and an ENDEND card (see Figure 8-3).
3. Set up run as shown in Figure 8-4.

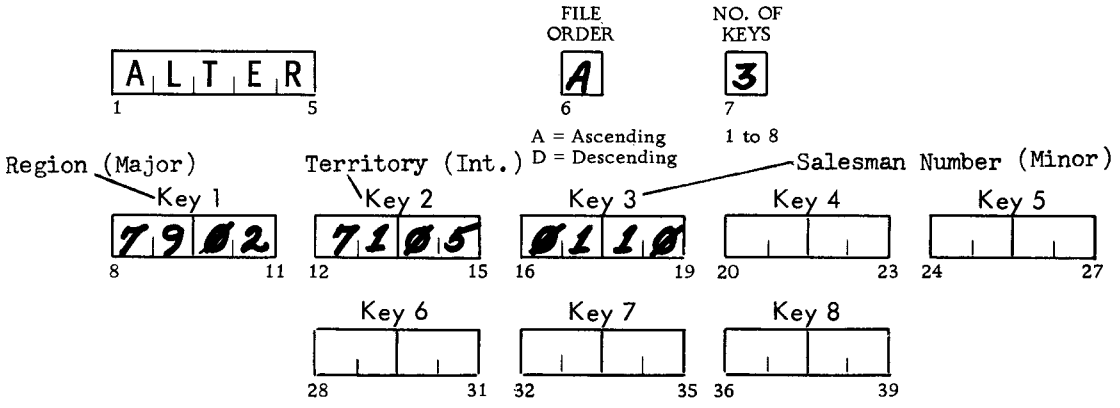
EASYTAB - ALTER

Date _____

I.D. EXAMPLE 1

APPLICATION INSERTIONS TO SALES MASTER FILE Author _____

ALTER B PARAMETER - First Card.



Punch one INSERT Director → INSERT (1 6)

"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

REPLACE (1 7)

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

DELETE (1 6)

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

Punch one ENDEND card → ENDEND (1 6)

END CARD - Last Card.

Figure 8-3. Alter B Program; INSERT - Director Cards

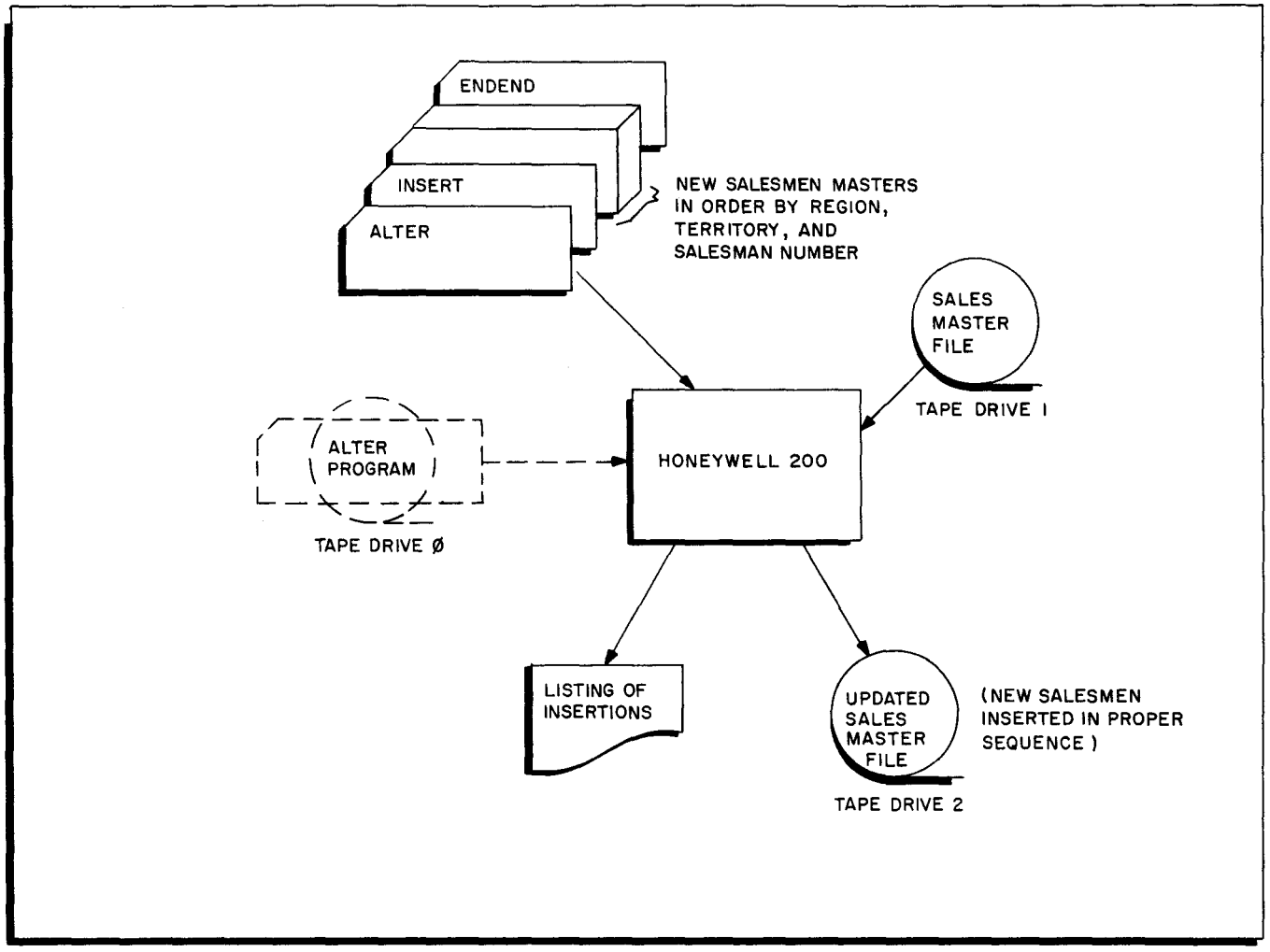


Figure 8-4. Alter B Program; INSERT - Computer Setup

DELETE

Application

We must delete the master records of those few salesmen who have left the company.

Preparation

1. Punch a master card (only key fields need be punched) for each salesman to be deleted. Arrange cards in order by key fields.
2. Punch an Alter card, a DELETE director, and an ENDEND card (see Figure 8-5).
3. Set up run as shown in Figure 8-6.

EASYTAB - ALTER

Date _____

I.D. _____

APPLICATION *DELETIONS FROM SALES MASTER FILE* Author _____

ALTER B PARAMETER - First Card.

ALTER	FILE ORDER	NO. OF KEYS
1 5	A 6	3 7
	A = Ascending D = Descending	1 to 8

Key 1	Key 2	Key 3	Key 4	Key 5
7902 8 11	7105 12 15	0110 16 19	 20 23	 24 27

Key 6	Key 7	Key 8
 28 31	 32 35	 36 39

INSERT
1 6

"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

REPLACE
1 7

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

Punch one DELETE Director → DELETE
1 6

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

Punch one ENDEND card → ENDEND
1 6

END CARD - Last Card.

Figure 8-5. Alter B Program; DELETE - Director Cards

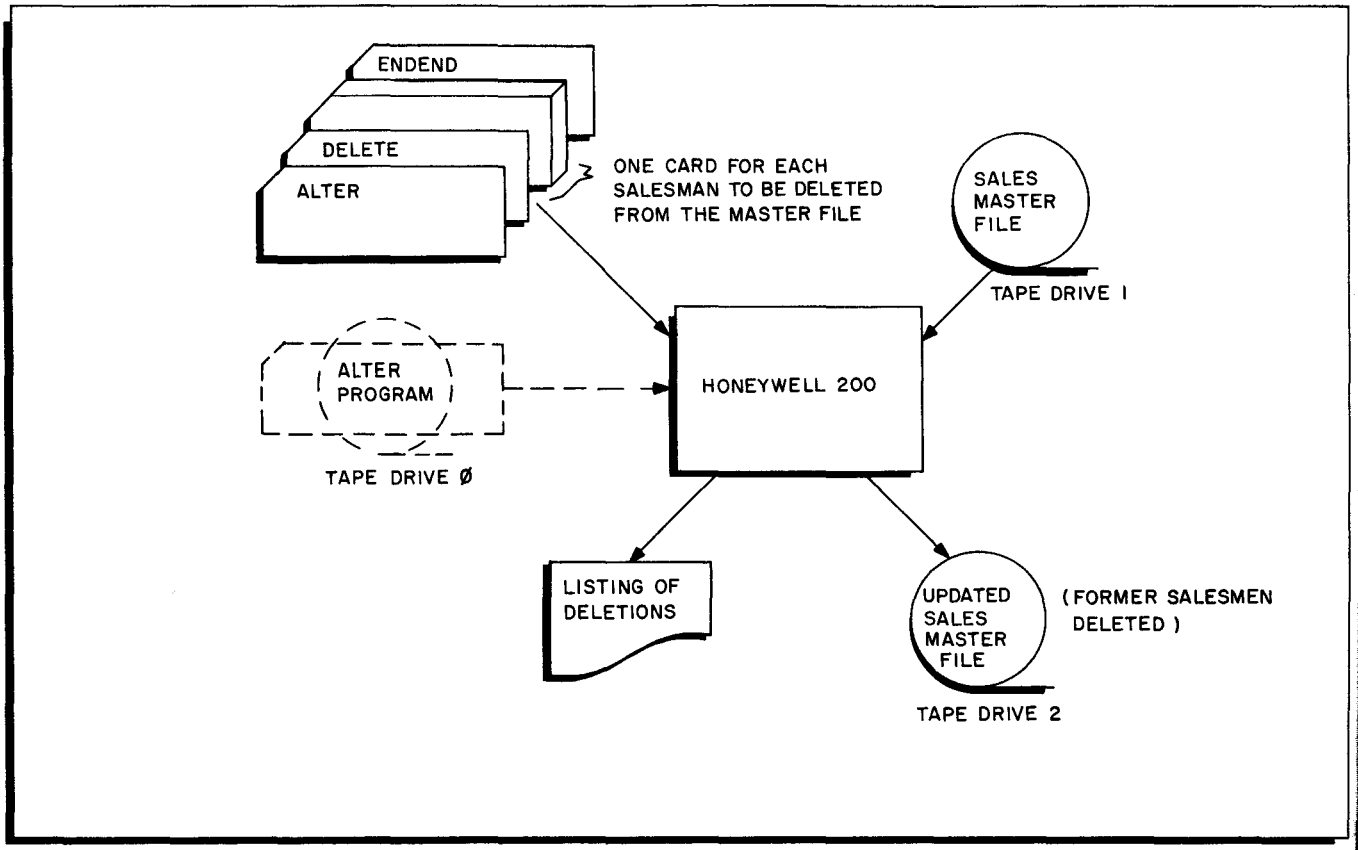


Figure 8-6. Alter B Program; DELETE - Computer Setup

REPLACE

The REPLACE function of the Alter B program is actually a combination of the DELETE and INSERT functions. This can be used whenever particular records within a file are to be replaced with new records containing updated or corrected information, provided that none of the key field data is being changed. That is, since the key data is used to locate the record on tape, the key field data in the input replacement card must agree with the key field data in the tape record to be replaced. If the key field data has been modified, then two operations - DELETE and INSERT - must be performed as explained under Multiple Operations, page 8-8.

Application

The addresses of several of the salesmen must be changed on the Sales Master File.

Preparation

1. Punch a sales master card, duplicating the information contained on the sales master file (with the exception of the address field, which will contain the new address) for each salesman whose address has changed. Arrange cards in order by key fields.
2. Punch an Alter card, a REPLACE director, and an ENDEND card (see Figure 8-7).
3. Set up run as shown in Figure 8-8.

EASYTAB - ALTER

Date _____

I.D. _____

APPLICATION REPLACEMENTS TO SALES MASTER FILE Author _____

ALTER B PARAMETER - First Card.

ALTER	FILE ORDER	NO. OF KEYS
1 5	6	7
	A	3
	A = Ascending D = Descending	1 to 8

Key 1	Key 2	Key 3	Key 4	Key 5
7902	7105	0110		
8 11	12 15	16 19	20 23	24 27

Key 6	Key 7	Key 8
28 31	32 35	36 39

INSERT

"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

Punch one REPLACE Director → REPLACE

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

DELETE

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

Punch one ENDEND card → ENDEND

END CARD - Last Card.

Figure 8-7. Alter B Program; REPLACE - Director Cards

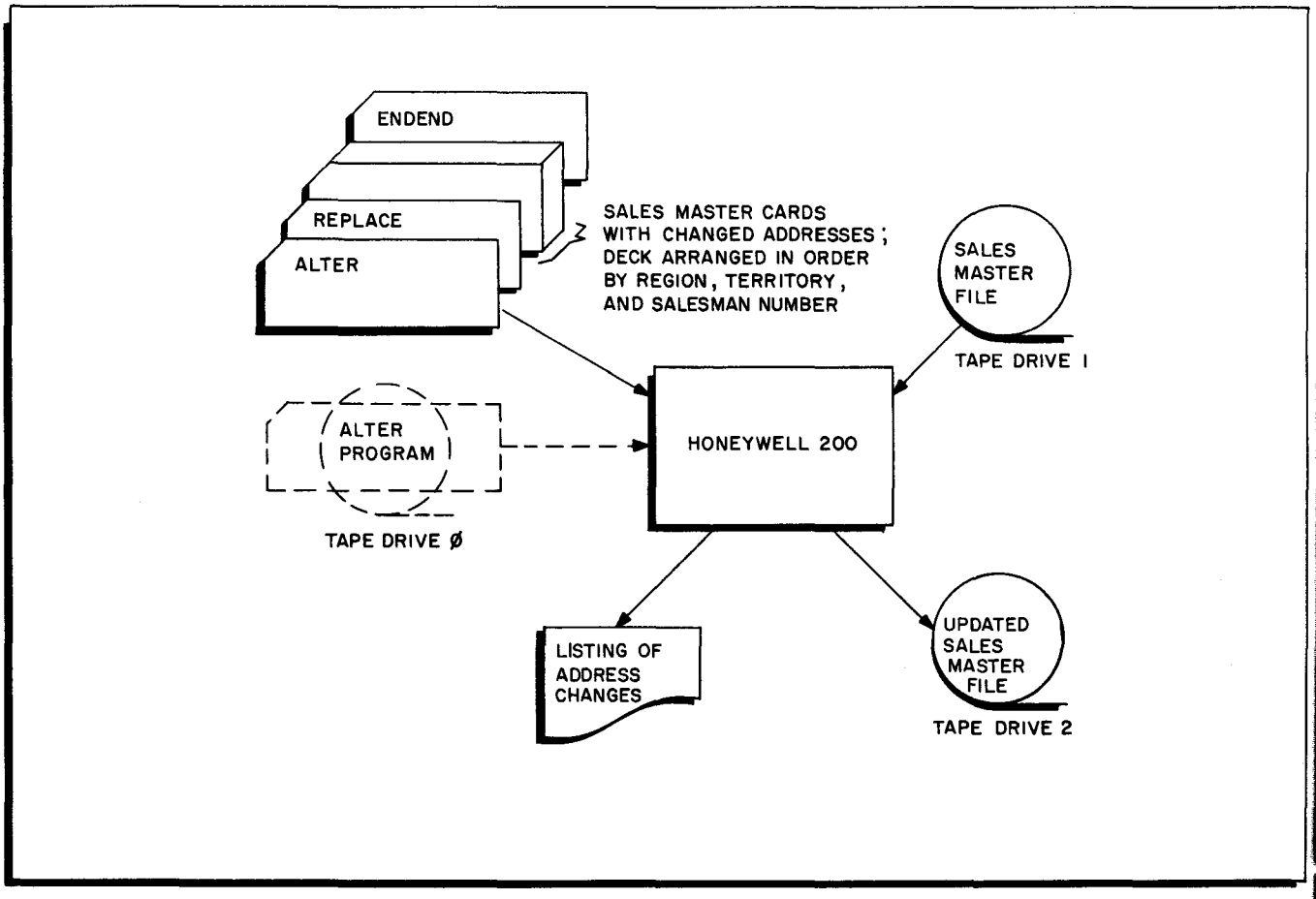


Figure 8-8. Alter B Program; REPLACE Example - Computer Setup

MULTIPLE OPERATIONS

As was pointed out in the previous example, there are situations where record replacement or correction must be accomplished by the use of two or more of the Alter functions. This is particularly true in the case where key field data is being changed.

Application #1

Five of the salesmen have changed regions and/or territories.

Preparation

Since the number of changes is small, the operation can be performed during one pass of the master file.

1. Punch a sales master card for each of the five salesmen, using their previous territory and region codes. Only the key field data need be punched. Arrange in order.
2. Punch a complete sales master card for each of the salesmen, using their new territory and region codes. Arrange in order.

EASYTAB - ALTER

Date _____

I.D. _____

APPLICATION REPLACEMENTS BY DELETION/INSERTION Author _____

ALTER B PARAMETER - First Card.

ALTER	FILE ORDER	NO. OF KEYS
1 5	6	7
	A	3
	A = Ascending D = Descending	1 to 8

Key 1	Key 2	Key 3	Key 4	Key 5
7902	7105	0110		
8 11	12 15	16 19	20 23	24 27

Key 6	Key 7	Key 8
28 31	32 35	36 39

Punch as many as needed → INSERT (1 6)

"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

REPLACE (1 7)

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

Punch as many as needed → DELETE (1 6)

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

Punch one ENDEND card → ENDEND (1 6)

END CARD - Last Card.

Figure 8-9. Alter B Program; Multiple Operations 1 - Director Cards

SALESMAN	OLD		NEW	
	REGION	TERRITORY	REGION	TERRITORY
0004523105	01	34658	01	56901
0005699933	02	00997	01	55509
0000067731	02	01445	05	00003
0000000455	04	00002	02	00997
0000993571	05	00003	01	56901

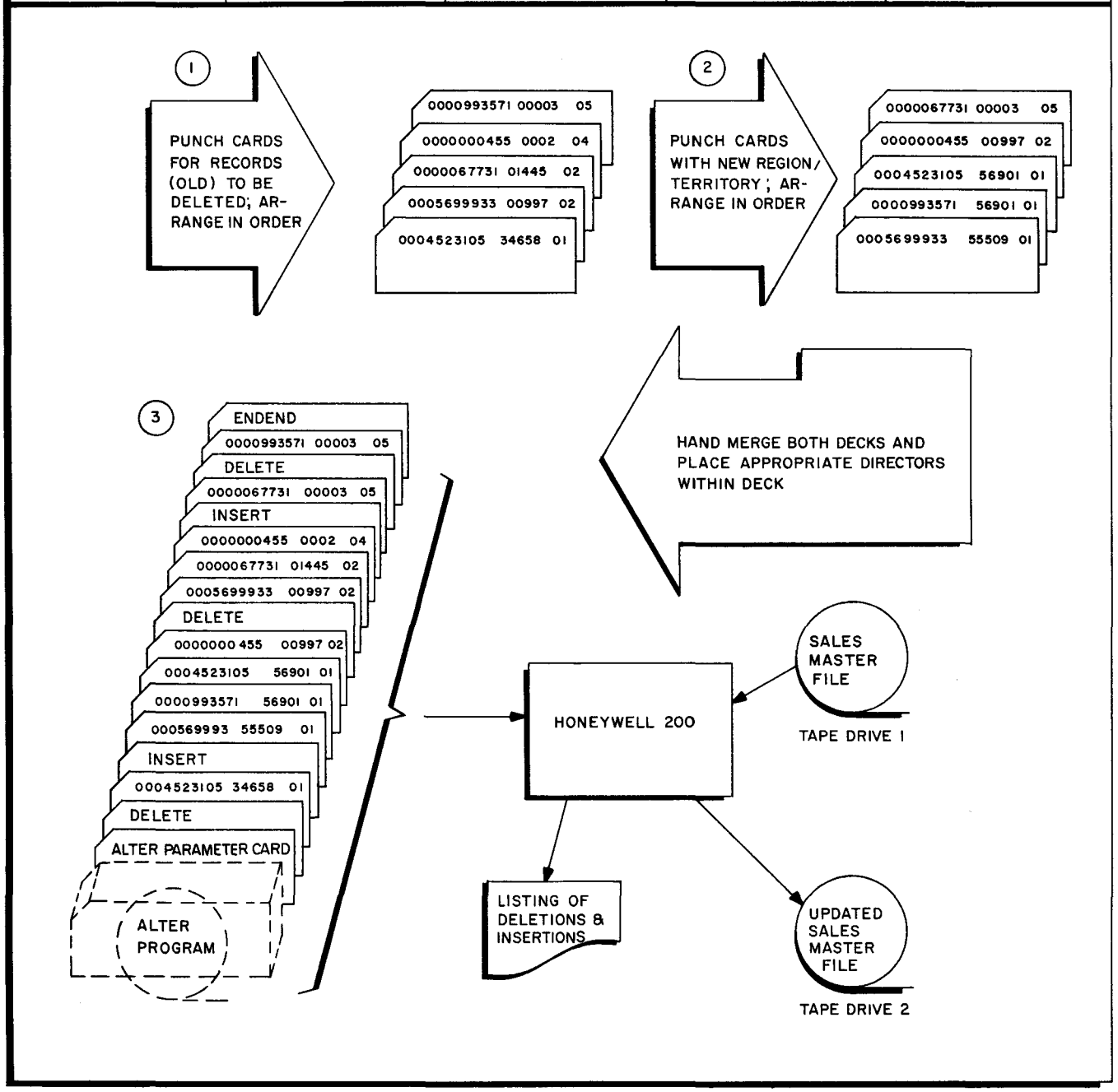


Figure 8-10. Alter B Program; Multiple Operations 1 - Computer Setup

3. Combine both sets of cards and arrange them in order by key data. Place a DELETE director in front of each of the cards punched in (1) and an INSERT director in front of each of the cards punched in (2). If two or more cards of the same type are contiguous, a director need only be placed in front of the first.

4. Set up the run as shown in Figure 8-10.

Application #2

Two hundred and fifty of the salesmen have changed regions and/or territories.

Preparation

Since the number of changes in this case is large, the updating of the file should be accomplished by two passes of the master file.

1. Punch a sales master card for each of the 250 salesmen, using their previous territory and region codes. Only key field data need be punched.

2. Punch a complete sales master card for each of the salesmen, using their new territory and region codes.

3. Sort each set separately by key field data.

4. Place a DELETE director in front of the cards punched in (1) and perform a deletion run. This will eliminate from the file all of the records with the old region and territory code.

5. Place an INSERT director in front of the cards punched in (2) and perform an insertion run. This will insert the master records containing the new territory and region codes. The input master file used is the output from (4).

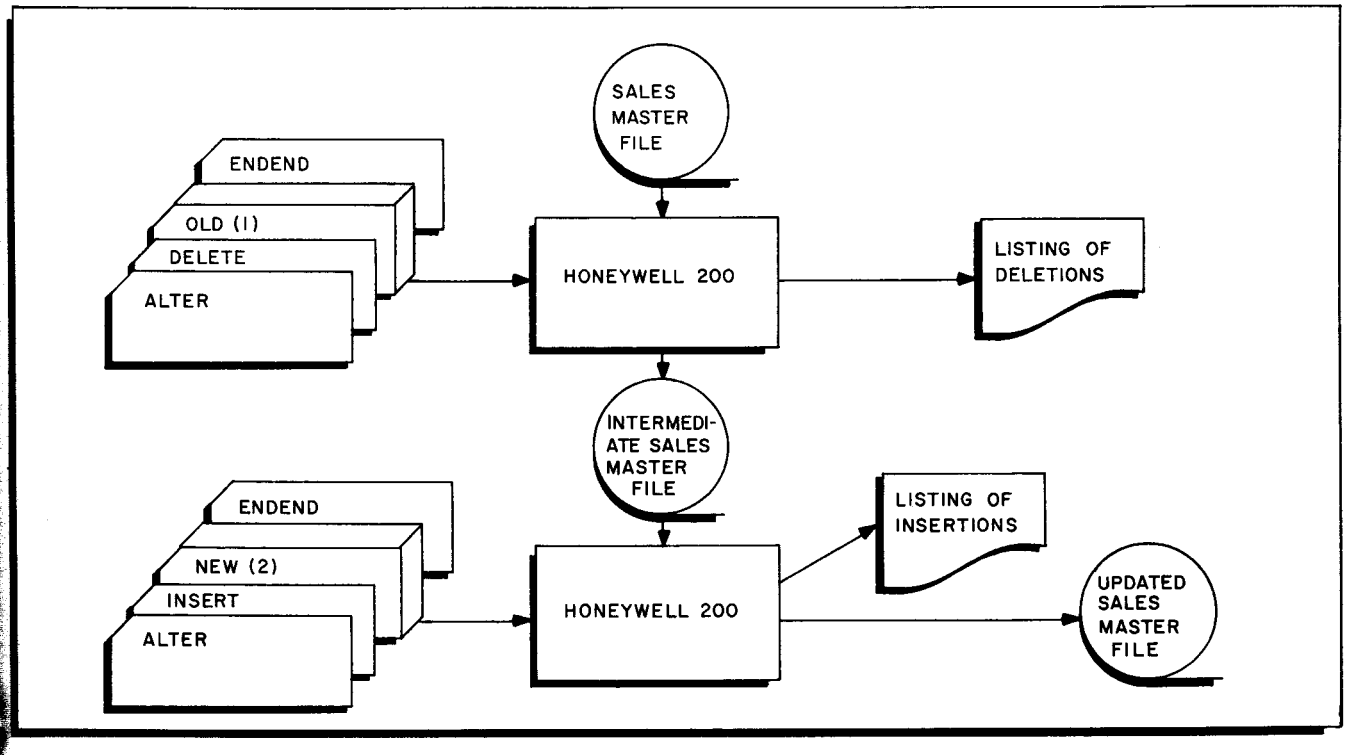


Figure 8-11. Alter B Program; Multiple Operations 2 - Computer Setup

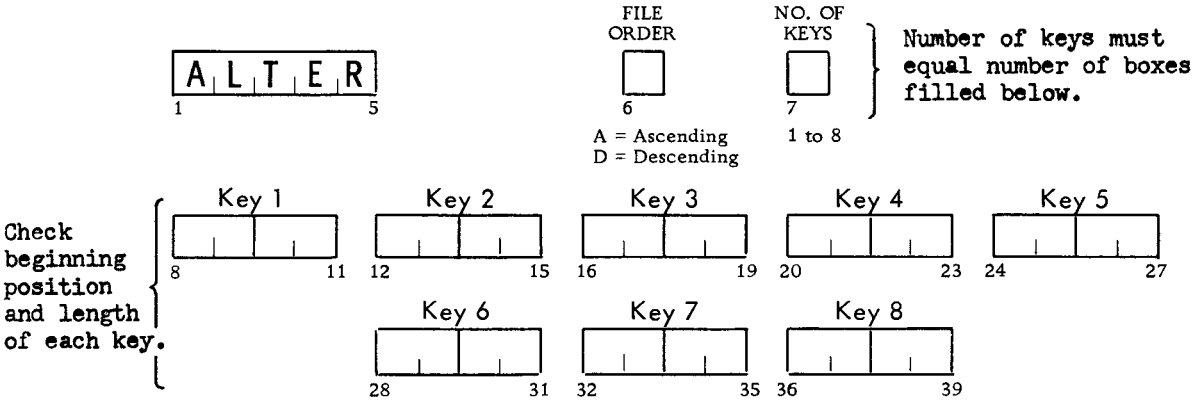
EASYTAB - ALTER

Date _____

I.D. _____

APPLICATION *CHECK SHEET* Author _____

ALTER B PARAMETER - First Card.



"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

END CARD - Last Card.

Figure 8-12. Alter B Program Check List

SECTION IX
SAMPLE EASYTAB APPLICATION

INTRODUCTION

A comprehensive example of the use of the Easytab System is provided by the payroll application which follows. Each week approximately 1,000 employees must be processed, paychecks must be calculated and printed, and various updating and reporting functions must be performed.

Under the tabulating system, the processing consisted of 25 separate runs:

6 Sorting operations
1 Emitting operation
4 Tabulating and/or summarizing operations
4 Calculating operations
5 Merging operations
1 Match Merge operation
3 Listing operations
1 Keypunching operation

After the changeover to the computer environment, the processing was accomplished by the following 11 program runs:

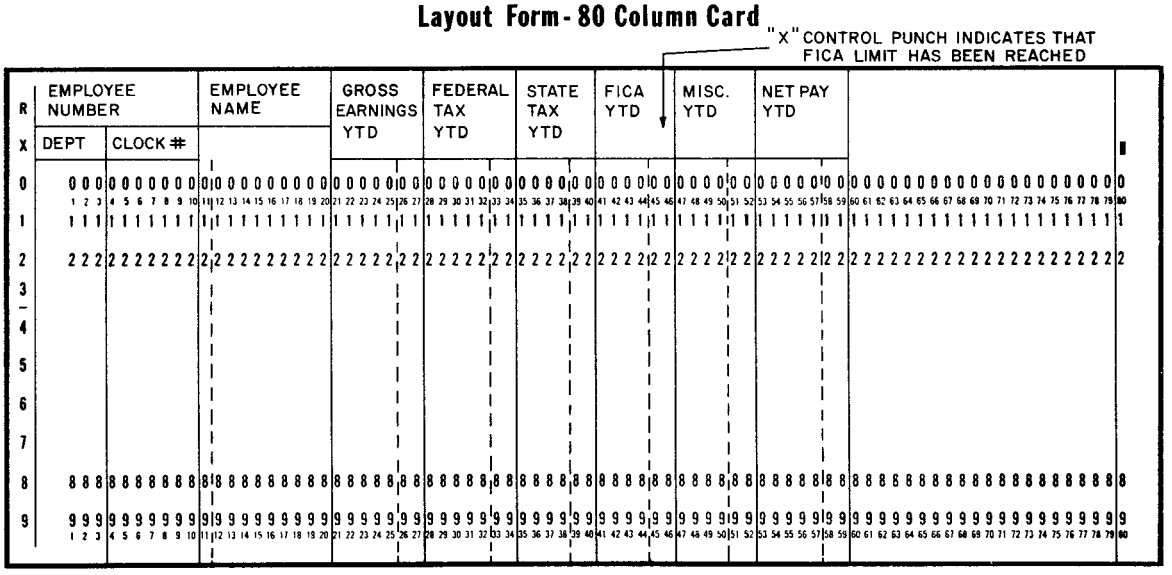
2 Sorting operations (Sort B)
1 Tabulating operation (Total B)
1 Correction and Update operation (Alter B)
3 Calculating and report generating operations (COBOL B)
2 Collate operations (Merge B)
1 Card to tape conversion (PERIO B)
1 Keypunching operation

CARD AND REPORT FORMATS

In the process of placing the payroll system on the computer the same basic processes and most of the same card and report formats were retained. Due to the powerful processing capabilities of the Series 200 computers, we were able to combine the year-to-date master file (see Figure 9-1) and the deduction master file (see Figure 9-4) into the employee master and deduction file (see Figure 9-5), The combining of these two files resulted in the elimination of several runs.

The following pages contain the card and report formats utilized or produced by both the tabulating and computer systems.

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

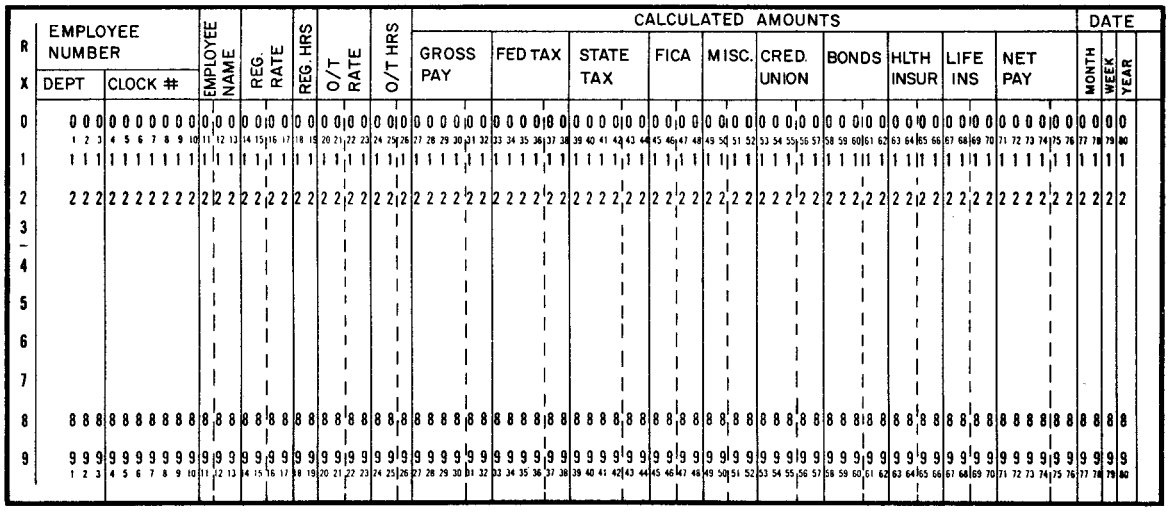
By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-1. Year-To-Date Payroll Master File (Tabulating System)

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

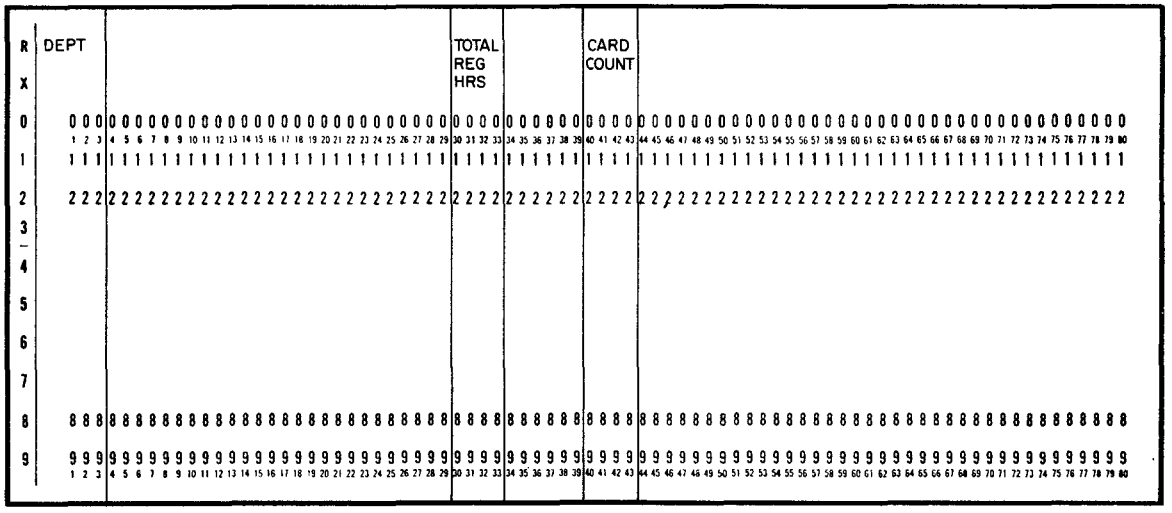
By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-2. Time Cards (Tabulating and Computer Systems)

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

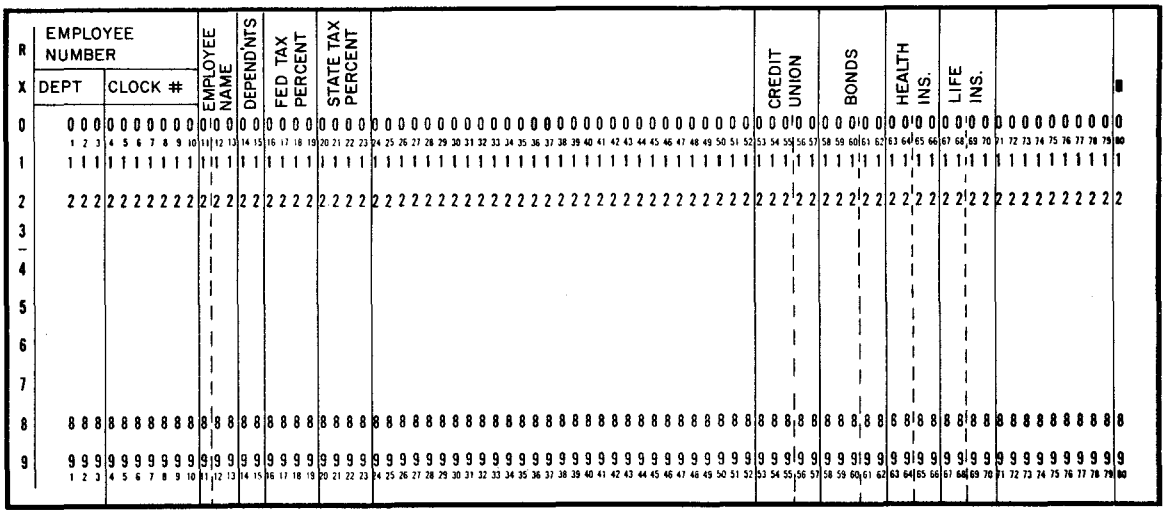
By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-3. Batch Total Card (Tabulating and Computer Systems)

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

By Programmer _____ Checked By _____

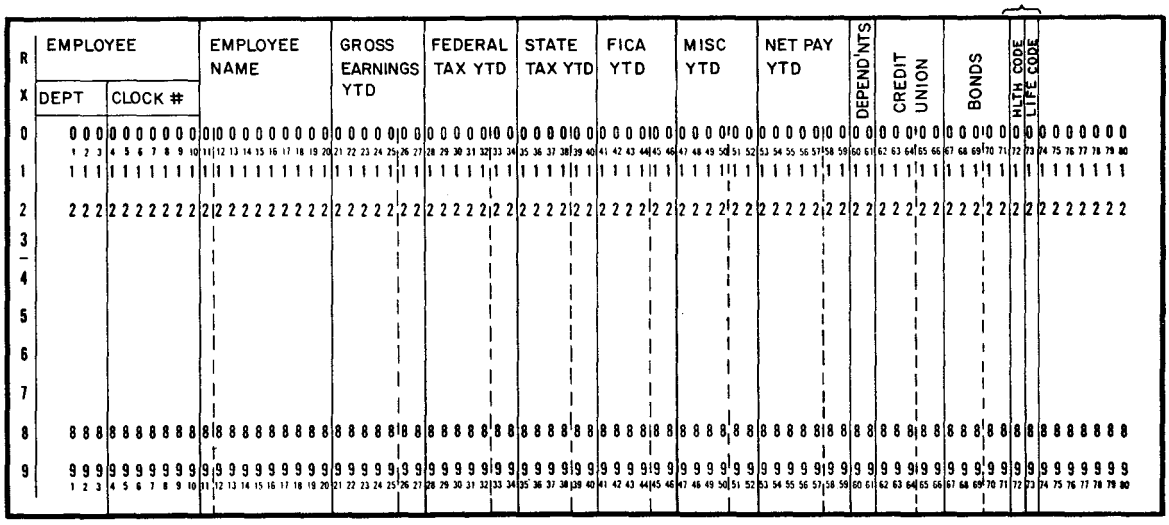
Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-4. Deduction Card (Tabulating System)

Layout Form - 80 Column Card

0 = NO DEDUCTION
1 = INDIVIDUAL PLAN
2 = FAMILY PLAN



Title _____

Prepared By _____ For Program _____

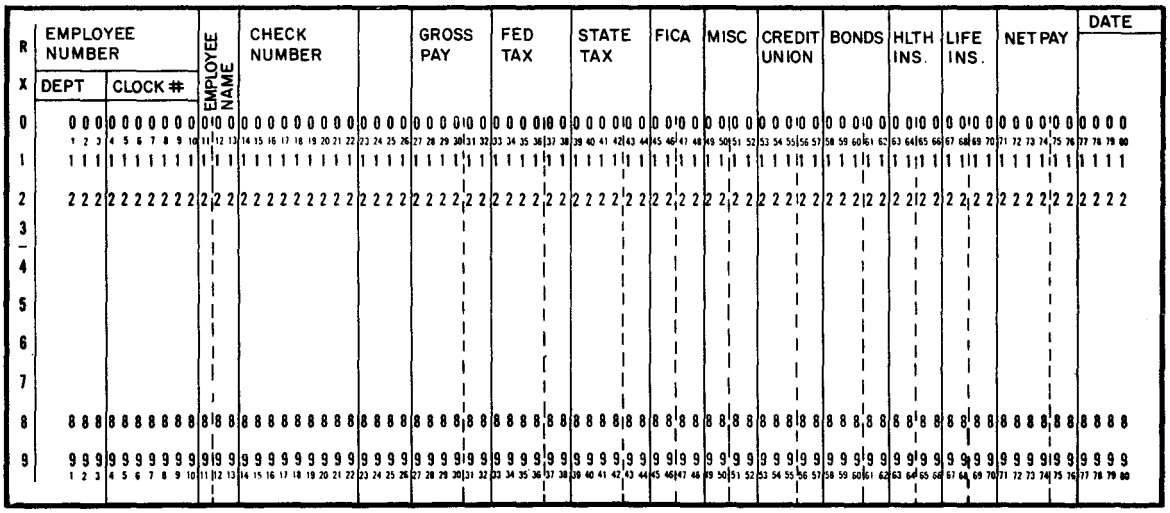
By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-5. Combined Year-To-Date Master and Deduction File (Computer System)

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

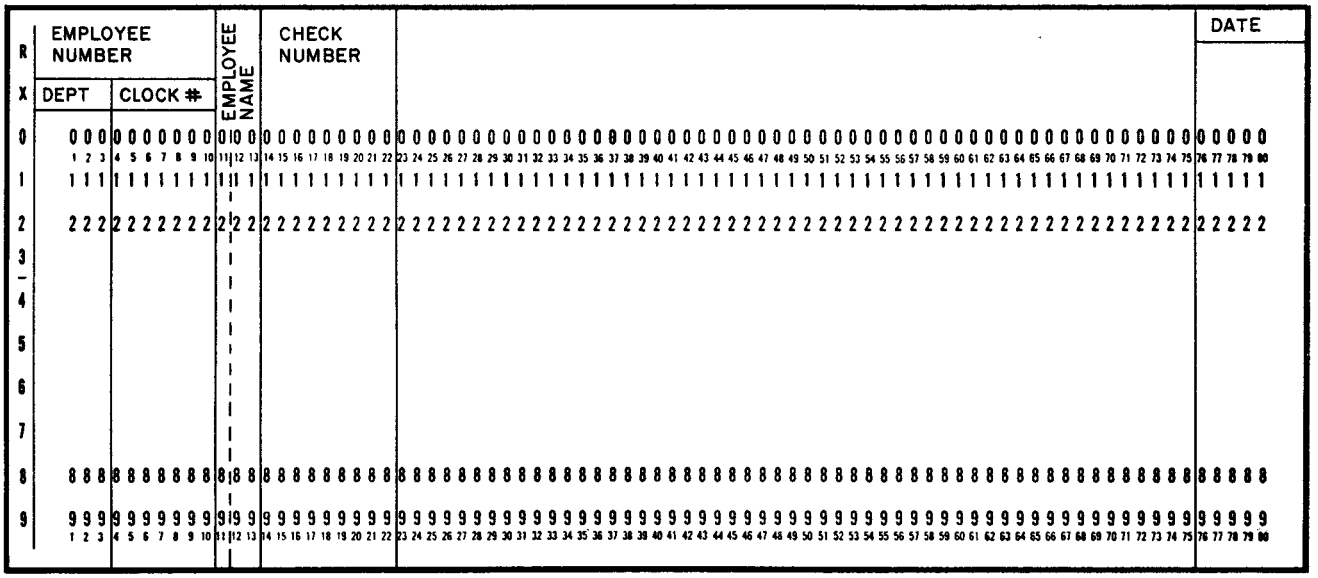
By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-6. Pay Check Master (Tabulating and Computer Systems)

Layout Form - 80 Column Card



Title _____

Prepared By _____ For Program _____

By Programmer _____ Checked By _____

Date _____ Remarks _____

Modification _____ Page _____ Of _____

Figure 9-7. Cancelled Check Card (Tabulating and Computer Systems)

CONSOLIDATED MANUFACTURING CORP
SECOND TRUST COMPANY, NEW YORK

DATE

EMPLOYEE NUMBER

PAY TO THE ORDER OF:

CHECK NO. NAME AMOUNT

GROSS	FED TAX	STATE TAX	FICA	MISC	CRD UN	BONDS	INSUR.

YEAR TO DATE TOTALS					
GROSS PAY	FEDERAL TAX	STATE TAX	FICA	MISC	NET PAY

Figure 9-8. Format for Payroll Check (Tabulating and Computer Systems)

Print Positions:	FIRST LINE		SECOND LINE	
	Date	04-11	Check No.	04-12
	Employee #	16-26	Name	15-25
	Gross Pay	40-46	Net Amount	30-38
	Fed. Tax	49-55	YTD Gross Pay	40-47
	State Tax	58-64	YTD Fed. Tax	50-57
	FICA	67-71	YTD State Tax	60-66
	Misc.	73-77	YTD FICA	70-76
	Cred. Union	79-84	YTD Misc.	80-86
	Bonds	86-91	YTD Net Pay	90-97
	Insurance	93-97		

WEEKLY PAYROLL EMPLOYEE REGISTER

AUGUST 12, 1966

EMPLOYEE NUMBER	EMP. NAME	CHECK NUMBER	GROSS PAY	FED TAX	STATE TAX	FICA	MISC	CRD UN	BONDS	HEALTH	LIFE	NET PAY
XXX XXXXXXX	X XX	XXXXXXXXX	XXX. XX	XXX. XX	XX. XX	XX. XX		XXX. XX	XX. XX	XX. XX	X. XX	XXX. XX

Figure 9-9. Payroll Register Format (Tabulating and Computer Systems)

WEEKLY DEDUCTION REGISTER

AUGUST 12, 1966

EMPLOYEE NUMBER	EMP. NAME	CHECK NUMBER	STANDARD DEDUCTIONS			VOLUNTARY DEDUCTIONS					TOTAL DEDUCTIONS
			FED TAX	STATE TAX	FICA	MISC	CRED UN	BONDS	HEALTH	LIFE	
XXX XXXXXXX	X XX	XXXXXXXXX	XXXX. XX	XXXX. XX	XX. XX		XXX. XX	XXX. XX	XX. XX	XX. XX	XXXXX. XX

Figure 9-10. Payroll Deduction Register Format (Tabulating and Computer Systems)

THE TABULATING SYSTEM

The systems flowchart for the application as performed on tabulating equipment is shown in Figures 9-11A and 9-11B.

Preprocessing of the Year-to-Date Payroll Master File

T1 The year-to-date payroll master file (card layout - Figure 9-1) is sorted on FICA year-to-date amount (columns 41-46). Those cards which contain an amount equal to or above the FICA limit for the year are separated.

T2 Those cards containing a FICA amount which equals or exceeds the limit are punched with an emitted "X" control punch over column 46. They are then combined with the other master cards.

T3 The combined year-to-date master cards are sorted back in order by employee number (columns 1-10).

Payroll Processing

T4 Time cards (card layout - Figure 9-2) are punched from the time sheet data. Only columns 1-26 and columns 77-80 are punched. Batch total cards (Figure 9-3) are also punched at this time for each department.

T5 The batch cards are placed behind the time cards and both are sorted on employee number (columns 1-10).

T6 The cards are listed and balanced according to the batch card totals for each department. If any department groups are out of balance, a check is made with the original data, corrections are made, and the corrected cards are inserted back into the deck.

T7 The cards are sorted on column 80 to separate the time cards from the batch cards. The batch cards are discarded.

T8 The time cards are then passed through the electronic calculating punch and gross pay is calculated (regular hours X regular rate) + (O/T hours X O/T rate). The result is punched in the gross pay field (columns 27-32).

T9 The calculated time cards are merged with the deduction file. Unmatched deduction masters represent absent employees and are held aside to be later merged back into the file. The deduction card format is shown in Figure 9-4.

T10 Pass 1 - Federal, state, and miscellaneous taxes are calculated and punched into the time cards. Taxes are calculated by multiplying the gross pay amount (columns 27-32) by the tax percentages punched in the deduction card.

T11 Pass 2 - Credit union deductions, bond deductions, health insurance premium, and life insurance premiums are gangpunched from the deduction masters into the time cards.

T12 The cards are sorted on column 80 to separate the deduction masters from the time cards.

T13 The deduction masters are merged with the unmatched masters from T9.

T14 The preprocessed year-to-date payroll masters are match-merged with the time cards.

T15 The final calculation pass is made. The FICA amount is calculated for those employees who have not yet reached the deduction limit (no emitted "X" control punch in column 46), and the net pay is calculated for all employees by adding all of the

deductions and subtracting the total from the gross pay amount. The net pay result is punched in columns 71-76 of the time cards.

T16 Using the combined deck of year-to-date masters and calculated time cards as input, the payroll checks are printed (see Figure 9-8) and pay check masters are summary punched (see Figure 9-6). Sequential check numbers are assigned.

T17 Using the same deck as input a second time, a summary cutting operation produces new year-to-date masters and a payroll summary report.

T18 The pay check masters from T16 are listed and totaled for a payroll register report (see Figure 9-9).

T19 The masters are tabulated a second time to produce a deduction register report (see Figure 9-10).

T20 The new year-to-date masters from T17 are merged with the unmatched masters from T14 to create the updated year-to-date payroll master file.

T21 As the cancelled checks are returned from the bank, a cancelled check card (see Figure 9-7) is punched for each. At the end of each week, these cards are sorted by check number.

T22 The sorted cancelled check cards are then match-merged with the outstanding pay check masters from previous weeks. Unmatched cancelled check cards are listed as errors since these indicate cancelled checks for which there are no records (pay check masters) of checks being issued. Unmatched pay check masters represent those checks still outstanding and are listed for a outstanding check report. The matched output is held for later reference.

T23 Listing of unmatched cancelled check cards as errors.

T24 Listing of unmatched pay check masters for the outstanding check report.

T25 The unmatched pay check masters are merged with the current pay check masters from T19, creating a new outstanding pay check deck.

THE COMPUTER SYSTEM

The systems flowchart for the application following the changeover to the computer is shown in Figure 9-12. Following this flowchart are the setup, parameter cards, etc., for each of the runs.

Payroll Processing

C1 The time cards and batch total cards are keypunched and verified.

C2 The Sort B program is used to sort the time cards and batch total cards by employee number (columns 1-10) and to place them on tape (see Figures 9-13 and 9-14).

C3 The sorted time card and batch total card tape is then processed by the Total B program and a balance control listing is produced (see Figures 9-15 and 9-16).

C4 In the case of any department groups out of balance, corrections are keypunched, arranged in order with the appropriate directors inserted, and reentered via the Alter B program (see Figures 9-18 and 9-19).

C5 The corrected and sorted time card tape is then processed, along with a combined employee year-to-date master and deduction file (see Figure 9-5), by a COBOL compiled program. The program is written to calculate the gross pay, taxes, deductions, and net pay and produces both the payroll checks and the master tape (see Figures 9-20, 9-21, and 9-22).

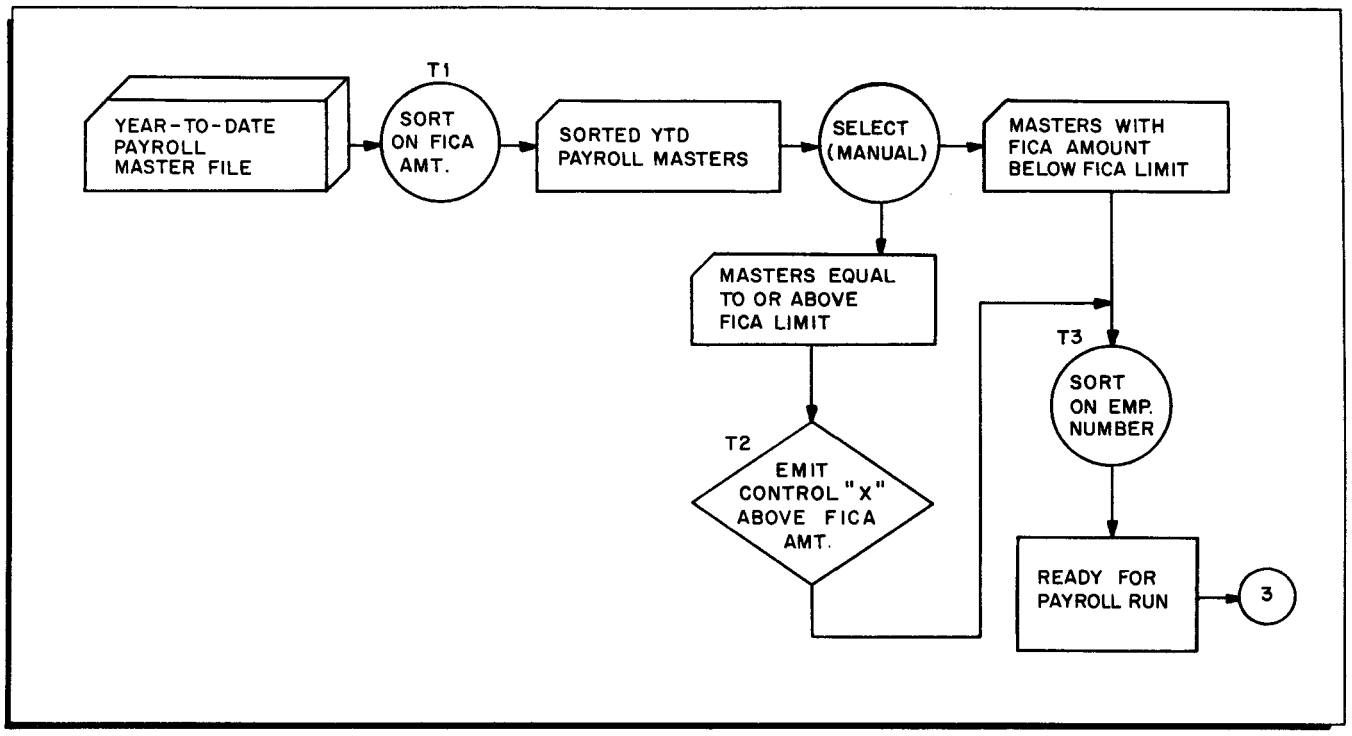


Figure 9-11A. Tabulating System: Preprocessing of Year-to-Date File

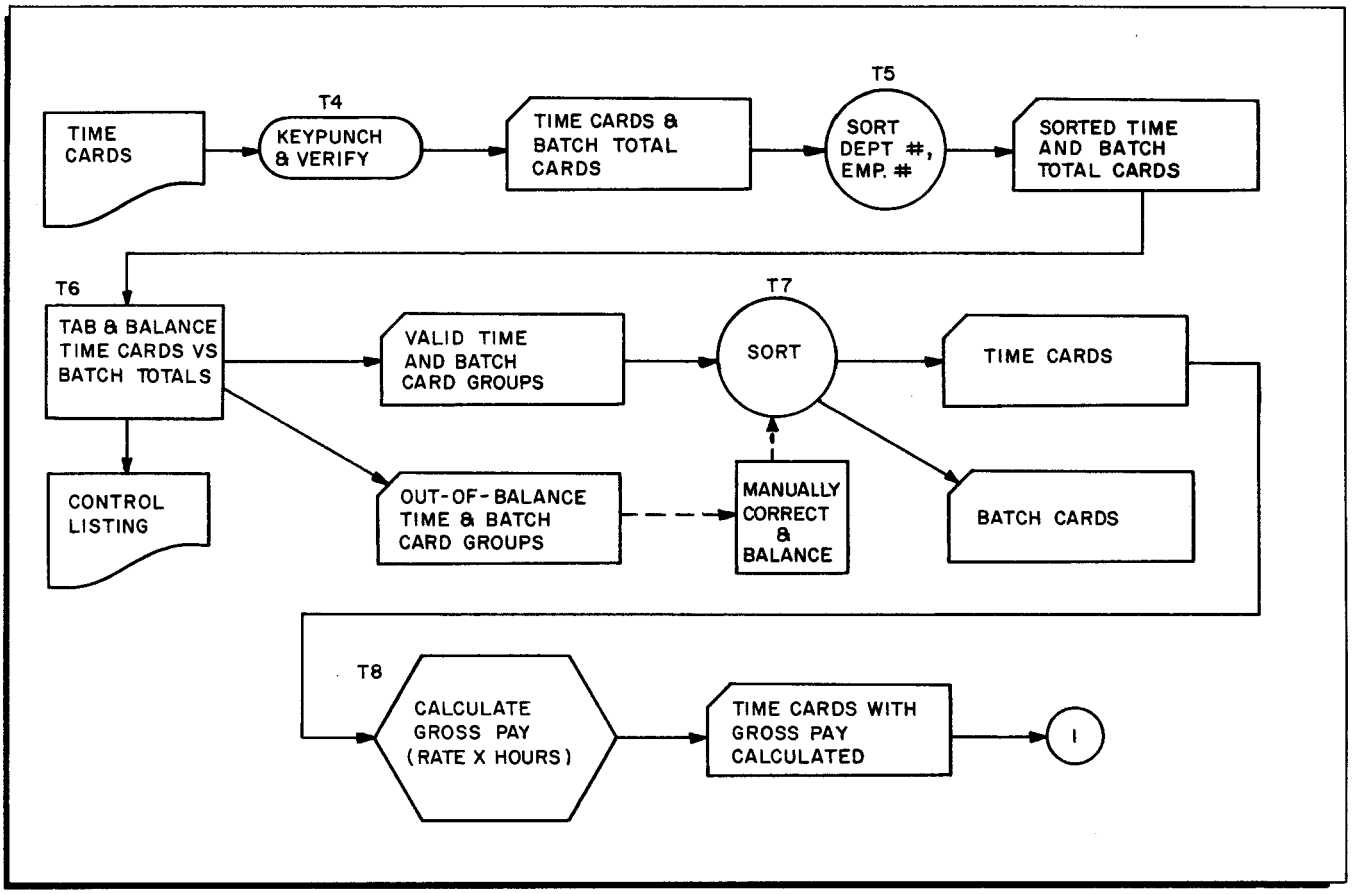


Figure 9-11B. Tabulating System: Payroll Processing

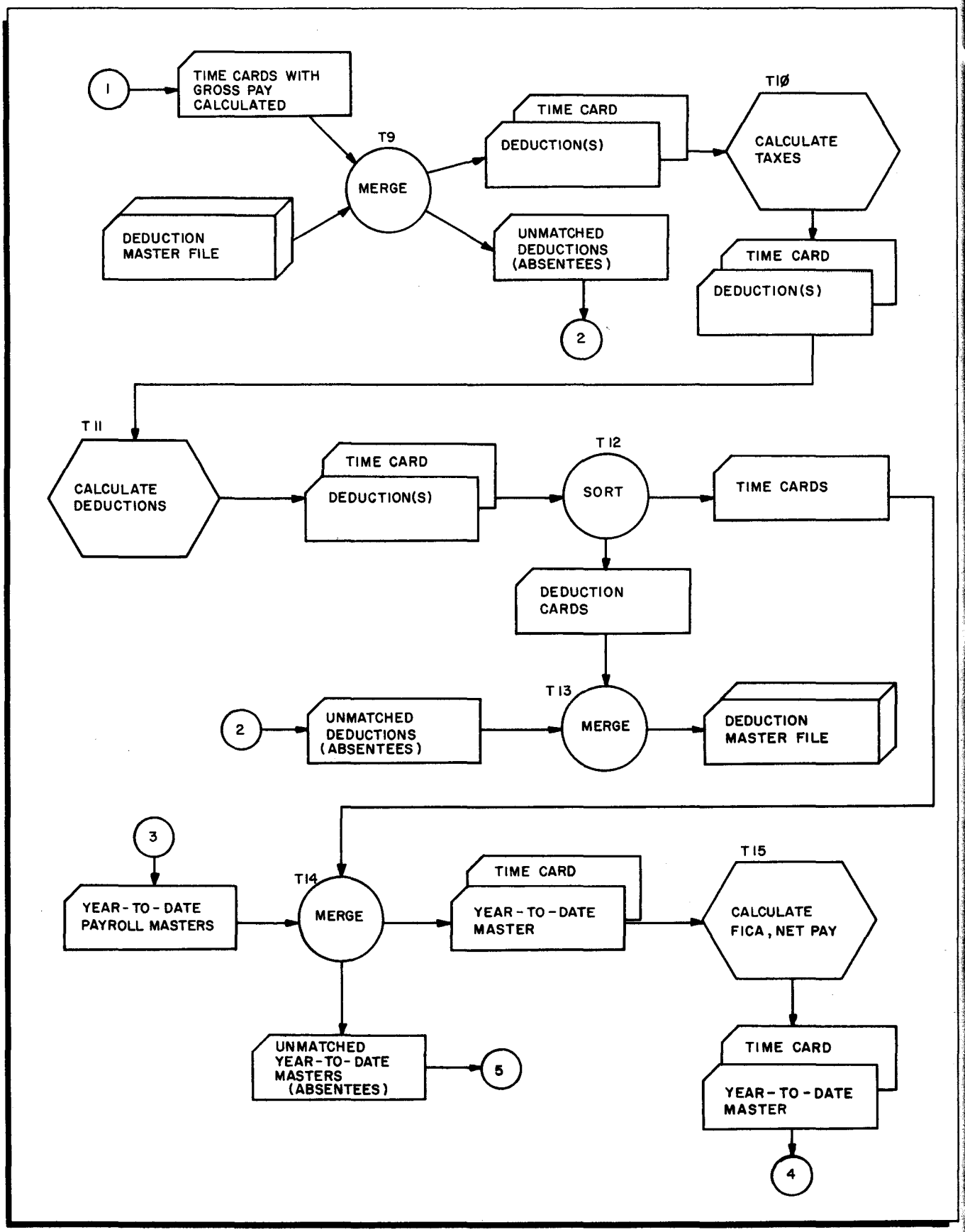


Figure 9-11B (cont). Tabulating System: Payroll Processing

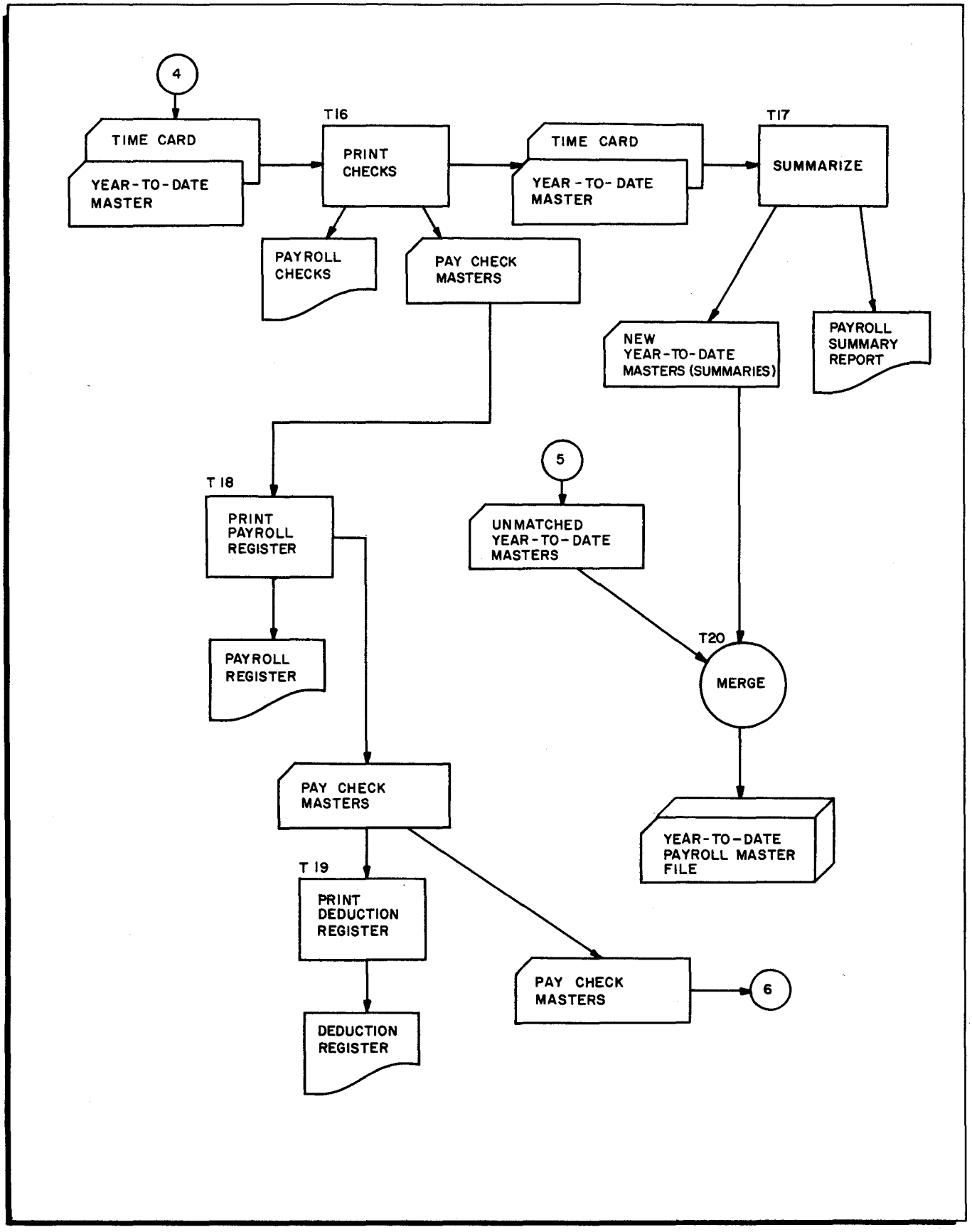


Figure 9-11B (cont). Tabulating System: Payroll Processing

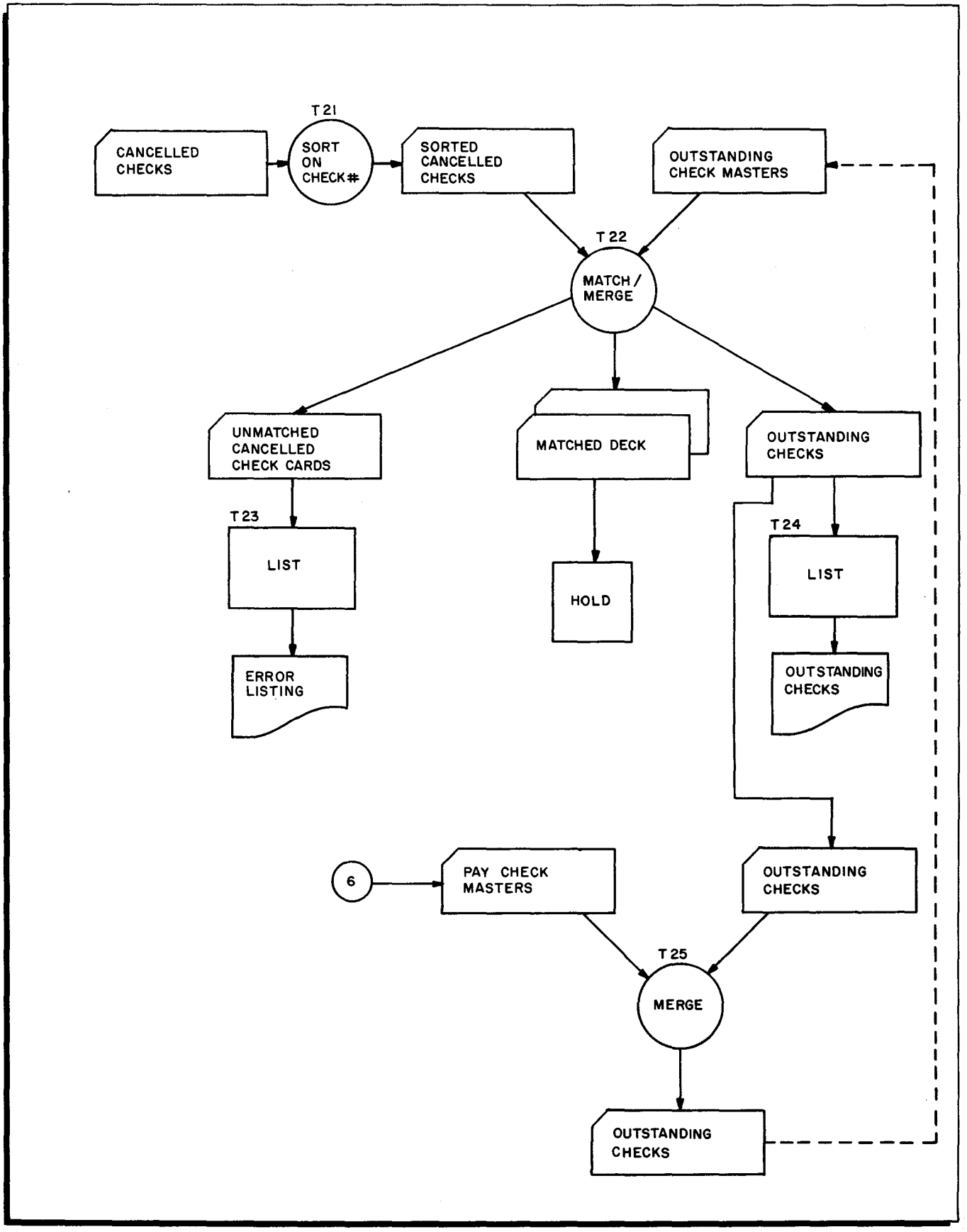


Figure 9-11B (cont). Tabulating System: Payroll Processing

C6 The paycheck master tape file and the employee master and deduction file are then input to a second COBOL program which updates the employee year-to-date totals, producing an updated employee year-to-date file, and prints the payroll register listing (see Figures 9-23, 9-24, and 9-25).

C7 The paycheck master file is then input to a third COBOL program which has been written to calculate the total deductions for each employee, the total deductions for each department, and print the deduction register (see Figures 9-26, 9-27, and 9-28).

C8 The cancelled check cards punched from the incoming cancelled checks from the bank are sorted according to check number ty the Sort B program and are placed on tape (see Figures 9-29 and 9-30).

C9 The sorted cancelled check cards are then match-merged against the previously outstanding checks of prior payrolls and an output listing (error listing) of the unmatched cancelled check cards, and an output deck of the checks still outstanding are produced (see Figures 9-31 and 9-32).

C10 These outstanding checks are then placed on tape by PERIO B and the tape is printed to produce a listing of those checks still outstanding from previous payrolls (see Figure 9-33).

C11 This previous outstanding check tape is merged with the current paycheck masters producing a currently outstanding check tape (see Figures 9-34 and 9-35).

OPERATING PROCEDURES

Once all of the individual utility programs have been selected, their parameter cards punched, and the three COBOL programs written and compiled, a permanent loading deck can be set up as follows:

1. The program decks of those utility routines used more than once (viz., Sort B and Merge B) are reproduced.
2. All of the program decks are then arranged in order of execution and the parameter cards are inserted at the appropriate points. The resultant deck is illustrated by the solid lines in Figure 9-36.

Loading the Programs from Cards

If the programs are to be loaded from cards via the card reader during the execution of the runs, the procedures is as follows:

1. Obtain those cards (or card decks) which change from payroll to payroll (e.g., the weekly time and batch total cards) and insert them into the appropriate positions in the deck. These cards are indicated by the broken lines in Figure 9-36.

   NOTE: Two card groups (viz., the corrections input to run C4 and the unmatched previously outstanding check cards input to run C10) are not available until the runs immediately preceding are executed.

2. If the Type 214-2 Reader/Punch is being used, the deck must be divided into three parts, each of which must be loaded separately, since both runs C5 and C9 produce punched card output. If a separate card reader and card punch are available, the entire deck can be placed into the card reader.

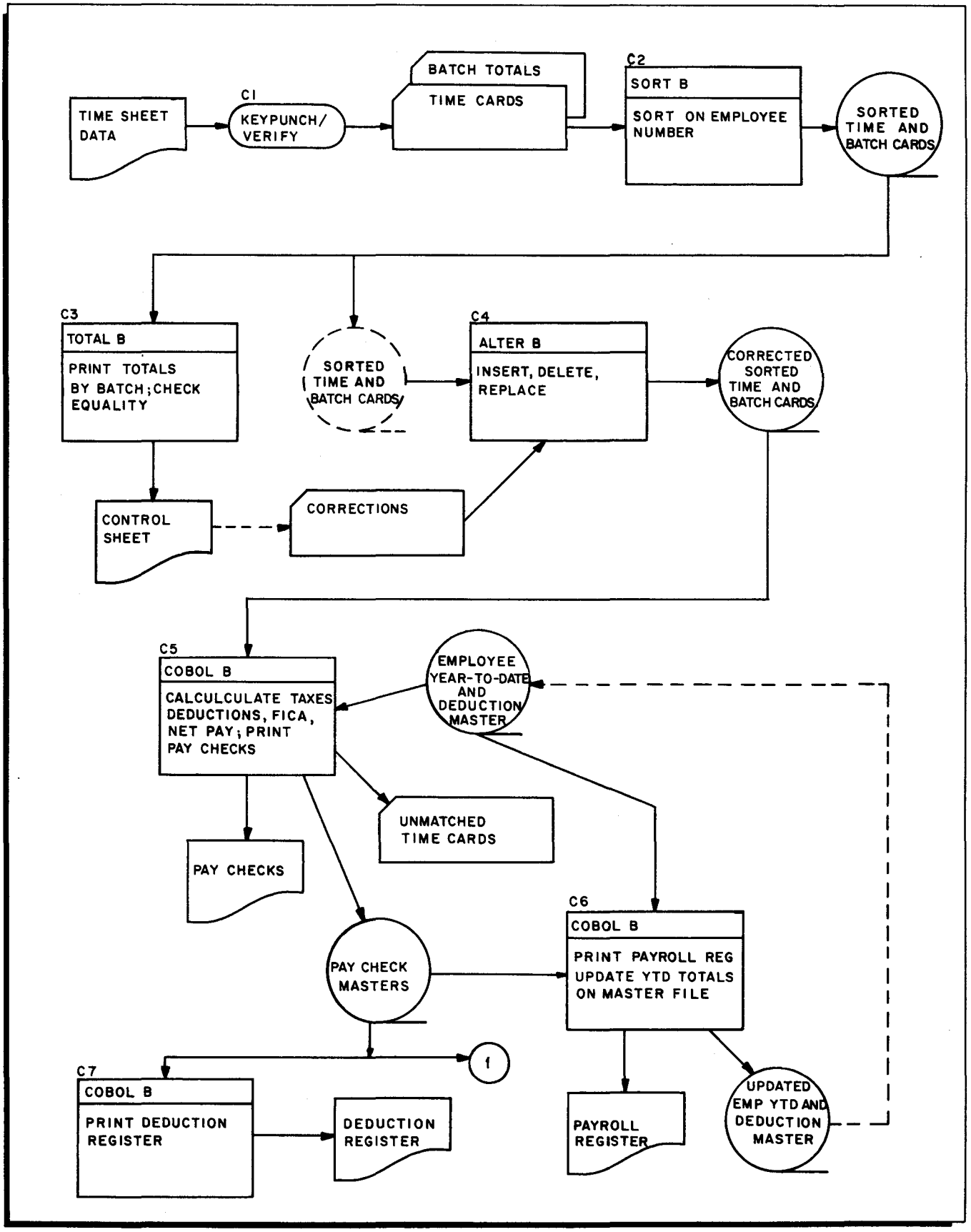


Figure 9-12. Computer System: Payroll Processing

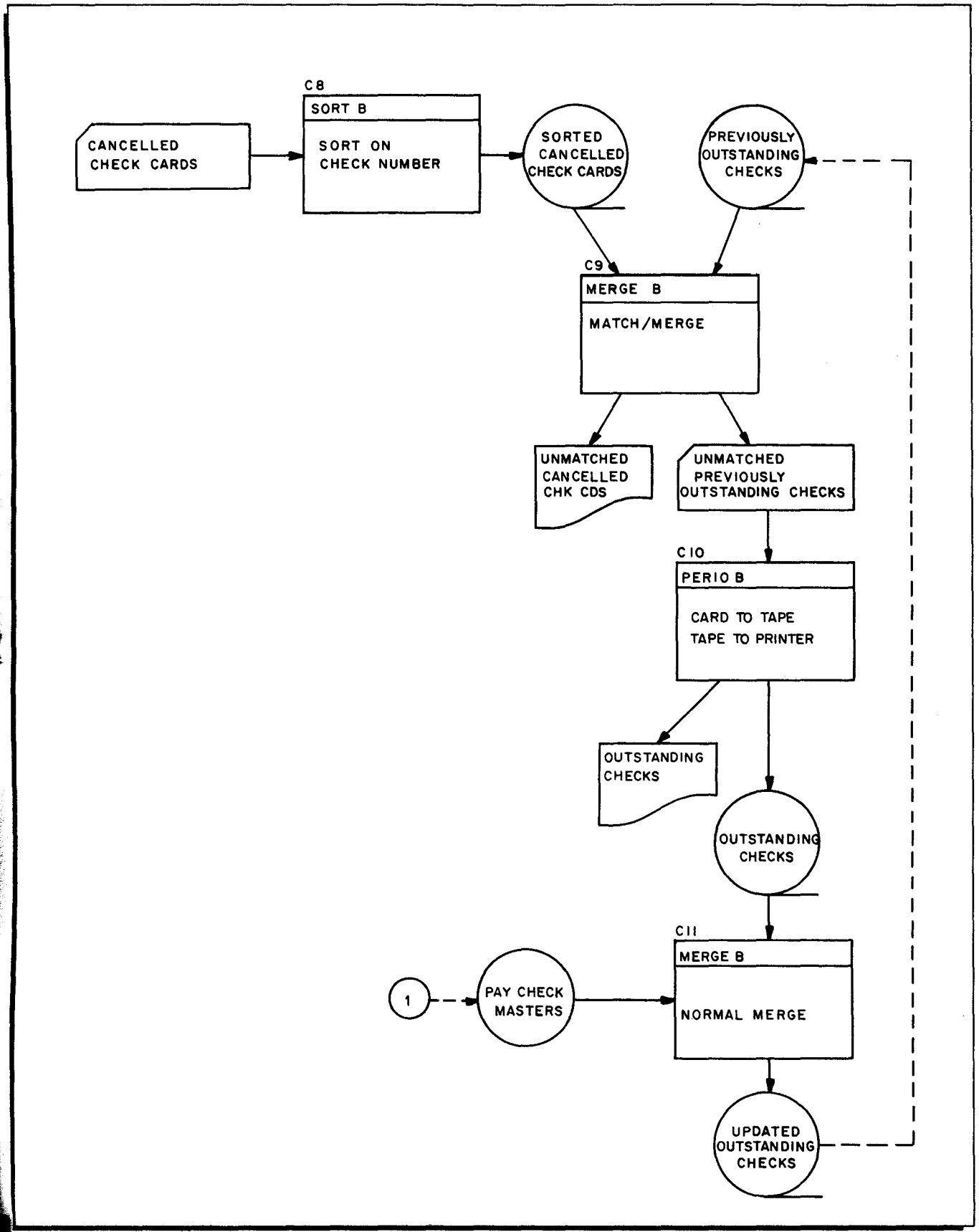


Figure 9-12 (cont). Computer System: Payroll Processing

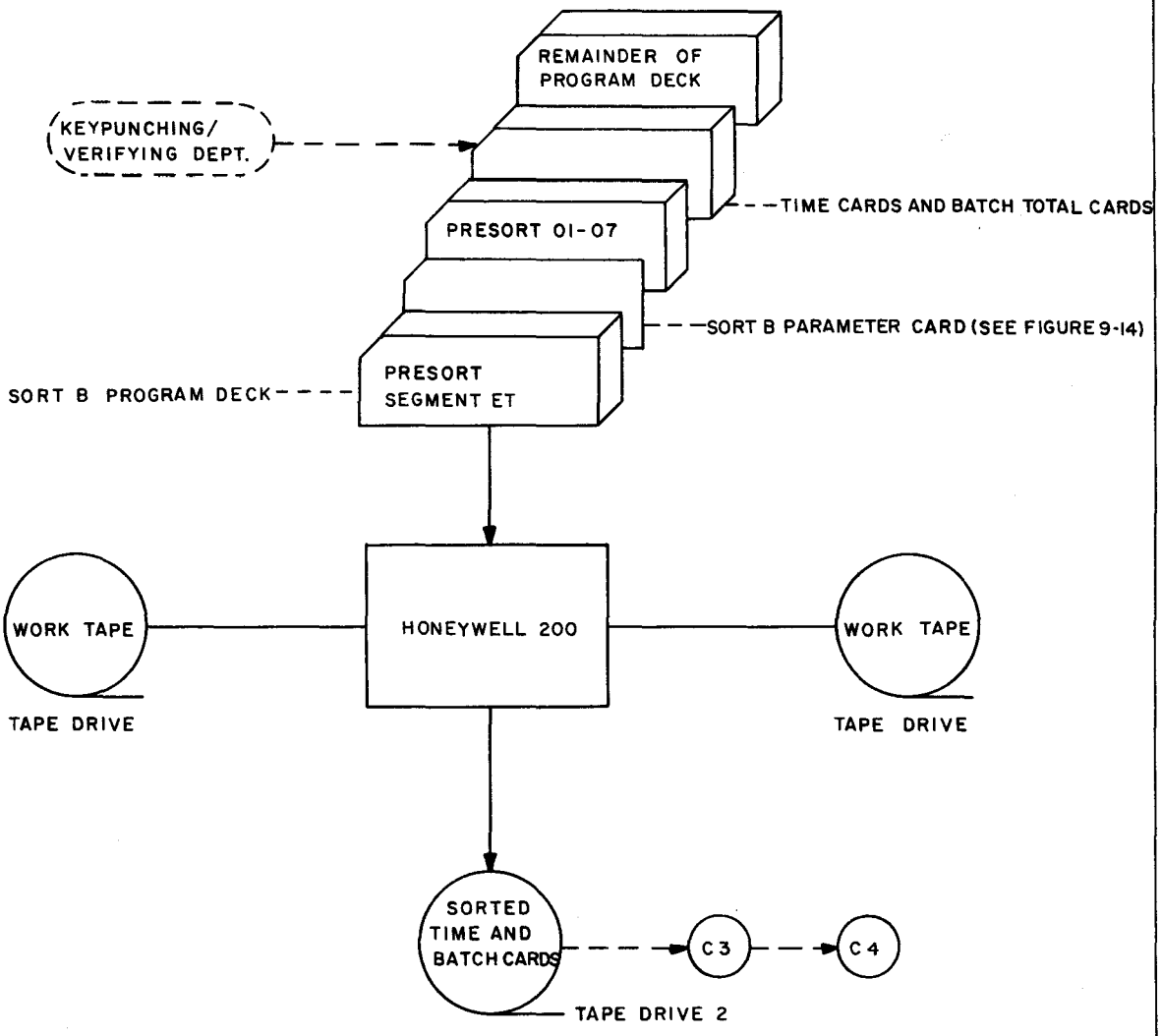


Figure 9-13. Run C2: Sort B Setup

EASYTAB - SORT B

Date _____

I.D. C2

APPLICATION SORT OF TIME & BATCH TOTAL CARDS Author _____

SORT B
1 5

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
C			
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

NO. OF REELS OF INPUT	MACHINE SIZE	INPUT BLOCKING ②	OUTPUT BLOCKING ②
10	11	15 16	17 18
1 Thru 9	Δ = 8K 3 = 12K 4 = 16K	ΔΔ = 02	ΔΔ = 02

Employee Number (Blanks in clock # field of batch total cards will cause them to fall behind each department group)

Key 1	Key 2	Key 3	Key 4
0110			
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification

61 70

Output Reel Identification

S-TIME-CDS
71 80

① Input tape(s) may contain no more than 40,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 9-14. Run C2: Sort B Parameter Card

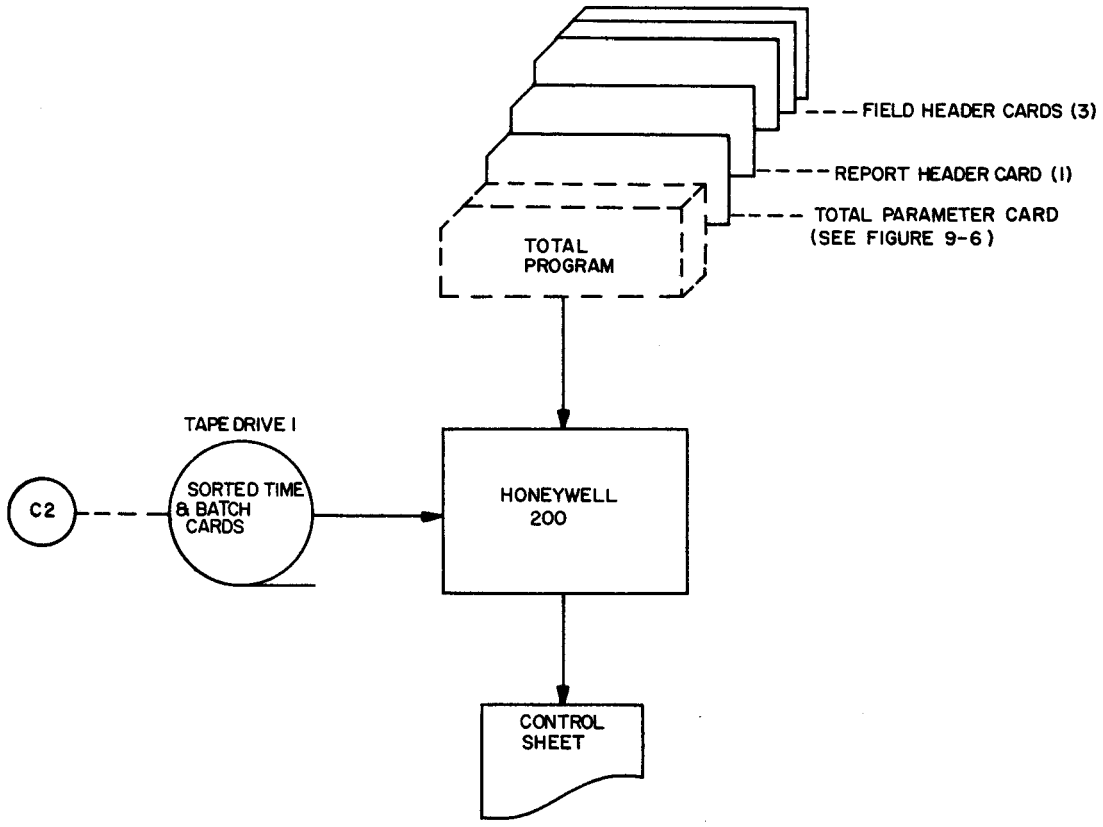


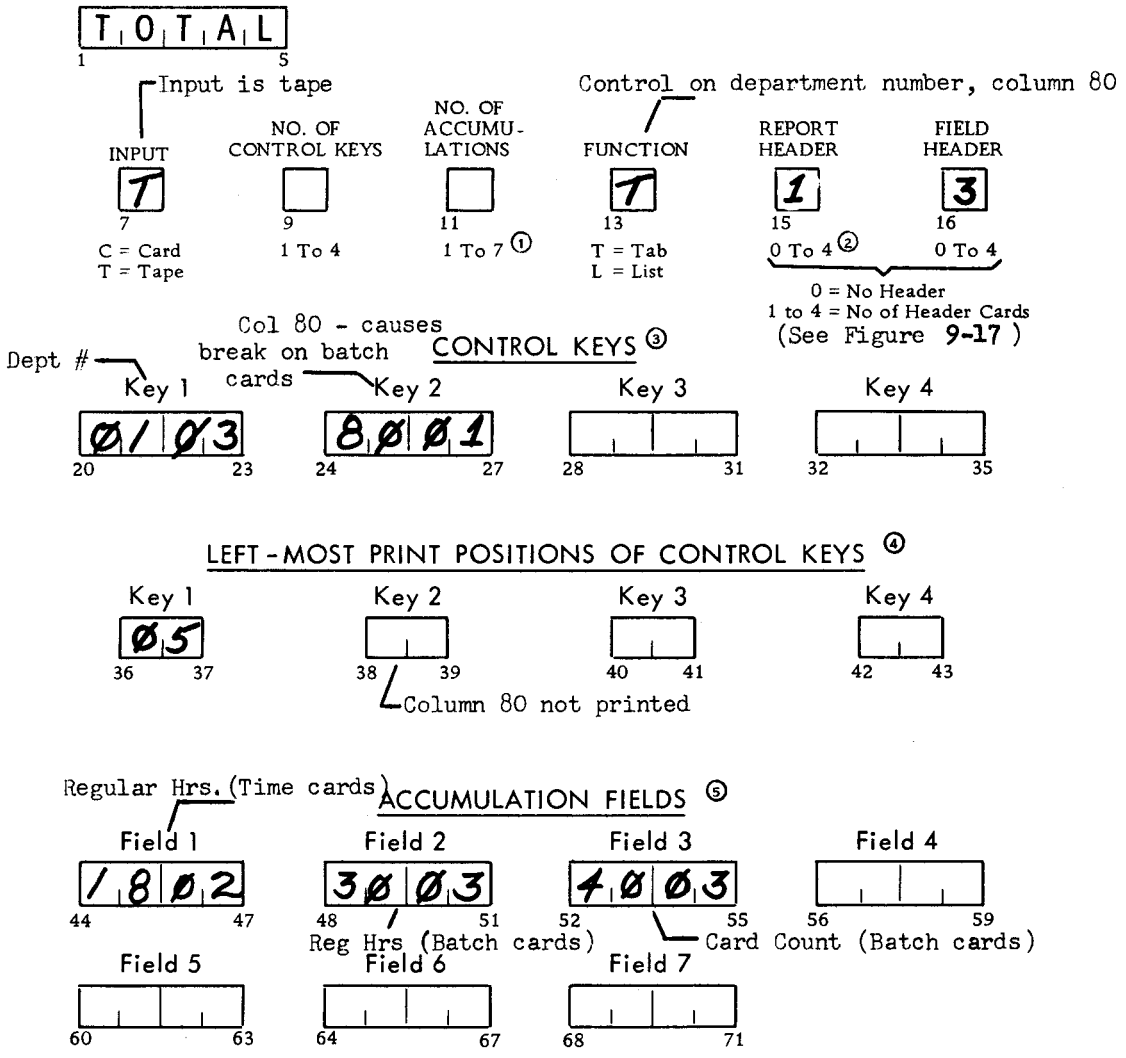
Figure 9-15. Run C3: Total B Setup

EASYTAB - TOTAL

Date _____

I.D. C3

APPLICATION BALANCING OF TIME CARDS Author _____



① Indicates the highest accumulation key field used.

② Print positions 117-120 of the first line of a Report Header contain the Page Number.

③ Each key may not exceed ten characters.

④ Total number of print positions may not exceed 36 characters.

⑤ The print positions for the accumulations are fixed as follows:
Field 1 = 37 to 48; Field 2 = 49 to 60; Field 3 = 61 to 72; Field 4 = 73 to 84;
Field 5 = 85 to 96; Field 6 = 97 to 108; Field 7 = 109 to 120.

Figure 9-16. Run C3: Total B Parameter Card

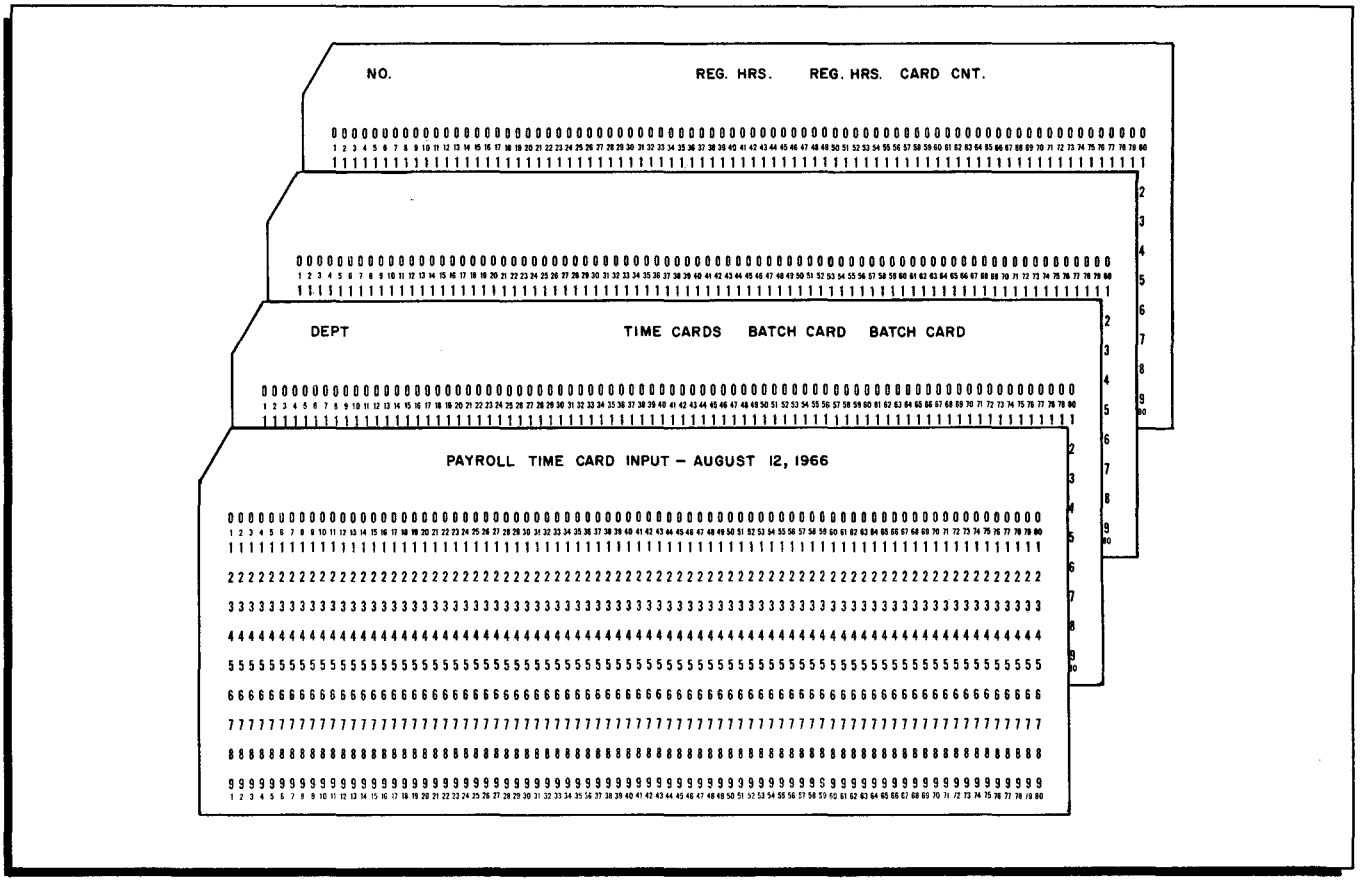


Figure 9-17. Run C3: Total B Report Header and Field Header Cards

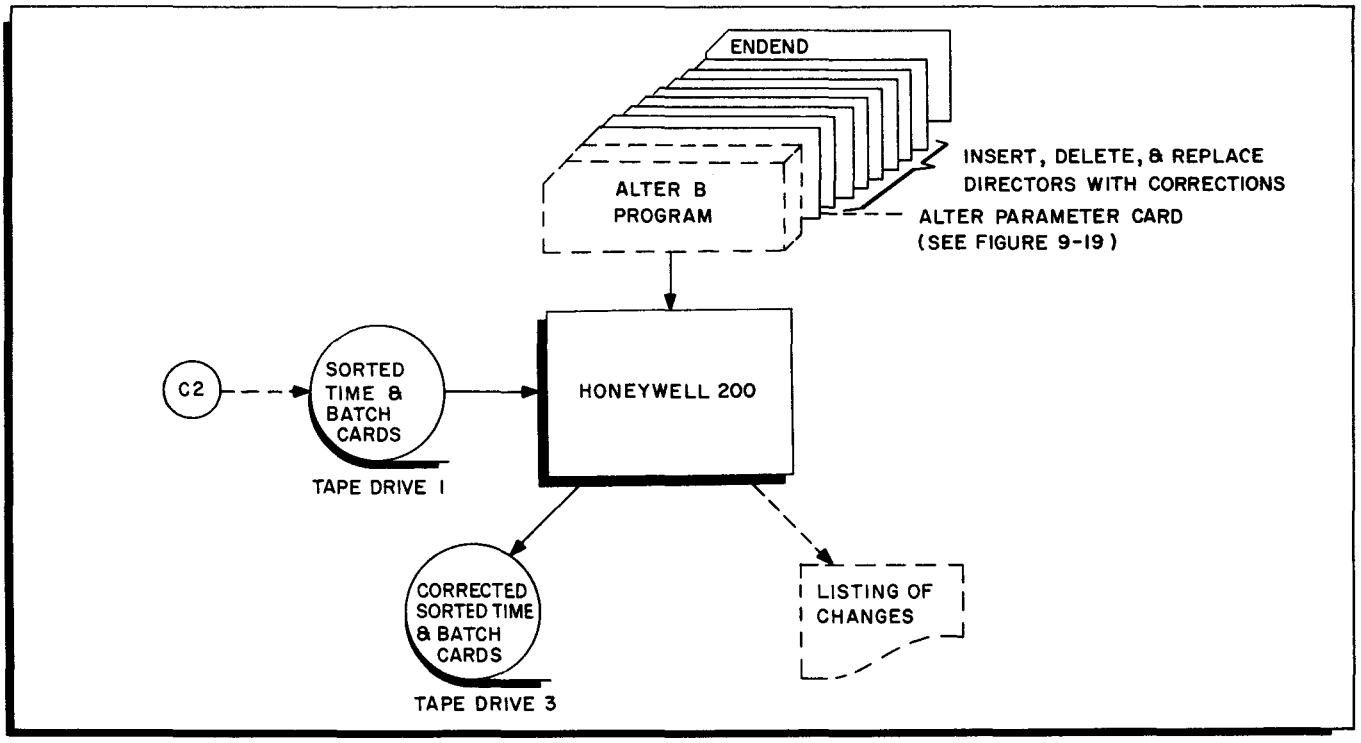


Figure 9-18. Run C4: Alter B Setup

EASYTAB - ALTER

Date _____

I.D. C4

APPLICATION CORRECT TIME CARDS Author _____

ALTER PARAMETER CARD - First Card.

ALTER	FILE ORDER	NO. OF KEYS
1 5	A 6	1 7
	A = Ascending D = Descending	1 to 8

Key 1	Key 2	Key 3	Key 4	Key 5
Ø1 1 Ø				
8 11	12 15	16 19	20 23	24 27

Key 6	Key 7	Key 8
28 31	32 35	36 39

INSERT
1 6

"INSERT" DIRECTOR - Placed before Card(s) to be added to tape file.

REPLACE
1 7

"REPLACE" DIRECTOR - Placed before Card(s) to be changed on tape file.

DELETE
1 6

"DELETE" DIRECTOR - Placed before Card(s) to be deleted from tape file.

ENDEND
1 6

END CARD - Last Card.

Figure 9-19. Run C4: Alter B Parameter Card

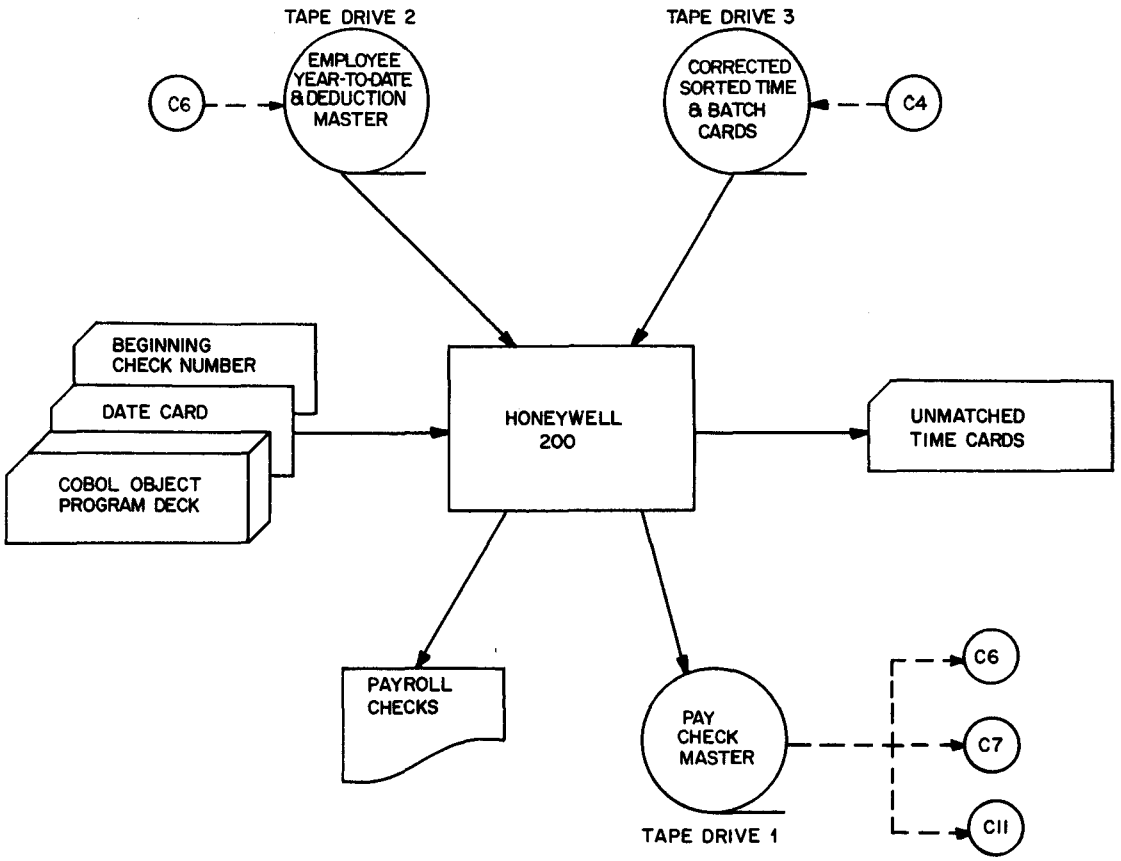


Figure 9-20. Run C5: COBOL B Program Setup

Honeywell
ELECTRONIC DATA PROCESSING

EASYTAB CODING FORM 1

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PAGE 1 OF _____

PROGRAM CALCTX - RUN C5 PROGRAMMER _____ DATE _____ REV. NO. _____

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
01	00 10		IDENTIFICATION DIVISION.			
01	00 20		PROGRAM-I.D. CALCTX.			
01	00 30		AUTHOR. T. ELLIOTT.			
01	00 40		DATE-WRITTEN.			
01	00 50		REMARKS. COBOL B PROGRAM TO CALCULATE TAXES,			
			DEDUCTIONS & PRINT PAY CHECKS.			
01	00 60		ENVIRONMENT DIVISION.			
01	00 70		CONFIGURATION SECTION.			
01	00 80		SOURCE-COMPUTER. MODEL-1,2,0.			
01	00 90		OBJECT-COMPUTER. MODEL-1,2,0, MEMORY SIZE 12288 CHARACTERS,			
			SINGLE-BUFFER WITH EDIT-OPTION.			
01	01 00		SPECIAL-NAMES. SENSE-SWITCH 1 ON STATUS IS SW1,			
01	01 10		SENSE-SWITCH 2 ON STATUS IS SW2,			
01	01 20		SENSE-SWITCH 3 ON STATUS IS SW3,			
01	01 30		SENSE-SWITCH 4 ON STATUS IS SW4,			
			PAGE IS TOPPGE.			
01	01 40		INPUT-OUTPUT SECTION.			
01	01 50		FILE-CONTROL.			
01	01 60		SELECT OCHK-F ASSIGN TO PRINTER.			PAYROLL CHECK FILE
01	01 70		SELECT OERR-F ASSIGN TO CARD-PUNCH.			UNM. TIME CARDS
01	01 80		~~SELECT ASSIGN TO CARD-READER.~~			
01	01 90		SELECT IMST-F ASSIGN TO INPUT-TAPE 2.			EMP YTD & DED.
01	02 00		SELECT ITME-F ASSIGN TO INPUT-TAPE 3.			CORR. & SORTED TIME
01	02 10		SELECT OPCM-F ASSIGN TO OUTPUT-TAPE 1.			CDS PAY CHK MASTERS
01	02 20		DATA DIVISION.			
01	02 30		FILE SECTION.			

Fill in 6 character program name.

Fill in program documentation

If using special names - put period (.) at end of last special name.

Fill in 6 character file names.

Fill in 6 character tape use. "Δ Input" or "Output"

Fill in tape unit assignments, Numbers 1 thru 3.

NOTE: Statements which are not used should be lined thru.

Figure 9-21. Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM CALCTX - RUN C5 PROGRAMMER DATE REV. NO.

PAGE 2 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	Ø Ø 1 Ø		FD	ITME-F	BLOCK CONTAINS 2 RECORDS.	①
	Ø Ø 2 Ø				LABEL RECORDS ARE STANDARD.	②
	Ø Ø 3 Ø				VALUE OF IDENTIFICATION IS "S-TIME-CDS".	③
	Ø Ø 4 Ø				DATA RECORD IS ITME-R.	④
	Ø Ø 5 Ø		Ø1	ITME-R.		④
	Ø Ø 6 Ø			Ø2 ITEMPN. ~~PICTURE IS~~	SEE FIGURE 9-2 FOR	⑤
	Ø Ø 6 5			Ø3 ITDEPT PICTURE IS 9(3).	RECORD LAYOUT OF	
	Ø Ø 7 Ø			Ø3 ITCLKN PICTURE IS 9(7).	THIS FILE.	
	Ø Ø 7 5			Ø2 ITNAME PICTURE IS A(3).		
	Ø Ø 8 Ø			Ø2 ITREGR PICTURE IS 99V99.		
	Ø Ø 8 5			Ø2 ITREGH PICTURE IS 99.		
	Ø Ø 9 Ø			Ø2 ITOTR PICTURE IS 99V99.		
	Ø Ø 9 5			Ø2 ITOTH PICTURE IS 99V9.		
	Ø 1 Ø Ø			Ø2 ITCAMT. ~~PICTURE IS~~		
	Ø 1 Ø 5			Ø3 ITGRSS PICTURE IS 9(4)V99.		
	Ø 1 1 Ø			Ø3 ITFEDT PICTURE IS 9(4)V99.		
	Ø 1 1 5			Ø3 ITSTTX PICTURE IS 9(4)V99.		
	Ø 1 2 Ø			Ø3 ITFICA PICTURE IS 99V99.		
	Ø 1 2 5			Ø3 ITMISC PICTURE IS 99V99.		
	Ø 1 3 Ø			Ø3 ITCRUN PICTURE IS 9(3)V99.		
	Ø 1 3 5			Ø3 ITBNDS PICTURE IS 9(3)V99.		
	Ø 1 4 Ø			Ø3 ITHLTH PICTURE IS 99V99.		
	Ø 1 4 5			Ø3 ITLIFE PICTURE IS 99V99.		
	Ø 1 5 Ø			Ø3 ITNET PICTURE IS 9(4)V99.		
	Ø 1 5 5			Ø2 ITDATE PICTURE IS 9(4).		
	Ø 1 6 Ø			PICTURE IS		
	Ø 1 6 5			PICTURE IS		
	Ø 1 7 Ø			PICTURE IS		
	Ø 1 7 5			PICTURE IS		
	Ø 1 8 Ø			PICTURE IS		
	Ø 1 8 5			PICTURE IS		
	Ø 1 9 Ø			PICTURE IS		
	Ø 1 9 5			PICTURE IS		

LEGEND

①

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

③

TAPE FILE - If label is "STANDARD" fill in 1Ø character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

④

ALL FILES - Fill in 6 character record name.

⑤

ALL FILES - Fill in Level No. (Ø2 to Ø5) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED / PUNCH / CARD FORM NO.

PROGRAM CALCTX RUN C5 PROGRAMMER DATE REV. NO.

PAGE 3 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	IMST-F	BLOCK CONTAINS 2 RECORDS.	①
	0020				LABEL RECORDS ARE STANDARD.	②
	0030				VALUE OF IDENTIFICATION IS "EMPMST-DED".	③
	0040				DATA RECORD IS IMST-R.	④
	0050		01	IMST-R.		④
	0060			02	IMEMPN. ~~PICTURE IS~~	⑤
	0065			03	IMDEPT PICTURE IS 9(3).	
	0070			03	IMCLKN PICTURE IS 9(7). SEE FIGURE 9-5 FOR	
	0075			02	IMNAME PICTURE IS A(10). RECORD LAYOUT OF	
	0080			02	IMGRSS PICTURE IS 9(5)V99. THIS FILE.	
	0085			02	IMFEDT PICTURE IS 9(5)V99.	
	0090			02	IMSTTX PICTURE IS 9(4)V99.	
	0095			02	IMFICA PICTURE IS 9(4)V99.	
	0100			02	IMMISC PICTURE IS 9(4)V99.	
	0105			02	IMNET PICTURE IS 9(5)V99.	
	0110			02	IMDPND PICTURE IS 99.	
	0115			02	IMCRUN PICTURE IS 999V99.	
	0120			02	IMBNDS PICTURE IS 999V99.	
	0125			02	IMHCDE PICTURE IS 9.	
	0130			02	IMLCDE PICTURE IS 9.	
	0135			02	FILLER PICTURE IS X(6).	
	0140			02	IMCDE PICTURE IS X.	
	0145				PICTURE IS	
	0150				PICTURE IS	
	0155				PICTURE IS	
	0160				PICTURE IS	
	0165				PICTURE IS	
	0170				PICTURE IS	
	0175				PICTURE IS	
	0180				PICTURE IS	
	0185				PICTURE IS	
	0190				PICTURE IS	
	0195				PICTURE IS	

LEGEND

①
ALL FILES - Fill in 6 Character file name.
TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.
NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②
TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.
NON-TAPE-FILE - Fill in "OMITTED".

③
TAPE FILE - If label is "STANDARD" fill in 10 character nome that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.
NON-TAPE-FILES - Line thru (Do not use) this line.

④
ALL FILES - Fill in 6 character record name.

⑤
ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED / PUNCH / CARD FORM NO.

PROGRAM CALCTX - RUN C5 PROGRAMMER DATE REV. NO. PAGE 4 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY	
	0010		FD	OPCM-F	BLOCK CONTAINS 2 RECORDS.		①
	0020				LABEL RECORDS ARE STANDARD.		②
	0030				VALUE OF IDENTIFICATION IS "PAYCHK-MST".		③
	0040				DATA RECORD IS OPCM-R.		④
	0050		01	OPCM-R.			④
	0060			02	OPEMPN. ~~PICTURE IS~~		⑤
	0065			03	OPDEPT PICTURE IS 9(3).		
	0070			03	OPCLKN PICTURE IS 9(7). SEE FIGURE 9-6 FOR		
	0075			02	OPNAME PICTURE IS A(3). RECORD LAYOUT OF		
	0080			02	OPCHKN PICTURE IS 9(9). THIS FILE.		
	0085			02	FILLER PICTURE IS X(4).		
	0090			02	OPCAMT. ~~PICTURE IS~~		
	0095			03	OPGRSS PICTURE IS 9(4)V99.		
	0100			03	OPFEDT PICTURE IS 9(4)V99.		
	0105			03	OPSTTX PICTURE IS 9(4)V99.		
	0110			03	OPFICA PICTURE IS 99V99.		
	0115			03	OPMISC PICTURE IS 99V99.		
	0120			03	OPCRUN PICTURE IS 999V99.		
	0125			03	OPBNDS PICTURE IS 999V99.		
	0130			03	OPHLTH PICTURE IS 99V99.		
	0135			03	OPLIFE PICTURE IS 99V99.		
	0140			03	OPNET PICTURE IS 9(4)V99.		
	0145			03	OPDATE PICTURE IS 9(4).		
	0150				PICTURE IS		
	0155				PICTURE IS		
	0160				PICTURE IS		
	0165				PICTURE IS		
	0170				PICTURE IS		
	0175				PICTURE IS		
	0180				PICTURE IS		
	0185				PICTURE IS		
	0190				PICTURE IS		
	0195				PICTURE IS		

LEGEND

①
ALL FILES - Fill in 6 Character file name.
TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.
NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②
TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.
NON-TAPE-FILE - Fill in "OMITTED".

③
TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.
NON-TAPE-FILES - Line thru (Do not use) this line.

④
ALL FILES - Fill in 6 character record name.

⑤
ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED / PUNCH / CARD FORM NO.

PROGRAM CALCTX RUN C5 PROGRAMMER DATE REV. NO. PAGE 5 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	OCHK-F	BLOCK CONTAINS RECORDS.	(1)
	0020				LABEL RECORDS ARE OMITTED.	(2)
	0030				VALUE OF IDENTIFICATION IS .	(3)
	0040				DATA RECORD IS OCHK-1, OCHK-2.	(4)
	0050		01	OCHK-1.		(4)
	0060			02	FILLER PICTURE IS X(3). SEE FIGURE 9-8 FOR	(5)
	0065			02	OCDATE PICTURE IS 99B99B99. RECORD LAYOUT OF	
	0070			02	FILLER PICTURE IS X(4). THIS FILE.	
	0075			02	OCEMPN PICTURE IS 9(3)B9(7).	
	0080			02	FILLER PICTURE IS X(13).	
	0085			02	OCGRSS PICTURE IS Z(4).99.	
	0090			02	FILLER PICTURE IS XX. LINE 1 OF PAY CHECK	
	0095			02	OCFEDT PICTURE IS Z(4).99	
	0100			02	FILLER PICTURE IS XX.	
	0105			02	OCSTTX PICTURE IS Z(4).99.	
	0110			02	FILLER PICTURE IS XX.	
	0115			02	OCFICA PICTURE IS ZZ.ZZ.	
	0120			02	FILLER PICTURE IS X	
	0125			02	OCMISC PICTURE IS ZZ.ZZ.	
	0130			02	FILLER PICTURE IS X.	
	0135			02	OCCRUN PICTURE IS ZZZ.ZZ.	
	0140			02	FILLER PICTURE IS X.	
	0145			02	OCBNDS PICTURE IS ZZZ.ZZ.	
	0150			02	FILLER PICTURE IS X.	
	0155			02	OCINS PICTURE IS ZZ.ZZ.	
	0160			02	FILLER PICTURE IS X(23).	
	0165				PICTURE IS	
	0170				PICTURE IS	
	0175				PICTURE IS	
	0180				PICTURE IS	
	0185				PICTURE IS	
	0190				PICTURE IS	
	0195				PICTURE IS	

LEGEND

(1)

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

(3)

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

(4)

ALL FILES - Fill in 6 character record name.

(5)

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PROGRAM CALCTX RUN C5 PROGRAMMER _____ DATE _____ REV. NO. _____

PUNCHING INST. CODED PUNCH CARD FORM NO.

PAGE 6 OF _____

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD		BLOCK CONTAINS __ RECORDS.	①
	0020				LABEL RECORDS ARE _____.	②
	0030				VALUE OF IDENTIFICATION IS _____.	③
	0040				DATA RECORD IS _____.	④
	0050		01		OCHK-2.	④
	0060			02	FILLER PICTURE IS X(3).	⑤
	0065			02	OCCHKN PICTURE IS 9(9).	
	0070			02	FILLER PICTURE IS XX.	
	0075			02	OCNAME PICTURE IS ABA(9).	
	0080			02	FILLER PICTURE IS X(14).	
	0085			02	OCAMT PICTURE IS $*****.**.	
	0090			02	FILLER PICTURE IS X. LINE 2	
	0095			02	OC-GR PICTURE IS Z(5).99. ON PAY	
	0100			02	FILLER PICTURE IS XX. CHECK	
	0105			02	OC-FED PICTURE IS Z(5).99.	
	0110			02	FILLER PICTURE IS XX.	
	0115			02	OC-ST PICTURE IS Z(4).99.	
	0120			02	FILLER PICTURE IS XXX.	
	0125			02	OC-FCA PICTURE IS Z(4).99.	
	0130			02	FILLER PICTURE IS XXX.	
	0135			02	OC-MSC PICTURE IS Z(4).99.	
	0140			02	FILLER PICTURE IS XXX.	
	0145			02	OC-NET PICTURE IS Z(5).99.	
	0150			02	FILLER PICTURE IS X(23).	
	0155				PICTURE IS	
	0160				PICTURE IS	
	0165				PICTURE IS	
	0170				PICTURE IS	
	0175				PICTURE IS	
	0180				PICTURE IS	
	0185				PICTURE IS	
	0190				PICTURE IS	
	0195				PICTURE IS	

LEGEND

①

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

③

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

④

ALL FILES - Fill in 6 character record name.

⑤

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO

PROGRAM CALCTX - RUN C5 PROGRAMMER DATE REV. NO.

PAGE 7 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	OERR-F ~~BLOCK CONTAINS RECORDS,~~		
	0020			LABEL RECORDS ARE OMITTED.		
	0030			~~VALUE OF IDENTIFICATION IS~~		
	0040			DATA RECORD IS OERR-R.		
	0050		01	OERR-R.		
	0060			02 FILLER PICTURE IS X(80).	RECORD LAYOUT IS	
	0065			PICTURE IS	IDENTICAL TO THE	
	0070			PICTURE IS	TIME CARD FORMAT	
	0075			PICTURE IS	(FIGURE 9-2)	
	0080			PICTURE IS		
	0085			PICTURE IS		
	0090			PICTURE IS		
	0095			PICTURE IS		
	0100			PICTURE IS		
	0105			PICTURE IS		
	0110			PICTURE IS		
	0115			PICTURE IS		
	0120			PICTURE IS		
	0125			PICTURE IS		
	0130			PICTURE IS		
	0135			PICTURE IS		
	0140			PICTURE IS		
	0145			PICTURE IS		
	0150			PICTURE IS		
	0155			PICTURE IS		
	0160			PICTURE IS		
	0165			PICTURE IS		
	0170			PICTURE IS		
	0175			PICTURE IS		
	0180			PICTURE IS		
	0185			PICTURE IS		
	0190			PICTURE IS		
	0195			PICTURE IS		

LEGEND

(1)

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

(3)

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

(4)

ALL FILES - Fill in 6 character record name.

(5)

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

Honeywell
ELECTRONIC DATA PROCESSING

COBOL PROGRAMMING FORM

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM CALCTX- RUN C5 PROGRAMMER DATE REV. NO.

PAGE 8 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY
			WORKING-STORAGE SECTION.		
			Ø1 DATE, PICTURE IS 9(6) VALUE IS ZERO.		
			Ø1 CHKNO, PICTURE IS 9(9) VALUE IS ZERO.		
			Ø1 NINE PICTURE IS X(10) VALUE IS "9999999999".		
			Ø1 SAV1 PICTURE IS 9(4)V99.		
			Ø1 TAXTABLE.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .195.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .172.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .156.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .139.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .115.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .097.		
			Ø2 FILLER PICTURE IS V999 VALUE IS .079.		
			5		
			Ø2 FILLER PICTURE IS V999 VALUE IS ZERO.		
			Ø1 TBL1 REDEFINES TAXTABLE.		
			Ø2 FTAX OCCURS 12 TIMES PICTURE IS V999.		
			Ø1 STAX PICTURE IS V99 VALUE IS .05.		
			Ø1 LIMIT PICTURE IS 999V99 VALUE IS 174.00.		
			Ø1 FICA-V, PICTURE IS V9999 VALUE IS .0358.		
			Ø1 FICA-1 PICTURE IS 99V99 VALUE IS ZERO.		
			Ø1 FICA-2 PICTURE IS 999V99 VALUE IS ZERO.		

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

Honeywell
ELECTRONIC DATA PROCESSING

COBOL PROGRAMMING FORM

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM CALCTX - RUN C5 PROGRAMMER DATE REV. NO.

PAGE 9 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY
			01	HLTH TABLE.	
				02 FILLER PICTURE IS 99V99 VALUE IS ZERO.	
				02 FILLER PICTURE IS 99V99 VALUE IS 07.50.	
				02 FILLER PICTURE IS 99V99 VALUE IS 15.78.	
			01	TBL2 REDEFINES HLTH TABLE.	
				02 HRATE OCCURS 3 TIMES PICTURE IS 99V99.	
			01	LIFE TABLE.	
				02 FILLER PICTURE IS 99V99 VALUE IS ZERO.	
				02 FILLER PICTURE IS 99V99 VALUE IS 03.75.	
				02 FILLER PICTURE IS 99V99 VALUE IS 07.25.	
			01	TBL3 REDEFINES LIFE TABLE.	
				02 LRATE OCCURS 3 TIMES PICTURE IS 99V99.	

Figure 9-21 (cont). Run C5: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

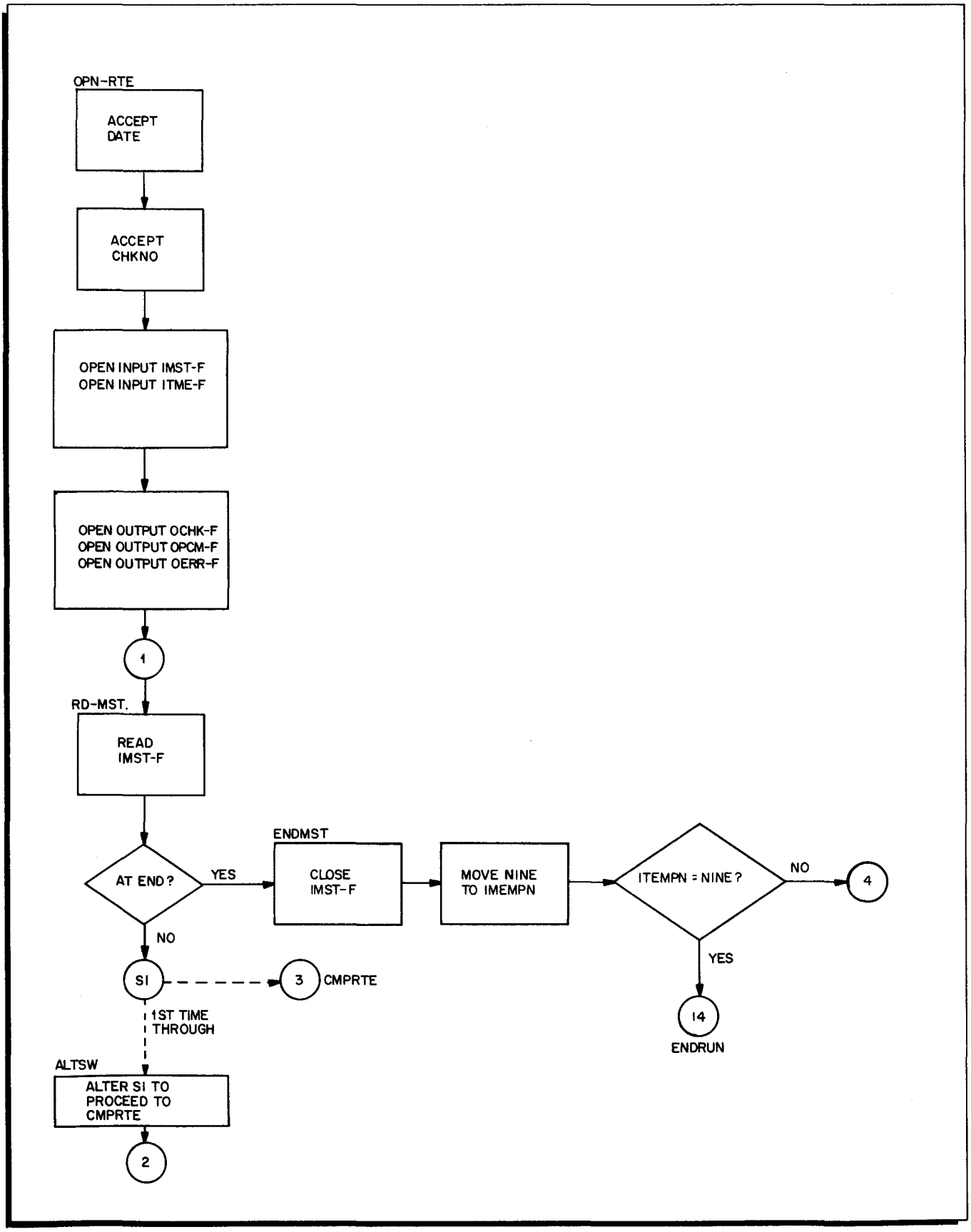


Figure 9-22. Run C5: COBOL PROCEDURE DIVISION Flow Chart

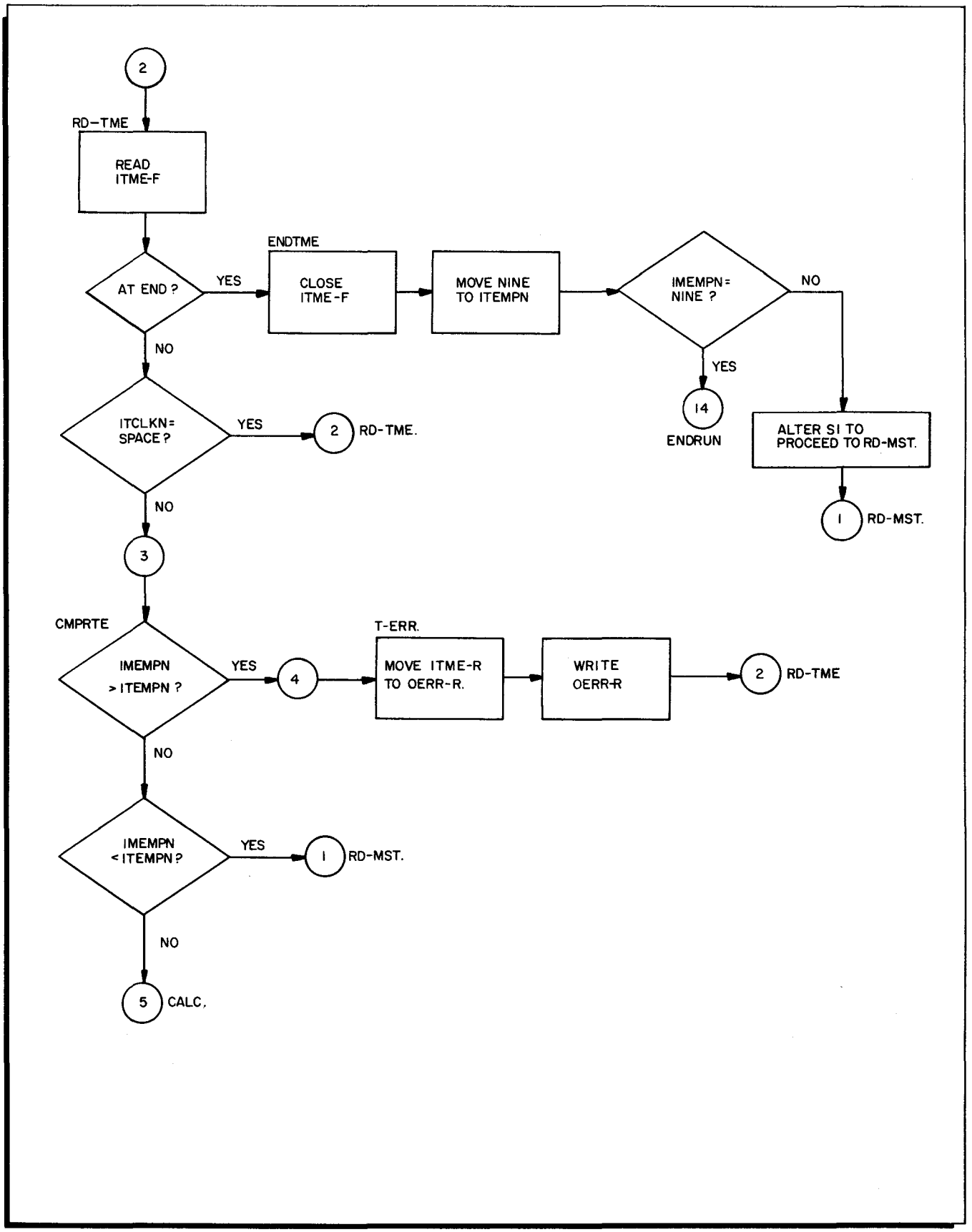


Figure 9-22 (cont). Run C5: COBOL PROCEDURE DIVISION Flow Chart

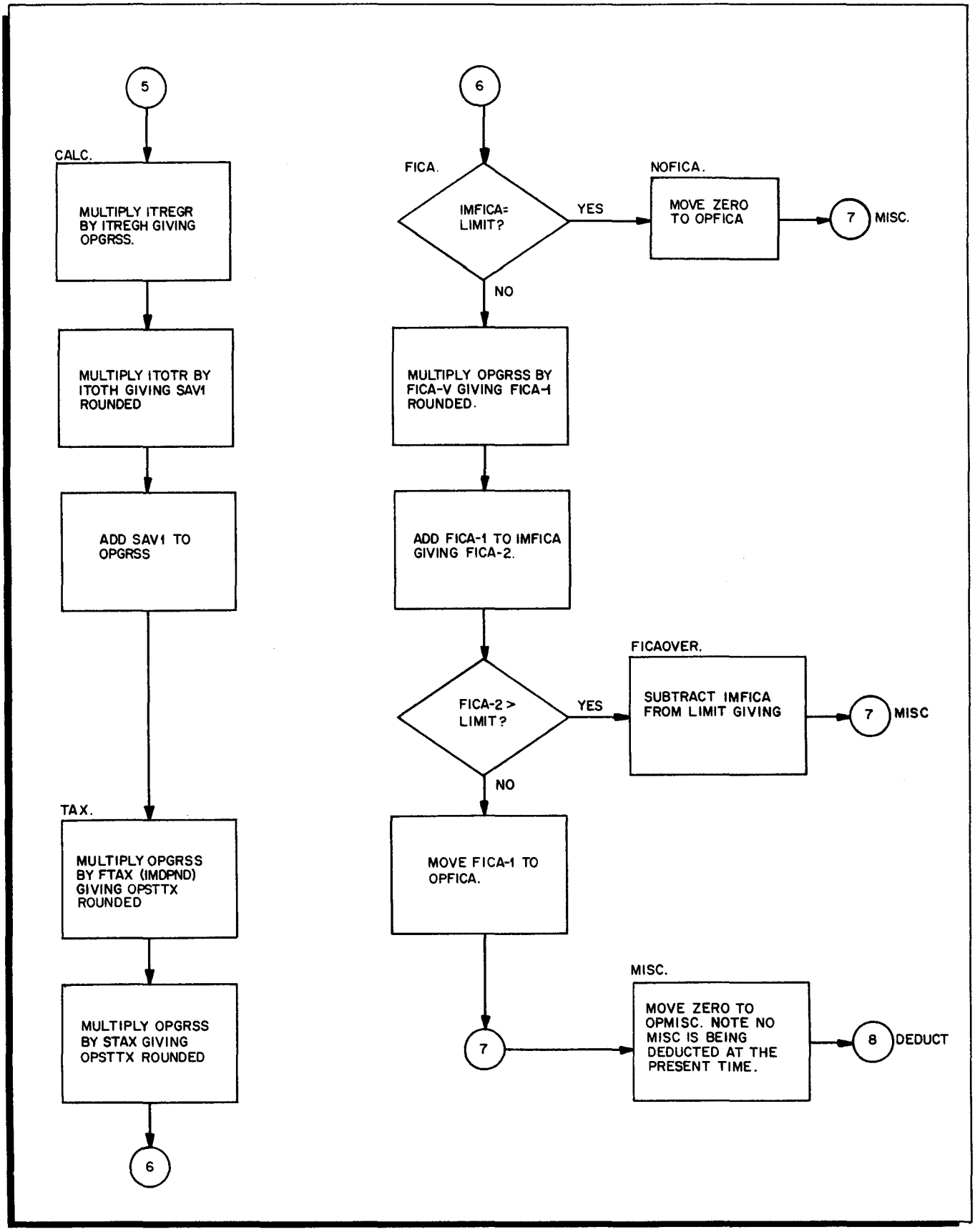


Figure 9-22 (cont). Run C5: COBOL PROCEDURE DIVISION Flow Chart

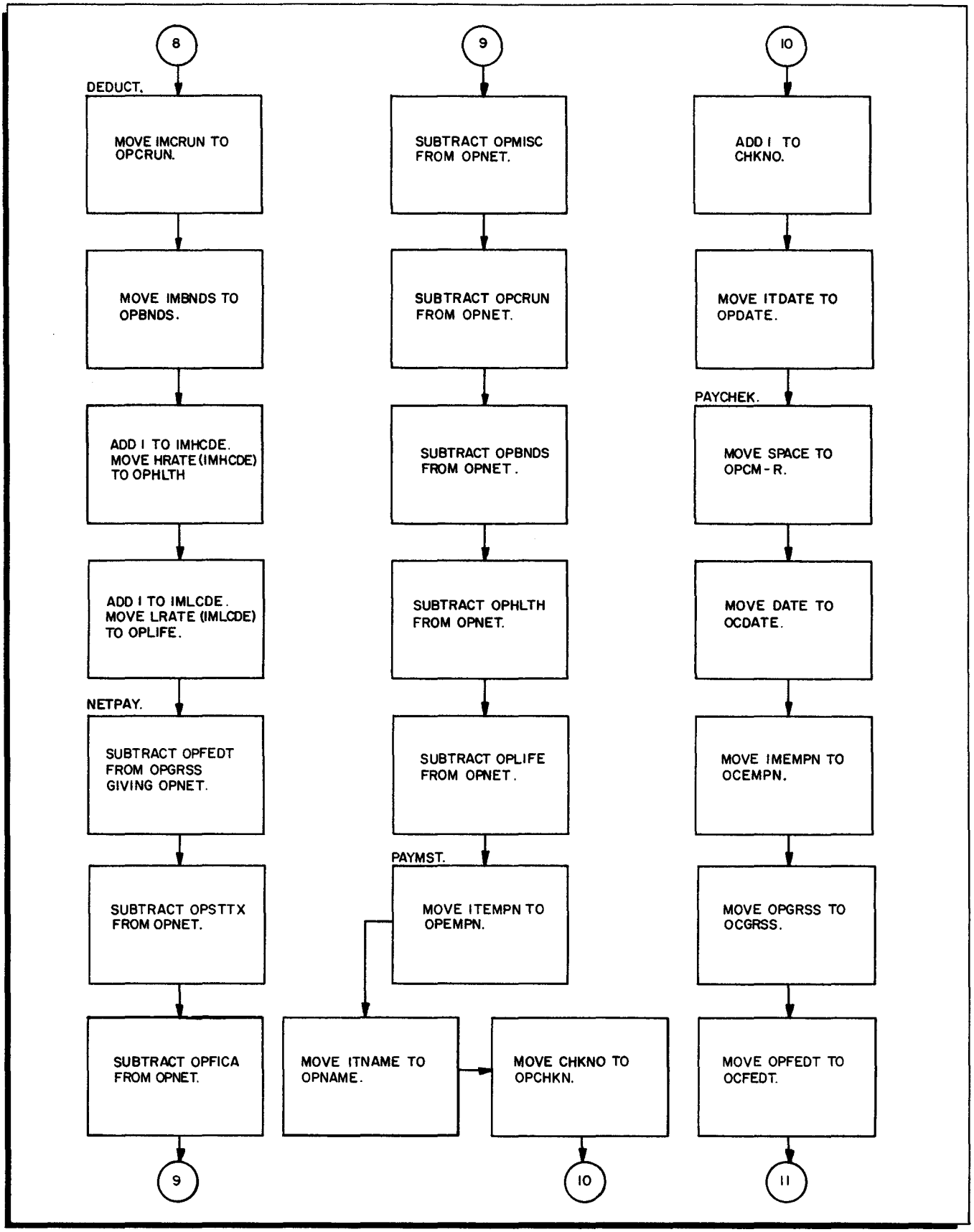


Figure 9-22 (cont). Run C5: COBOL PROCEDURE DIVISION Flow Chart

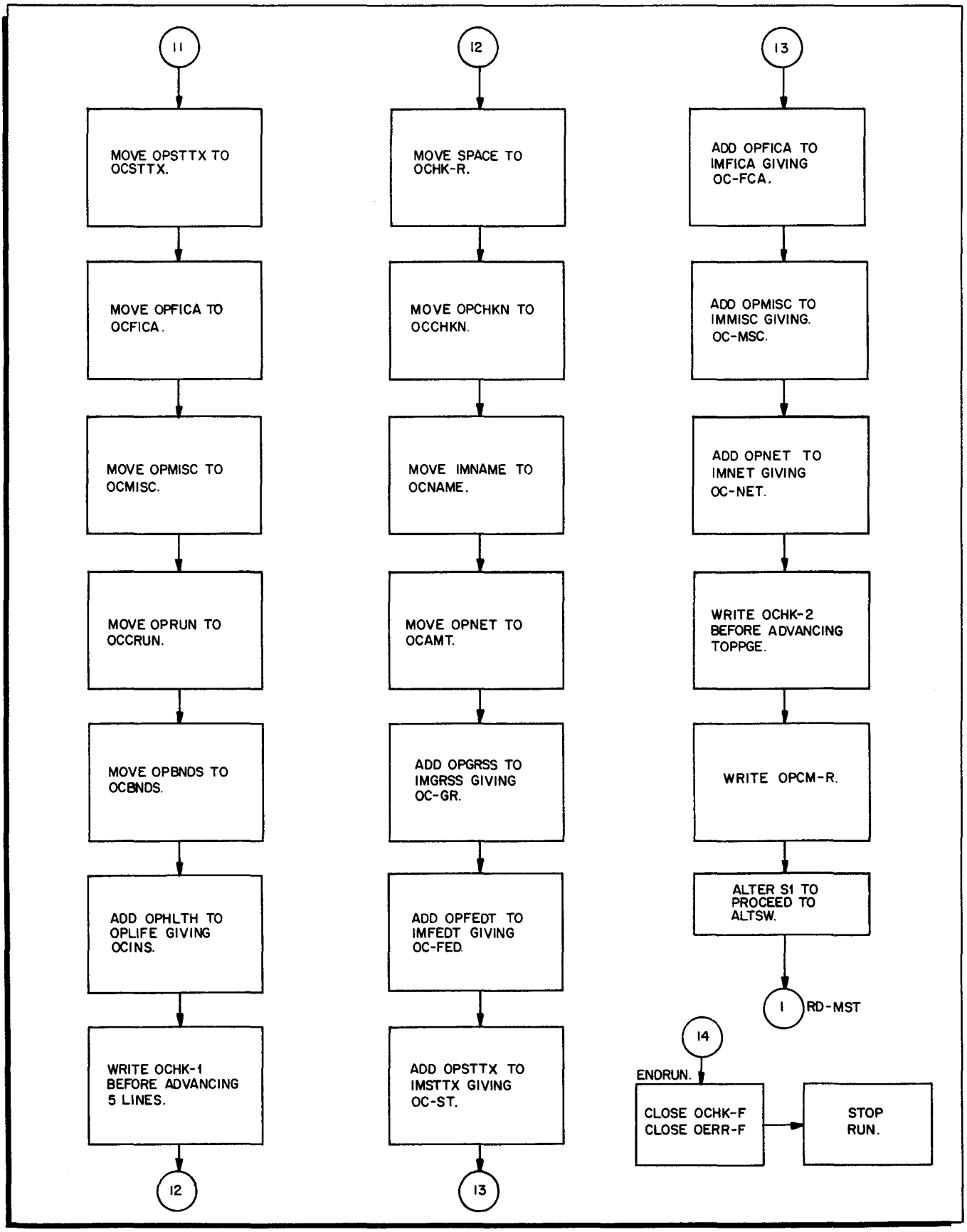


Figure 9-22 (cont). Run C5: COBOL PROCEDURE DIVISION Flow Chart

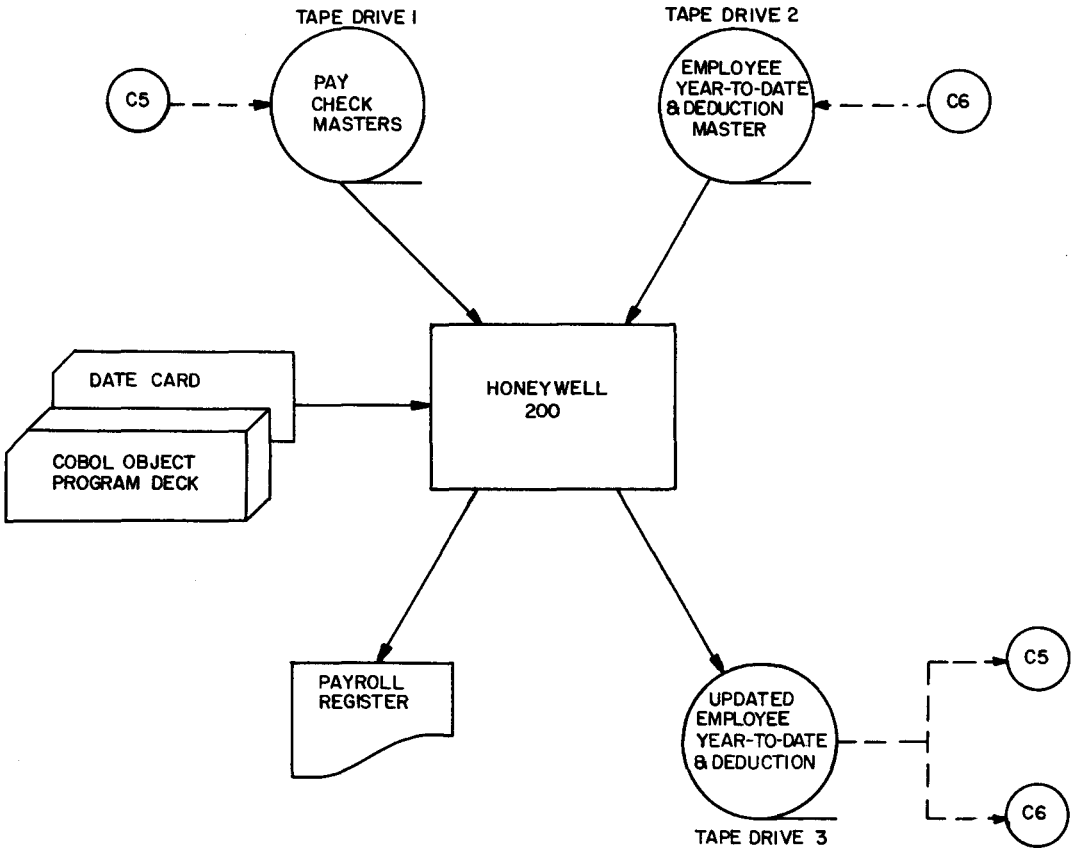


Figure 9-23. Run C6: COBOL B Program Setup

Honeywell
ELECTRONIC DATA PROCESSING

EASYTAB CODING FORM 1

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM UPDMST RUN C6 PROGRAMMER _____ DATE _____ REV. NO. ____ PAGE 1 OF _____

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY	
01	00 10		IDENTIFICATION DIVISION.			
01	00 20		PROGRAM-ID. UPDMST.			Fill in 6 character program name.
01	00 30		AUTHOR. T ELLIOTT.			
01	00 40		DATE-WRITTEN.			
01	00 50		REMARKS. COBOL B PROGRAM TO UPDATE YTD TOTALS &			
			PRINT PAYROLL REGISTER.			
01	00 60		ENVIRONMENT DIVISION.			Fill in program documentation
01	00 70		CONFIGURATION SECTION.			
01	00 80		SOURCE-COMPUTER. MODEL-1120.			
01	00 90		OBJECT-COMPUTER. MODEL-1120, MEMORY SIZE 12288 CHARACTERS.			
			WITH EDIT-OPTION.			
01	01 00		SPECIAL-NAMES. SENSE-SWITCH 1 ON STATUS IS SW1.			If using special names - put period (.) at end of last special name.
01	01 10		SENSE-SWITCH 2 ON STATUS IS SW2.			
01	01 20		SENSE-SWITCH 3 ON STATUS IS SW3.			
01	01 30		SENSE-SWITCH 4 ON STATUS IS SW4.			
			PAGE IS TOPPGE.			
01	01 40		INPUT-OUTPUT SECTION.			
01	01 50		FILE-CONTROL.			Fill in 6 character file names.
01	01 60		SELECT OPRG-F ASSIGN TO PRINTER.			
01	01 70		~~SELECT ASSIGN TO CARD-PUNCH.~~			Fill in 6 character tape use. "Δ Input" or "Output"
01	01 80		~~SELECT ASSIGN TO CARD-READER.~~			
01	01 90		SELECT OMST-F ASSIGN TO OUTPUT-TAPE 3.			Fill in tape unit assignments, Numbers 1 thru 3.
01	02 00		SELECT IMST-F ASSIGN TO INPUT-TAPE 2.			
01	02 10		SELECT IPCM-F ASSIGN TO INPUT-TAPE 1.			
01	02 20		DATA DIVISION.			NOTE: Statements which are not used should be lined thru.
01	02 30		FILE SECTION.			

Figure 9-24. Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO.

PROGRAM UPDMST RUN C6 PROGRAMMER DATE REV. NO.

PAGE 2 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY	
	0010		FD	IMST-F	BLOCK CONTAINS 2 RECORDS.		1
	0020				LABEL RECORDS ARE STANDARD.		2
	0030				VALUE OF IDENTIFICATION IS "EMPMST-DED".		3
	0040				DATA RECORD IS IMST-R.		4
	0050		01	IMST-R.			4
	0060			02	IMEMPN PICTURE IS 9(10).		5
	0065			02	FILLER PICTURE IS X(70).		
	0070				PICTURE IS		
	0075				PICTURE IS		
	0080				PICTURE IS		
	0085				PICTURE IS		
	0090				PICTURE IS		
	0095				PICTURE IS		
	0100				PICTURE IS		
	0105				PICTURE IS		
	0110				PICTURE IS		
	0115				PICTURE IS		
	0120				PICTURE IS		
	0125				PICTURE IS		
	0130				PICTURE IS		
	0135				PICTURE IS		
	0140				PICTURE IS		
	0145				PICTURE IS		
	0150				PICTURE IS		
	0155				PICTURE IS		
	0160				PICTURE IS		
	0165				PICTURE IS		
	0170				PICTURE IS		
	0175				PICTURE IS		
	0180				PICTURE IS		
	0185				PICTURE IS		
	0190				PICTURE IS		
	0195				PICTURE IS		

LEGEND

(1)
ALL FILES - Fill in 6 Character file name.
TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.
NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)
TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.
NON-TAPE-FILE - Fill in "OMITTED".

(3)
TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.
NON-TAPE-FILES - Line thru (Do not use) this line.

(4)
ALL FILES - Fill in 6 character record name.

(5)
ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-24 (cont). Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. (CODED / PUNCH / CARD FORM NO.)

PROGRAM UPDMST RUN C6 PROGRAMMER _____ DATE _____ REV. NO. _____ PAGE 3 OF _____

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	OMST-F	BLOCK CONTAINS 2 RECORDS.	①
	0020				LABEL RECORDS ARE STANDARD.	②
	0030				VALUE OF IDENTIFICATION IS "EMPMST-DED".	③
	0040				DATA RECORD IS OMST-R.	④
	0050		01	OMST-R		④
	0060			02	OMEMPN. ~~PICTURE IS~~	⑤
	0065			03	OMDEPT PICTURE IS 9(3).	
	0070			03	OMCLKN PICTURE IS 9(7).	
	0075			02	OMNAME PICTURE IS A(10).	
	0080			02	OMGRSS PICTURE IS 9(5)V99.	
	0085			02	OMFEDT PICTURE IS 9(5)V99.	
	0090			02	OMSTTX PICTURE IS 9(4)V99.	
	0095			02	OMFICA PICTURE IS 9(4)V99.	
	0100			02	OMMISC PICTURE IS 9(4)V99.	
	0105			02	OMNET PICTURE IS 9(5)V99.	
	0110			02	OMDPND PICTURE IS 99.	
	0115			02	OMCRUN PICTURE IS 999V99.	
	0120			02	OMBNDS PICTURE IS 999V99.	
	0125			02	OMHCDE PICTURE IS 9.	
	0130			02	OMLCDE PICTURE IS 9.	
	0135			02	FILLER PICTURE IS X(6).	
	0140			02	OMCDE PICTURE IS X.	
	0145				PICTURE IS	
	0150				PICTURE IS	
	0155				PICTURE IS	
	0160				PICTURE IS	
	0165				PICTURE IS	
	0170				PICTURE IS	
	0175				PICTURE IS	
	0180				PICTURE IS	
	0185				PICTURE IS	
	0190				PICTURE IS	
	0195				PICTURE IS	

LEGEND

①
ALL FILES - Fill in 6 Character file name.
TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.
NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②
TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.
NON-TAPE-FILE - Fill in "OMITTED".

③
TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.
NON-TAPE-FILES - Line thru (Do not use) this line.

④
ALL FILES - Fill in 6 character record name.

⑤
ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-24 (cont). Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO.

PROGRAM UPDMST RUN C6 PROGRAMMER DATE REV. NO.

PAGE 4 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	IPCM-F BLOCK CONTAINS 2 RECORDS.		①
	0020			LABEL RECORDS ARE STANDARD.		②
	0030			VALUE OF IDENTIFICATION IS "PAYCHK-MST".		③
	0040			DATA RECORD IS IPCM-R.		④
	0050		01	IPCM-R.		④
	0060			02 IPEMPN. ~~PICTURE IS~~		⑤
	0065			03 IPDEPT PICTURE IS 9(3).		
	0070			03 IPCLKN PICTURE IS 9(7).		
	0075			02 IPNAME PICTURE IS A(3).		
	0080			02 IPCHKN PICTURE IS 9(9).		
	0085			02 FILLER PICTURE IS X(4).		
	0090			02 IPGRSS PICTURE IS 9(4)V99.		
	0095			02 IPFEDT PICTURE IS 9(4)V99.		
	0100			02 IPSTTX PICTURE IS 9(4)V99.		
	0105			02 IPFICA PICTURE IS 99V99.		
	0110			02 IPMISC PICTURE IS 99V99.		
	0115			02 IPCRUN PICTURE IS 999V99.		
	0120			02 IPBNDS PICTURE IS 999V99.		
	0125			02 IPHLTH PICTURE IS 99V99.		
	0130			02 IPLIFE PICTURE IS 99V99.		
	0135			02 IPNET PICTURE IS 9(4)V99.		
	0140			02 IPDATE PICTURE IS 9(4).		
	0145			PICTURE IS		
	0150			PICTURE IS		
	0155			PICTURE IS		
	0160			PICTURE IS		
	0165			PICTURE IS		
	0170			PICTURE IS		
	0175			PICTURE IS		
	0180			PICTURE IS		
	0185			PICTURE IS		
	0190			PICTURE IS		
	0195			PICTURE IS		

LEGEND

①

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

③

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

④

ALL FILES - Fill in 6 character record name.

⑤

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-24 (cont). Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO.

PROGRAM UPDMST RUN C6 PROGRAMMER DATE REV. NO.

PAGE 5 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY	
	0010		FD OPRG-	F ~~BLOCK CONTAINS RECORDS~~			(1)
	0020			LABEL RECORDS ARE OMITTED.			(2)
	0030			~~VALUE OF IDENTIFICATION IS~~			(3)
	0040			DATA RECORD IS OPRG-R.			(4)
	0050		01	OPRG-R.			(4)
	0060			02	FILLER PICTURE IS X.		(5)
	0065			02	OPEMPN PICTURE IS 9(3)B9(7).		
	0070			02	FILLER PICTURE IS X.		
	0075			02	OPNAME PICTURE IS XBXX.		
	0080			02	FILLER PICTURE IS XXX.		
	0085			02	OPCHKN PICTURE IS 9(9).		
	0090			02	FILLER PICTURE IS X(4).		
	0095			02	OPGRSS PICTURE IS Z(4).99.		
	0100			02	FILLER PICTURE IS X(3).		
	0105			02	OPFEDT PICTURE IS Z(4).99.		
	0110			02	FILLER PICTURE IS X(5).		
	0115			02	OPSTTX PICTURE IS Z(4).99.		
	0120			02	FILLER PICTURE IS XXX.		
	0125			02	OPFICA PICTURE IS ZZ.99.		
	0130			02	FILLER PICTURE IS XX.		
	0135			02	OPMISC PICTURE IS ZZ.99.		
	0140			02	FILLER PICTURE IS XXX.		
	0145			02	OPCRUN PICTURE IS ZZZ.99.		
	0150			02	FILLER PICTURE IS XXX.		
	0155			02	OPBNDS PICTURE IS ZZZ.99.		
	0160			02	FILLER PICTURE IS XX.		
	0165			02	OPHLTH PICTURE IS ZZ.99.		
	0170			02	FILLER PICTURE IS XX.		
	0175			02	OPLIFE PICTURE IS ZZ.99.		
	0180			02	FILLER PICTURE IS XX.		
	0185			02	OPNET PICTURE IS Z(4).99.		
	0190			02	FILLER PICTURE IS X(12).		
	0195				PICTURE IS		

LEGEND

(1)

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

(3)

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

(4)

ALL FILES - Fill in 6 character record name.

(5)

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-24 (cont). Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

Honeywell
ELECTRONIC DATA PROCESSING

COBOL PROGRAMMING FORM

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM UPDMST RUN C6 PROGRAMMER DATE REV. NO.

PAGE 6 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY
			WORKING-STORAGE SECTION.		
			01 DATE PICTURE IS X(62) VALUE IS SPACE.		
			01 LSTSW PICTURE IS X VALUE IS SPACE.		
			01 LINCNT PICTURE IS 99 VALUE IS ZERO.		

Figure 9-24 (cont). Run C6: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

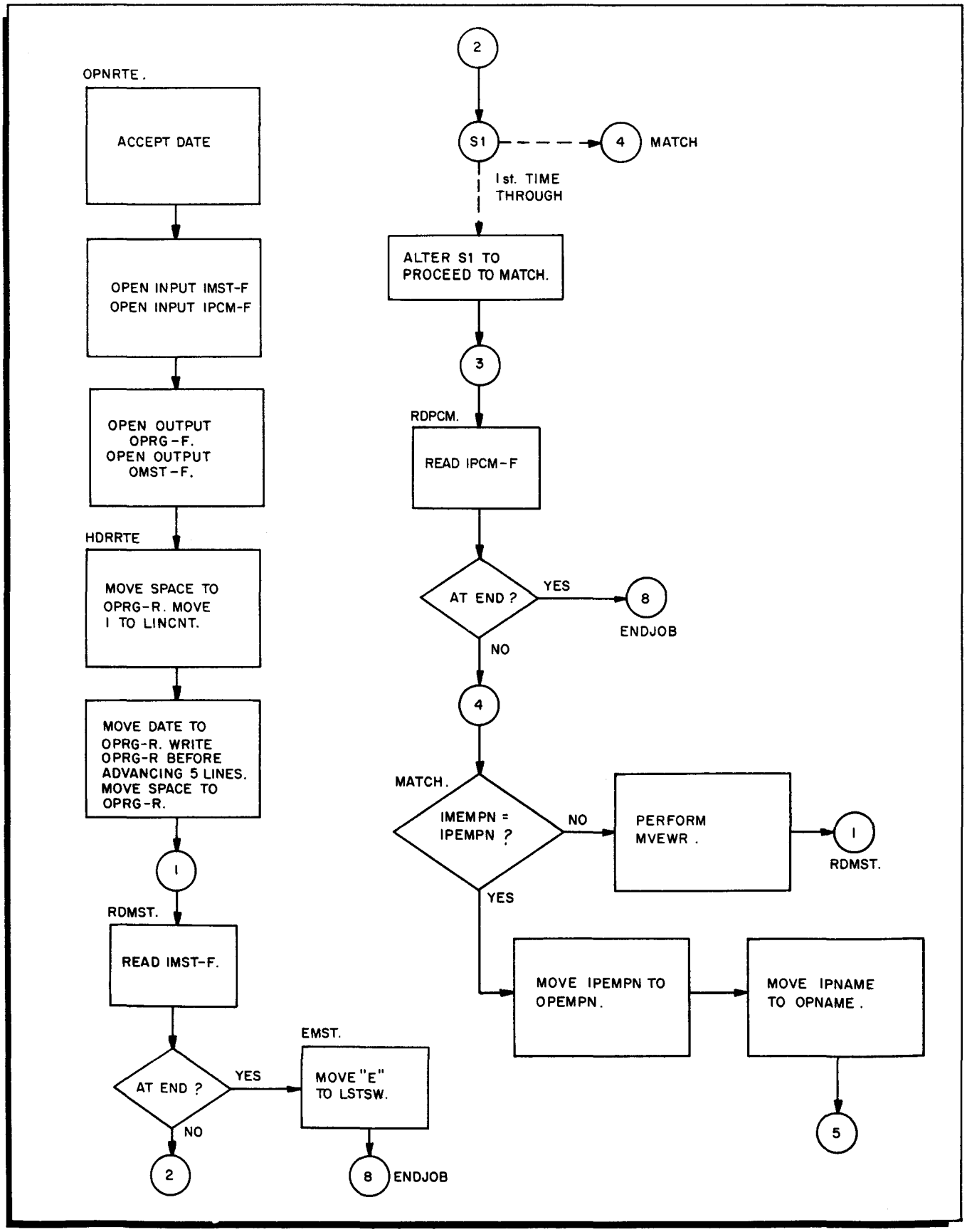


Figure 9-25. Run C6: COBOL PROCEDURE DIVISION Flow Chart

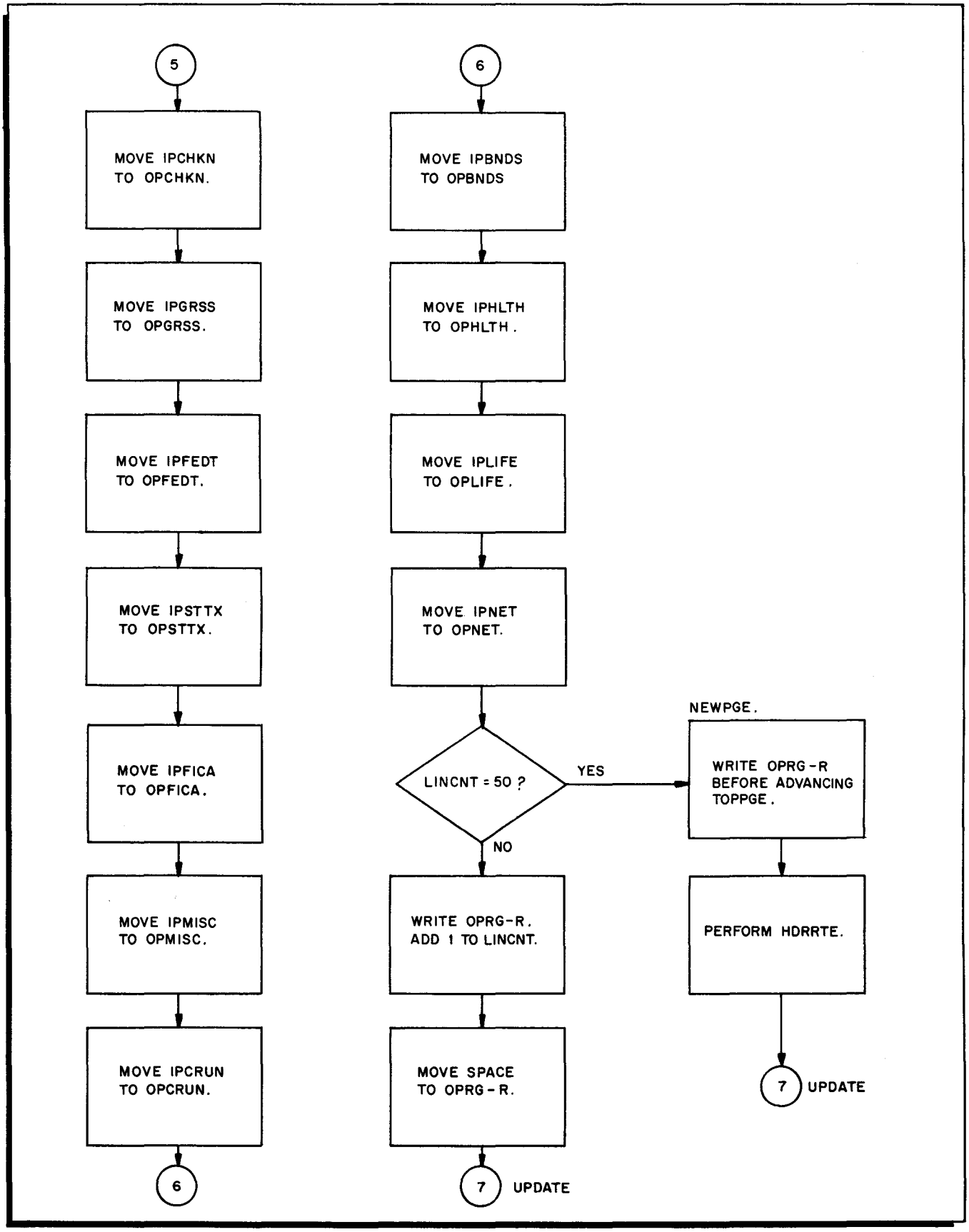


Figure 9-25 (cont). Run C6: COBOL PROCEDURE DIVISION Flow Chart

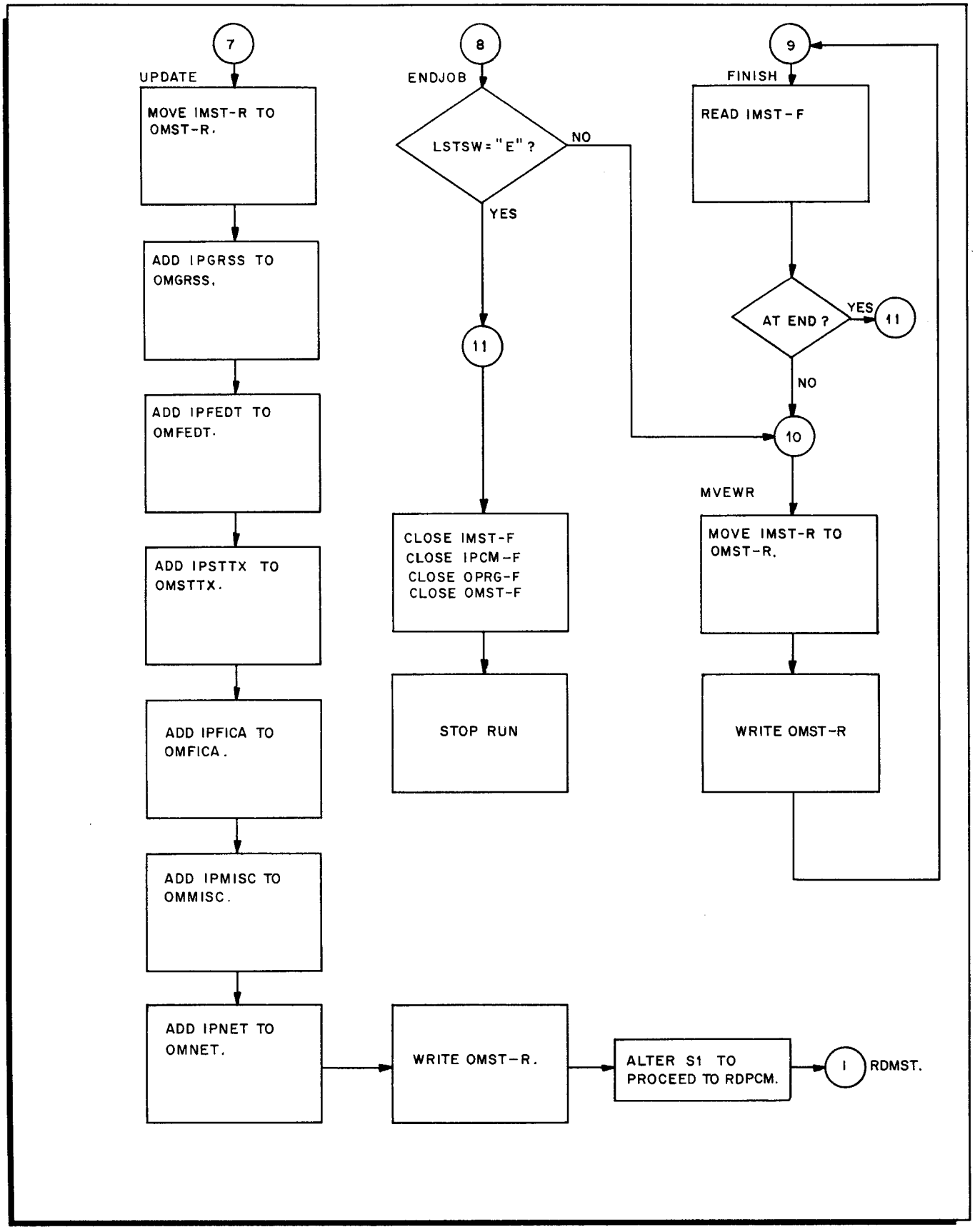


Figure 9-25 (cont). Run C6: COBOL PROCEDURE DIVISION Flow Chart

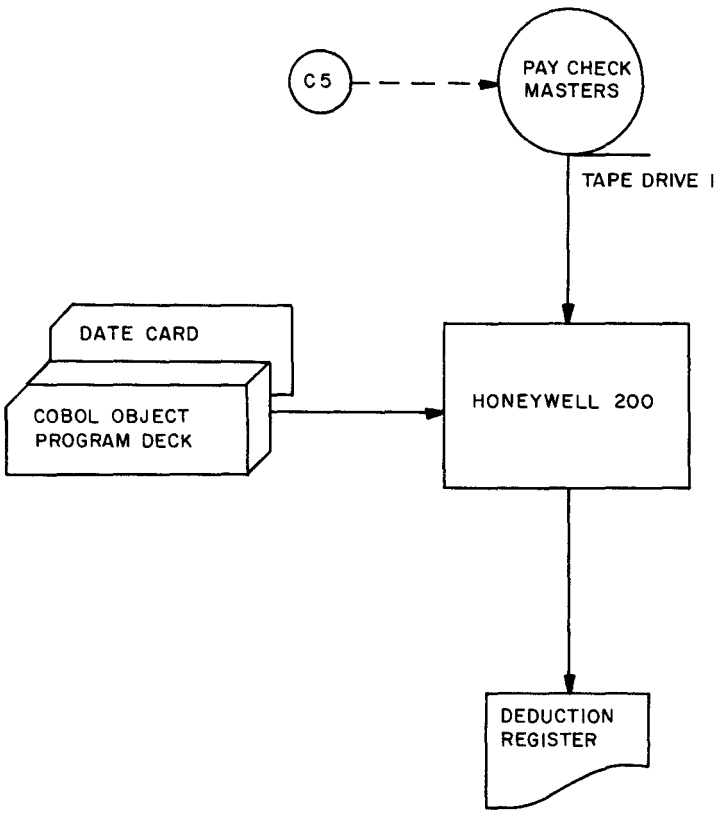


Figure 9-26. Run C7: COBOL B Program Setup

Honeywell ELECTRONIC DATA PROCESSING

EASYTAB CODING FORM 1

PUNCHING INST. CODED / PUNCH / CARD FORM NO.

PROGRAM DEDREG RUN C7 PROGRAMMER _____ DATE _____ REV. NO. ____ PAGE 1 OF _____

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY	
01	00 10		IDENTIFICATION DIVISION.			
01	00 20		PROGRAM-I.D. DEDREG.			Fill in 6 character program name.
01	00 30		AUTHOR. T ELLIOTT.			
01	00 40		DATE-WRITTEN.			
01	00 50		REMARKS. COBOL PROGRAM TO PRINT DEDUCTION REGISTER.			
01	00 60		ENVIRONMENT DIVISION.			
01	00 70		CONFIGURATION SECTION.			Fill in program documentation
01	00 80		SOURCE-COMPUTER. MODEL-120.			
01	00 90		OBJECT-COMPUTER. MODEL-120, MEMORY SIZE 12288 CHARACTERS.			
				WITH EDIT-OPTION.		
01	01 00		SPECIAL-NAMES. SENSE-SWITCH 1 ON STATUS IS SW1.			
01	01 10		SENSE-SWITCH 2 ON STATUS IS SW2.			If using special names - put period (.) at end of last special name.
01	01 20		SENSE-SWITCH 3 ON STATUS IS SW3.			
01	01 30		SENSE-SWITCH 4 ON STATUS IS SW4.			
				PAGE IS TOPPGE.		
01	01 40		INPUT-OUTPUT SECTION.			
01	01 50		FILE-CONTROL.			
01	01 60		SELECT ODED-F ASSIGN TO PRINTER.			Fill in 6 character file names.
01	01 70		~~SELECT ASSIGN TO CARD-PUNCH.~~			Fill in 6 character tape use. "Δ Input" or "Output"
01	01 80		~~SELECT ASSIGN TO CARD-READER.~~			
01	01 90		SELECT IPCM-F ASSIGN TO INPUT-TAPE 1.			Fill in tape unit assignments, Numbers 1 thru 3.
01	02 00		~~SELECT ASSIGN TO TAPE.~~			
01	02 10		~~SELECT ASSIGN TO TAPE.~~			
01	02 20		DATA DIVISION.			NOTE: Statements which are not used should be lined thru.
01	02 30		FILE SECTION.			

Figure 9-27. Run C7: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO.

PROGRAM DEDREG RUN C7 PROGRAMMER DATE REV. NO.

PAGE 2 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	IPCM-F	BLOCK CONTAINS 2 RECORDS.	①
	0020				LABEL RECORDS ARE STANDARD.	②
	0030				VALUE OF IDENTIFICATION IS "PAYCHK-MST".	③
	0040				DATA RECORD IS IPCM-R.	④
	0050		01	IPCM-R.		④
	0060			02	IPDPTN PICTURE IS 9(3).	⑤
	0065			02	IPCLKN PICTURE IS 9(7).	
	0070			02	IPNAME PICTURE IS A(3).	
	0075			02	IPCHKN PICTURE IS 9(9).	
	0080			02	FILLER PICTURE IS X(4).	
	0085			02	IPGRSS PICTURE IS 9(4)V99.	
	0090			02	IPFEDT PICTURE IS 9(4)V99.	
	0095			02	IPSTTX PICTURE IS 9(4)V99.	
	0100			02	IPFICA PICTURE IS 99V99.	
	0105			02	IPMISC PICTURE IS 99V99.	
	0110			02	IPCRUN PICTURE IS 999V99.	
	0115			02	IPBNDS PICTURE IS 999V99.	
	0120			02	IPHLTH PICTURE IS 99V99.	
	0125			02	IPLIFE PICTURE IS 99V99.	
	0130			02	IPNET PICTURE IS 9(4)V99.	
	0135			02	IPDATE PICTURE IS 9(4).	
	0140				PICTURE IS	
	0145				PICTURE IS	
	0150				PICTURE IS	
	0155				PICTURE IS	
	0160				PICTURE IS	
	0165				PICTURE IS	
	0170				PICTURE IS	
	0175				PICTURE IS	
	0180				PICTURE IS	
	0185				PICTURE IS	
	0190				PICTURE IS	
	0195				PICTURE IS	

LEGEND

①
ALL FILES - Fill in 6 Character file name.
TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.
NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

②
TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.
NON-TAPE-FILE - Fill in "OMITTED".

③
TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.
NON-TAPE-FILES - Line thru (Do not use) this line.

④
ALL FILES - Fill in 6 character record name.

⑤
ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-27 (cont). Run C7: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. CODED PUNCH CARD FORM NO.

PROGRAM DEDREG RUN C7 PROGRAMMER DATE REV. NO. PAGE 3 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD	ODED-R ~~BLOCK CONTAINS RECORDS,~~		(1)
	0020			LABEL RECORDS ARE OMITTED ,		(2)
	0030			~~VALUE OF IDENTIFICATION IS ,~~		(3)
	0040			DATA RECORD IS ODED-R, TOTLIN.		(4)
	0050		01	ODED-R.		(4)
	0060			02 ODDPTN PICTURE IS 999.		(5)
	0065			02 FILLER PICTURE IS X.		
	0070			02 ODCLKN PICTURE IS 9(7).		
	0075			02 FILLER PICTURE IS X(5).		
	0080			02 ODNAME PICTURE IS XBXX.		
	0085			02 FILLER PICTURE IS X(5).		
	0090			02 ODCHKN PICTURE IS 9(10).		
	0095			02 FILLER PICTURE IS X(5).		
	0100			02 ODFEDT PICTURE IS Z(4).99.		
	0105			02 FILLER PICTURE IS X(3).		
	0110			02 ODSTTX PICTURE IS Z(4).99.		
	0115			02 FILLER PICTURE IS X(3).		
	0120			02 ODFICA PICTURE IS ZZ.99.		
	0125			02 FILLER PICTURE IS X(3).		
	0130			02 ODMISC PICTURE IS ZZ.99.		
	0135			02 FILLER PICTURE IS X(3).		
	0140			02 ODCRUN PICTURE IS ZZZ.99.		
	0145			02 FILLER PICTURE IS X(3).		
	0150			02 ODBNDS PICTURE IS ZZZ.99.		
	0155			02 FILLER PICTURE IS X(3).		
	0160			02 ODHLTH PICTURE IS ZZ.99.		
	0165			02 FILLER PICTURE IS X(3).		
	0170			02 ODLIFE PICTURE IS ZZ.99.		
	0175			02 FILLER PICTURE IS X(3).		
	0180			02 ODTOTL PICTURE IS Z(5).99.		
	0185			02 FILLER PICTURE IS XX.		
	0190			PICTURE IS		
	0195			PICTURE IS		

LEGEND

(1)

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

(3)

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

(4)

ALL FILES - Fill in 6 character record name.

(5)

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-27 (cont). Run C7: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

EASYTAB CODING FORM 2

PUNCHING INST. (CODED / PUNCH / CARD FORM NO.)

PROGRAM DEDREG RUN C7 PROGRAMMER DATE REV. NO. PAGE 4 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B		IDENTITY
	0010		FD		BLOCK CONTAINS RECORDS.	(1)
	0020				LABEL RECORDS ARE .	(2)
	0030				VALUE OF IDENTIFICATION IS .	(3)
	0040				DATA RECORD IS .	(4)
	0050		01	TOTLIN.		(4)
	0060			02	FILLER PICTURE IS X(37).	(5)
	0065			02	TLINE1 PICTURE IS Z(6).99.	
	0070			02	FILLER PICTURE IS X.	
	0075			02	TLINE2 PICTURE IS Z(6).99.	
	0080			02	FILLER PICTURE IS X.	
	0085			02	TLINE3 PICTURE IS Z(4).99.	
	0090			02	FILLER PICTURE IS X.	
	0095			02	TLINE4 PICTURE IS Z(4).99.	
	0100			02	FILLER PICTURE IS X.	
	0105			02	TLINE5 PICTURE IS Z(5).99.	
	0110			02	FILLER PICTURE IS X.	
	0115			02	TLINE6 PICTURE IS Z(5).99.	
	0120			02	FILLER PICTURE IS X.	
	0125			02	TLINE7 PICTURE IS Z(4).99.	
	0130			02	FILLER PICTURE IS X.	
	0135			02	TLINE8 PICTURE IS Z(4).99.	
	0140			02	FILLER PICTURE IS X.	
	0145			02	TLINE9 PICTURE IS Z(7).99.	
	0150			02	FILLER PICTURE IS X(3).	
	0155				PICTURE IS .	
	0160				PICTURE IS .	
	0165				PICTURE IS .	
	0170				PICTURE IS .	
	0175				PICTURE IS .	
	0180				PICTURE IS .	
	0185				PICTURE IS .	
	0190				PICTURE IS .	
	0195				PICTURE IS .	

LEGEND

(1)

ALL FILES - Fill in 6 Character file name.

TAPE FILE - Fill in number of records in a block (1 to 9) EASYTAB STANDARD IS BLOCKED 2.

NON-TAPE-FILE - Line thru (Do not use) "Block contains 72 records".

(2)

TAPE FILE - Fill in "STANDARD" or "OMITTED" Label.

NON-TAPE-FILE - Fill in "OMITTED".

(3)

TAPE FILE - If label is "STANDARD" fill in 10 character name that is in the header label. If label is "OMITTED", line thru, (Do not use) this line.

NON-TAPE-FILES - Line thru (Do not use) this line.

(4)

ALL FILES - Fill in 6 character record name.

(5)

ALL FILES - Fill in Level No. (02 to 05) Fill in 6 character field name. Field descriptions must be provided by the programmer.

NOTE: Statements which are not used should be lined thru.

Figure 9-27 (cont). Run C7: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

Honeywell
ELECTRONIC DATA PROCESSING

COBOL PROGRAMMING FORM

PUNCHING INST.
CODED
PUNCH
CARD FORM NO.

PROGRAM DEDREG RUN C7 PROGRAMMER DATE REV. NO.

PAGE 5 OF

SEQUENCE PAGE	SEQUENCE LINE	CONT	A	B	IDENTITY
			WORKING-STORAGE SECTION.		
			01	DTEL IN.	
				02 FILLER PICTURE IS X(50) VALUE IS SPACE.	
				02 DATE PICTURE IS X(15).	
			01	LIMIT PICTURE IS 99 VALUE IS 60.	
			01	LINCNT PICTURE IS 99, VALUE IS ZERO.	
			01	PREV PICTURE IS 9(3).	
			01	TOTDED PICTURE IS 9(5)V99 VALUE IS ZERO.	
			01	MINTOT.	
				02 MIN1 PICTURE IS 9(6)V99 VALUE IS ZERO.	
				02 MIN2 PICTURE IS 9(6)V99 VALUE IS ZERO.	
				02 MIN3 PICTURE IS 9(4)V99 VALUE IS ZERO.	
				02 MIN4 PICTURE IS 9(4)V99 VALUE IS ZERO.	
				02 MIN5 PICTURE IS 9(5)V99 VALUE IS ZERO.	
				02 MIN6 PICTURE IS 9(5)V99 VALUE IS ZERO.	
				02 MIN7 PICTURE IS 9(4)V99 VALUE IS ZERO.	
				02 MIN8 PICTURE IS 9(4)V99 VALUE IS ZERO.	
				02 MIN9 PICTURE IS 9(7)V99 VALUE IS ZERO.	

Figure 9-27 (cont). Run C7: COBOL Coding - IDENTIFICATION, ENVIRONMENT, and DATA DIVISIONS

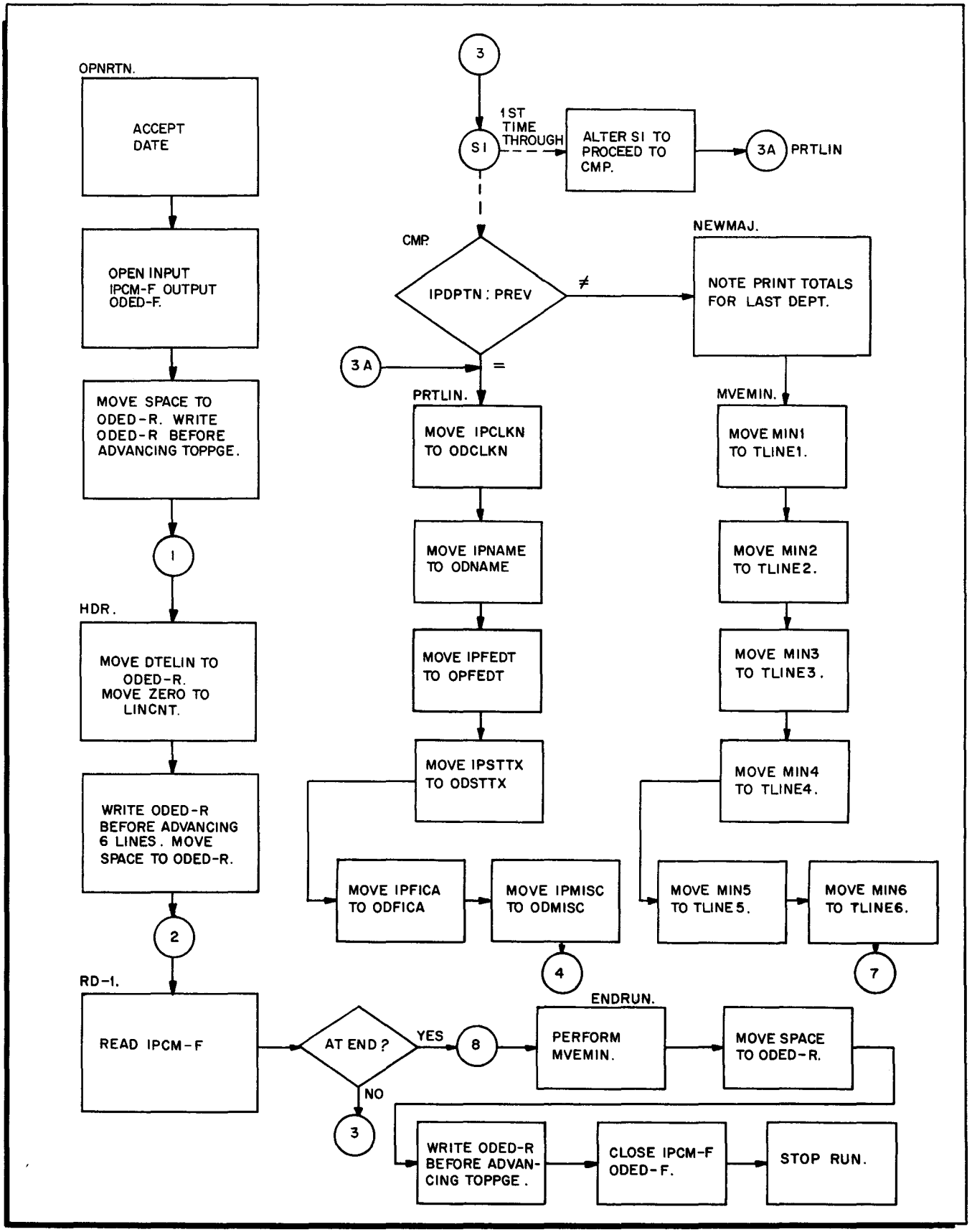


Figure 9-28. Run C7: COBOL PROCEDURE DIVISION Flow Chart

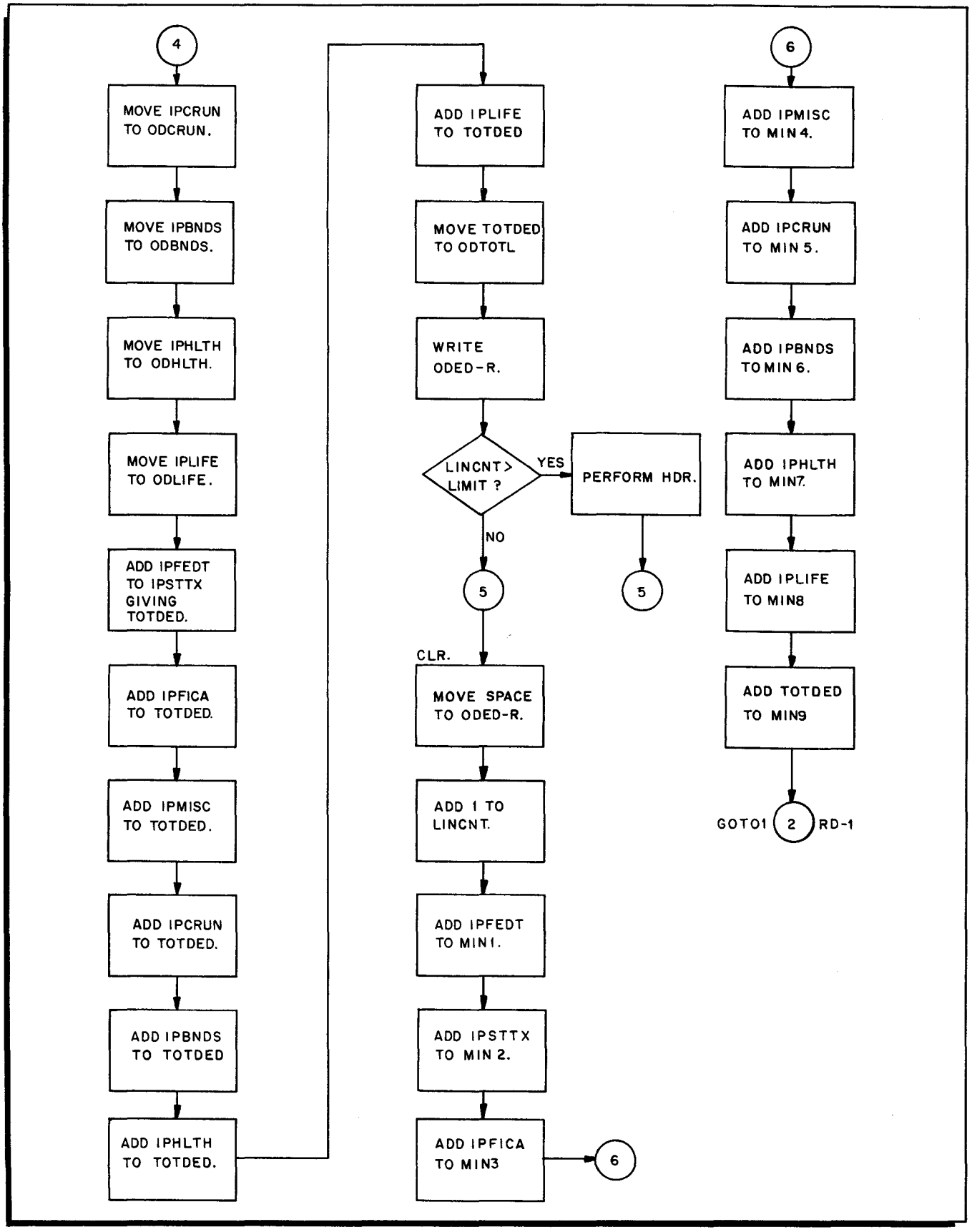


Figure 9-28 (cont). Run C7: COBOL PROCEDURE DIVISION Flow Chart

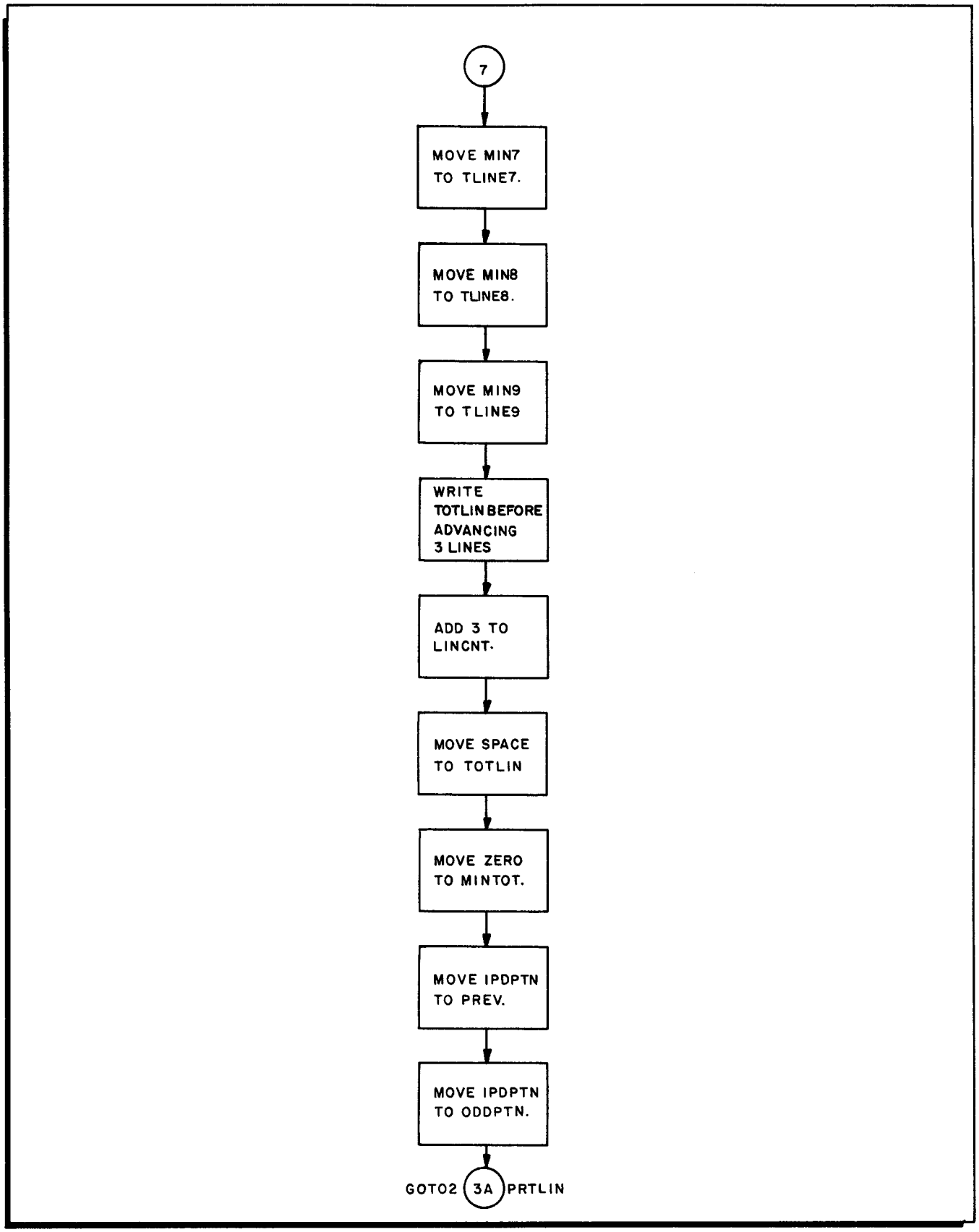


Figure 9-28 (cont). Run C7: COBOL PROCEDURE DIVISION Flow Chart

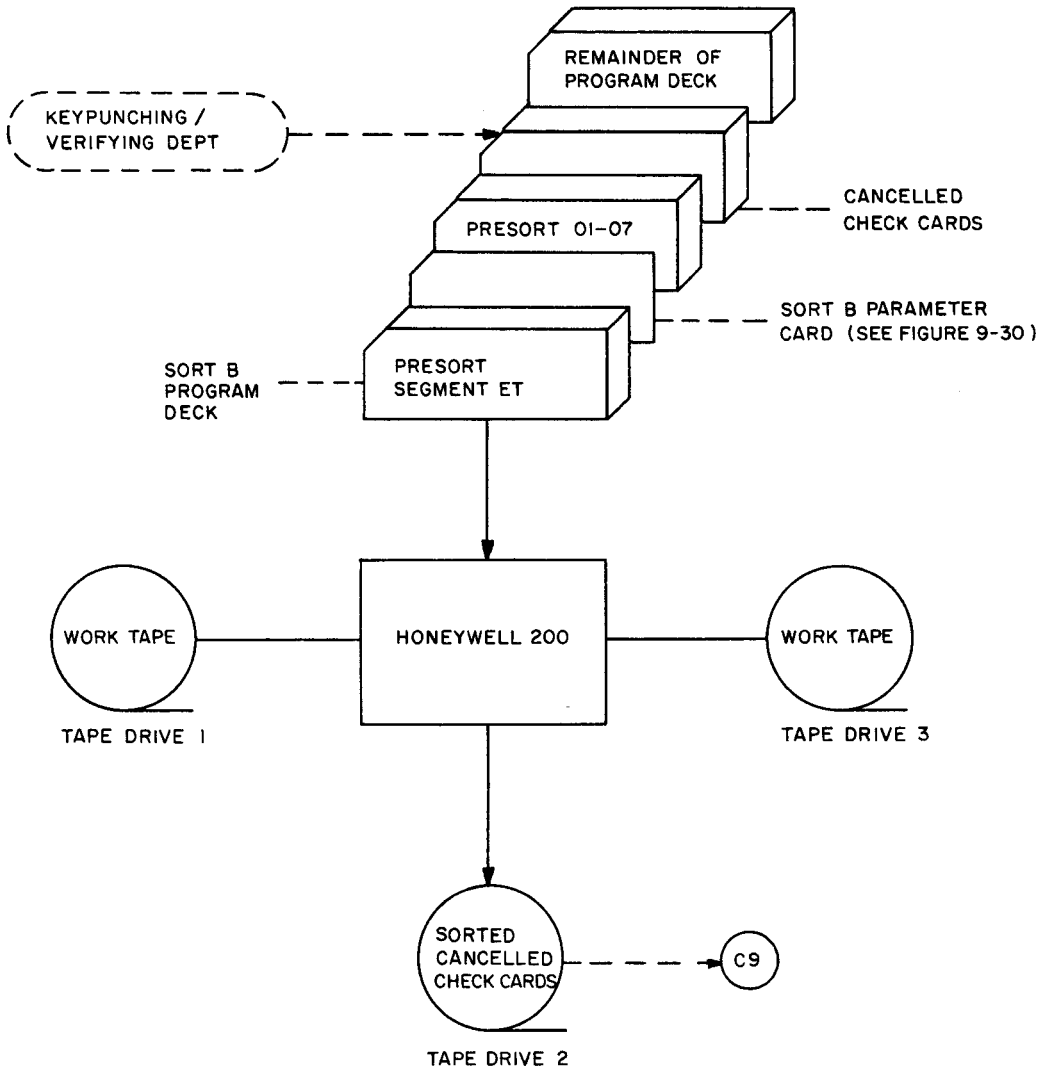


Figure 9-29. Run C8: Sort B Setup

EASYTAB - SORT B

Date _____

I.D. C8

APPLICATION SORT OF CANCELLED CHECK CARDS Author _____

SORTB
1 5

Input on cards

INPUT	4TH TAPE OPTION	INPUT TAPE OPTION ①	SEQUENCE
C			
6	7	8	9
C = Card T = Tape	Δ = No 4th Tape 4 = 4th Tape	R = Do Not Use Tape 1 as Work 1 = Use Tape 1 as Work	Δ = Ascending D = Descending

NO. OF REELS OF INPUT	MACHINE SIZE	INPUT BLOCKING ②	OUTPUT BLOCKING ②
10	11	15 16	17 18
1 Thru 9	Δ = 8K 3 = 12K 4 = 16K	ΔΔ = 02	ΔΔ = 02

Check Number

Key 1	Key 2	Key 3	Key 4
1409			
20 23	25 28	30 33	35 38

Key 5	Key 6	Key 7	Key 8
40 43	45 48	50 53	55 58

Input Reel Identification

61 70

Output Reel Identification

SORTED CNC
71 80

① Input tape(s) may contain no more than 30,000 items, Blocked 2, in order to use Tape 1 as a work tape.

② Tape input and output of Sort B are assumed to be blocked 2, within an 8K machine. If blocking factor is other than 2, the factor must be entered in the appropriate input and/or output box.

Figure 9-30. Run C8: Sort B Parameter Card

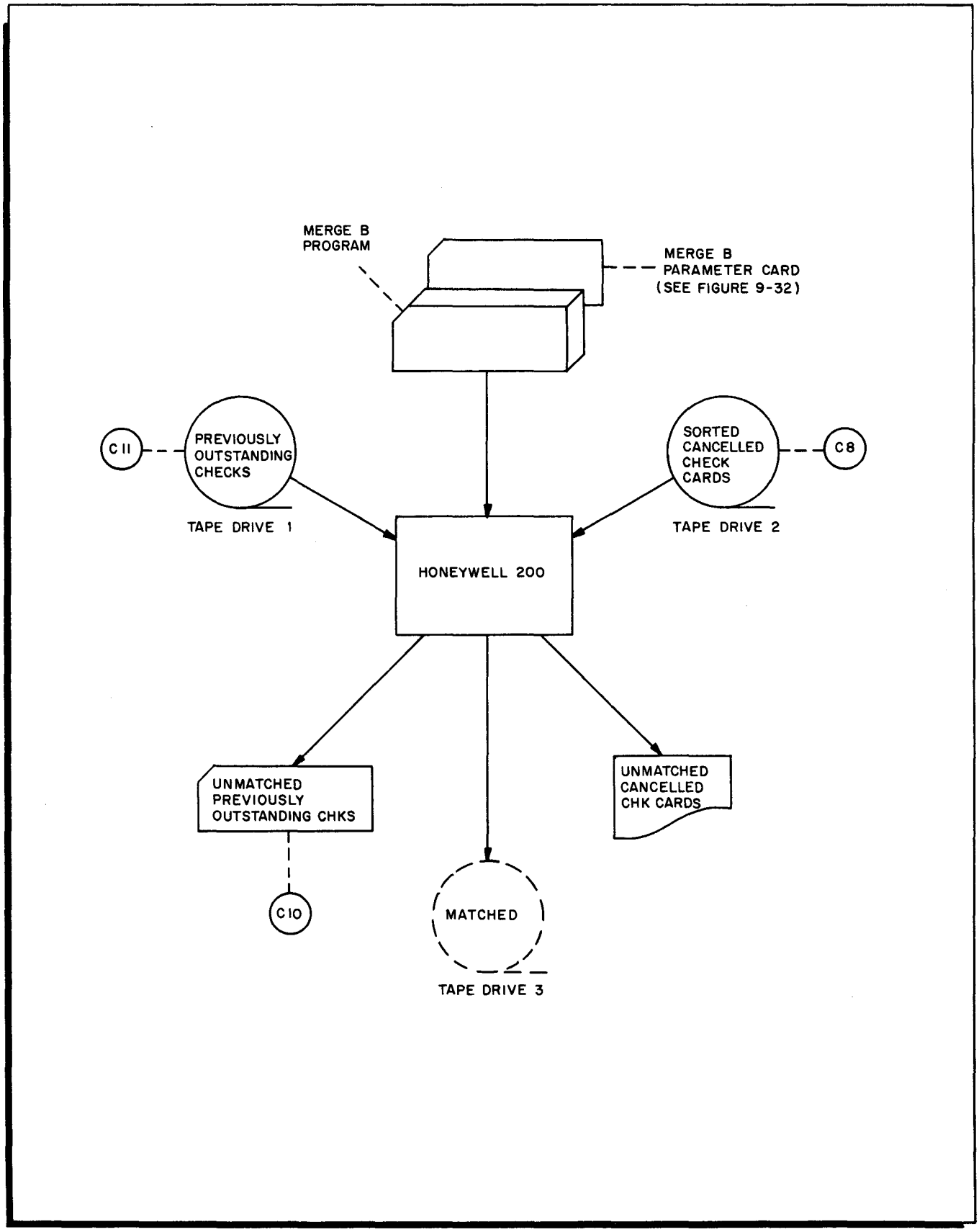


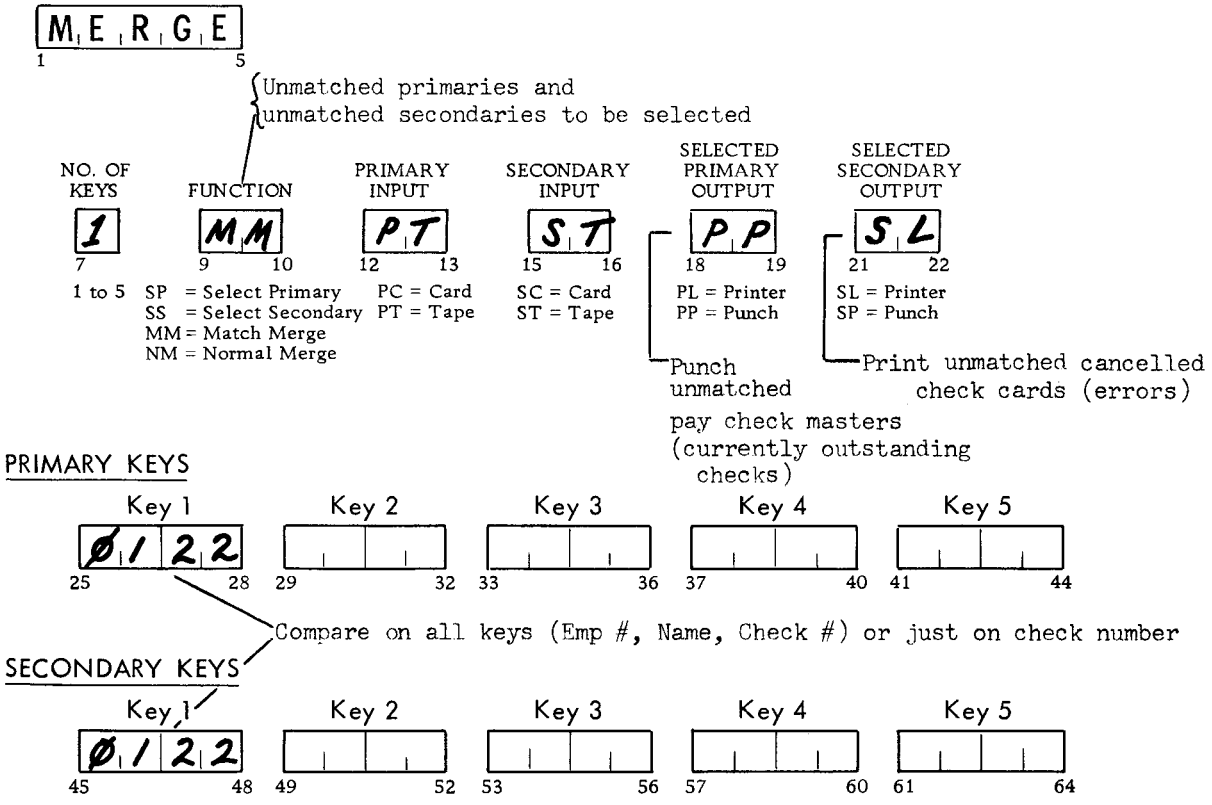
Figure 9-31. Run C9: Merge B Setup

EASYTAB - MERGE

Date _____

I.D. C9

APPLICATION RECONCILIATION OF CANCELLED CHECKS Author _____



Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 9-32. Run C9: Merge B Parameter Card

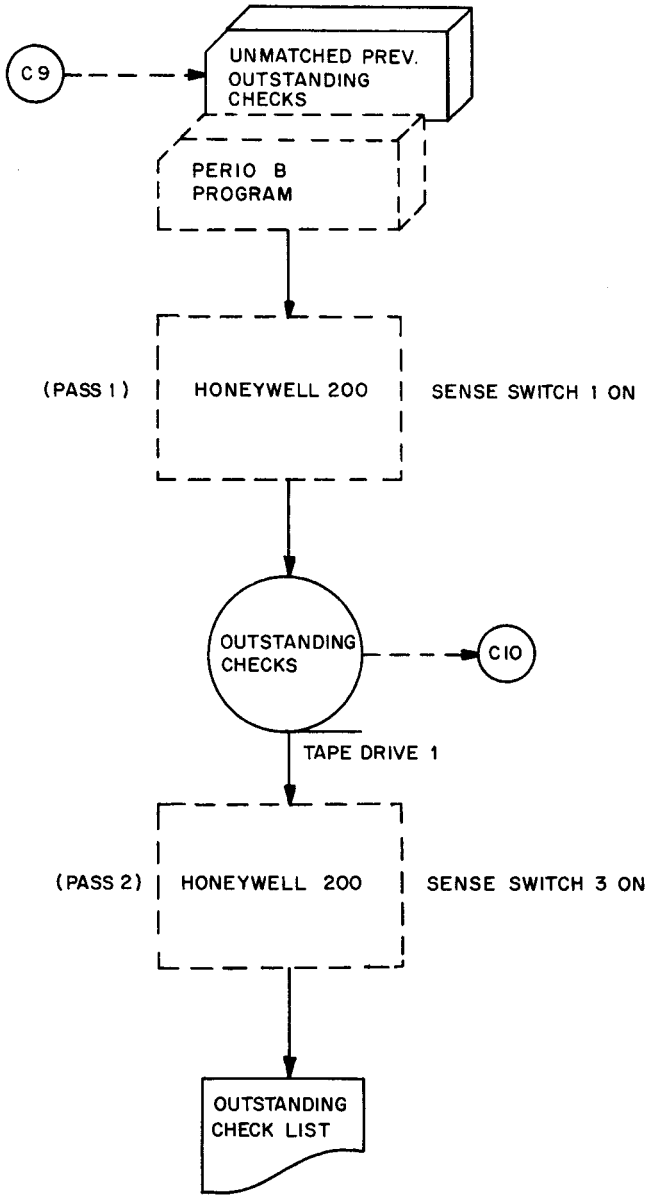


Figure 9-33. Run C10: PERIO B Program Setup

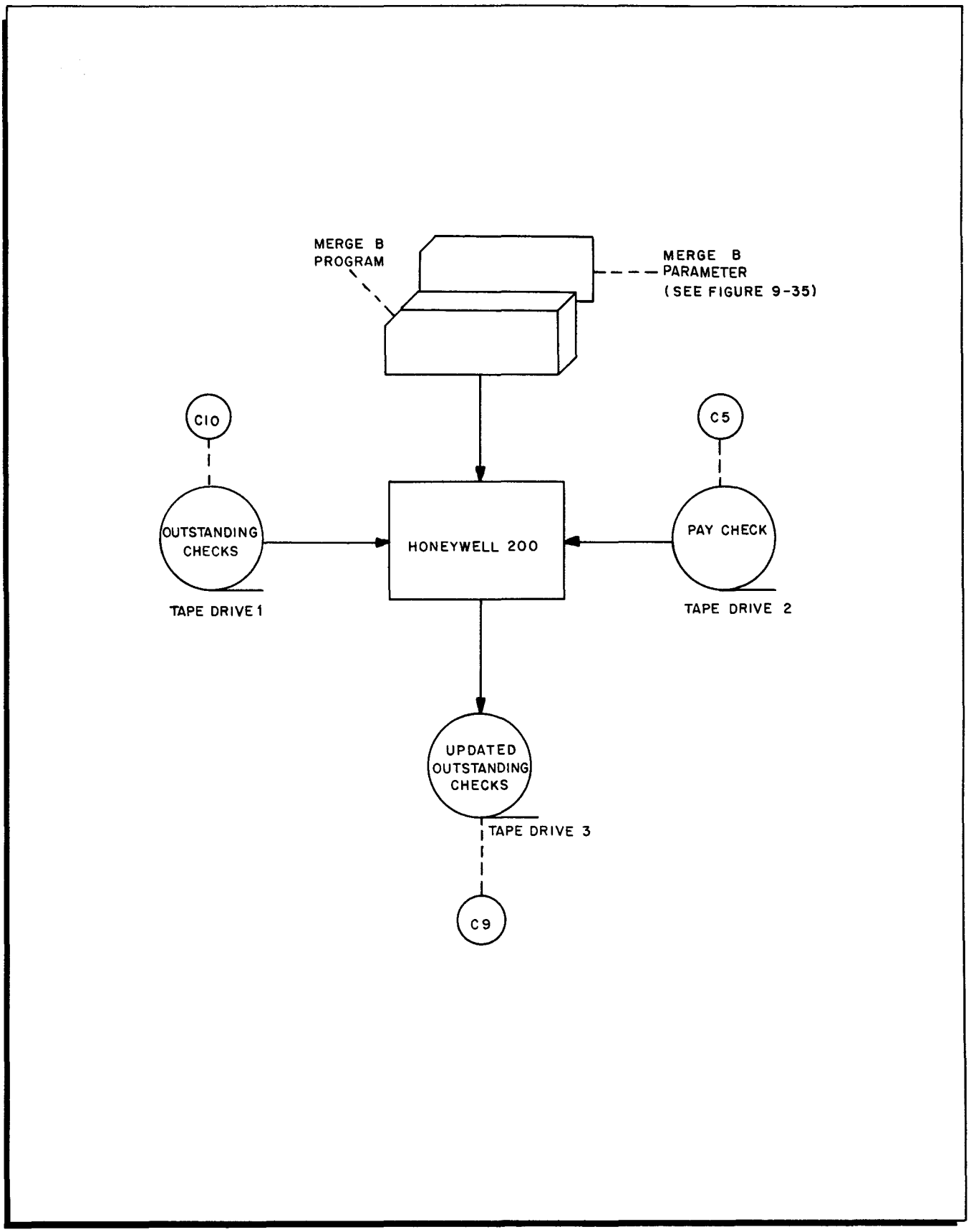


Figure 9-34. Run C11: Merge B Setup

EASYTAB - MERGE

Date _____

I.D. C 11

APPLICATION MERGE OF CURRENT PAY CHECK MASTERS & OUTSTANDING CHECKS Author _____

M E R G E
1 5

Normal Merge

NO. OF KEYS	FUNCTION	PRIMARY INPUT	SECONDARY INPUT	SELECTED PRIMARY OUTPUT	SELECTED SECONDARY OUTPUT
1	NM	PT	ST		
7	9 10	12 13	15 16	18 19	21 22
1 to 5	SP = Select Primary SS = Select Secondary MM = Match Merge NM = Normal Merge	PC = Card PT = Tape	SC = Card ST = Tape	PL = Printer PP = Punch	SL = Printer SP = Punch

PRIMARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
1409				
25 28	29 32	33 36	37 40	41 44

Check Number

SECONDARY KEYS

Key 1	Key 2	Key 3	Key 4	Key 5
1409				
45 48	49 52	53 56	57 60	61 64

Keys are in descending order - Major is Key 1, Lowest Minor is Key 5.

Figure 9-35. Run C11: Merge B Parameter Card

NOTE: If card reader/punch is being used, input deck must be divided into three sections and each section loaded separately. See explanation under (3), page 9-64.

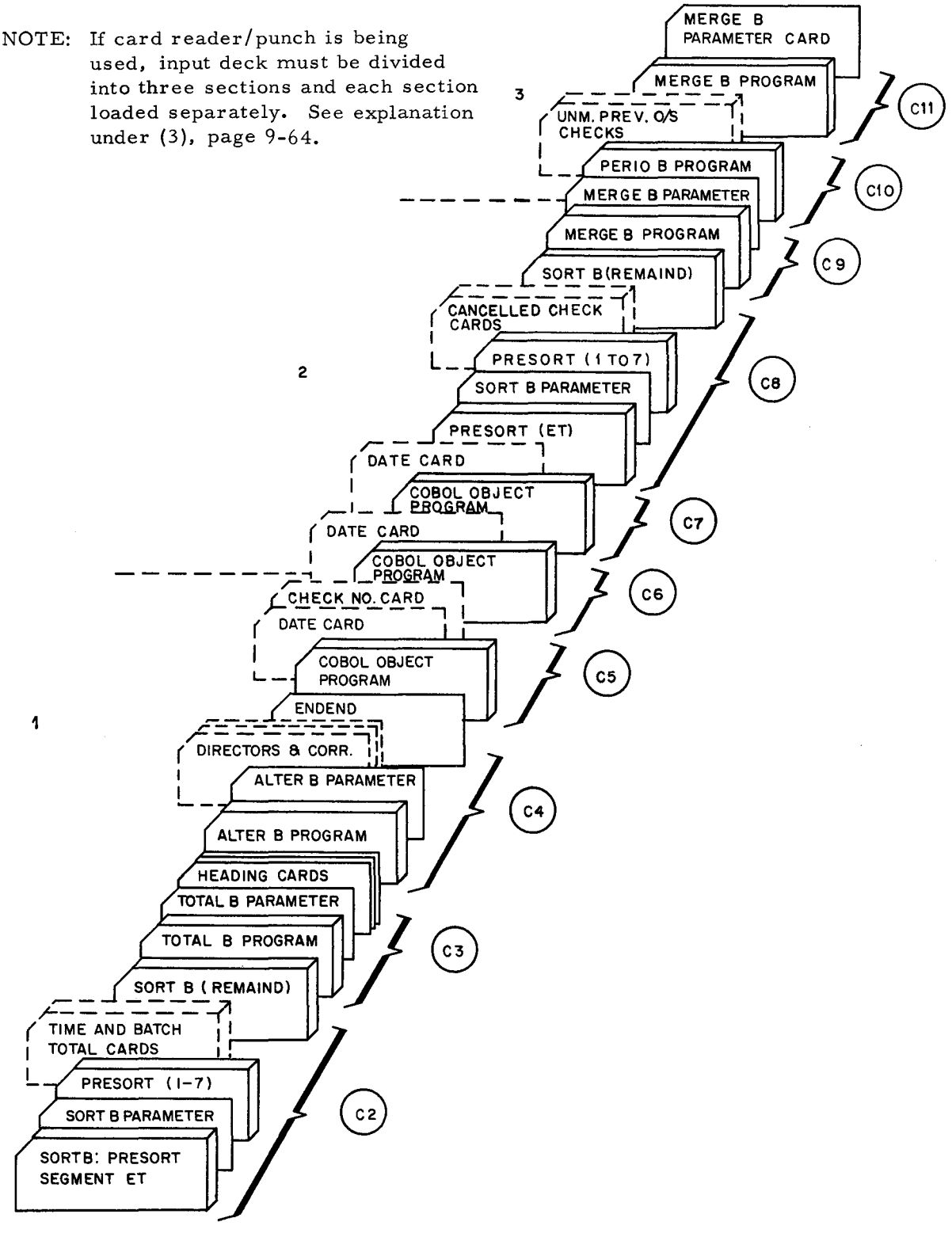


Figure 9-36. Card Deck Setup for Entire Payroll Application

Loading the Programs from Tape

If there is one additional tape drive available throughout the execution of the entire series of runs, the programs may be loaded from tape instead of from the card reader. The following procedure can be used:

1. Place the ordered program decks (solid lines - Figure 9-36) on tape. When the payroll is to be run, this tape is mounted on tape drive 0.
2. Place the data input (broken lines - Figure 9-36) in order. Again, notice that the corrections input to run C4 and the outstanding check cards input to run C10 will not be available until the preceding runs are executed.
3. If the Type 214-2 Reader/Punch is being used, the data deck must be divided into three groups:

   a. Input to runs C2 through C5.

   b. Input to runs C6 through C9.

   c. Input to runs C10 through C11.

   This is because the reader/punch unit must be available for punching the output from runs C5 and C9. If separate card reader and card punch units are available, the entire data deck can be placed in the card reader.

Cut Along Line

HONEYWELL EDP TECHNICAL PUBLICATIONS
USERS' REMARKS FORM

TITLE: STUDY GUIDE:
EASYTAB SYSTEM

DATED: MAY, 1966

FILE NO: 123.6005.000B.0-281

ERRORS NOTED:

Fold

SUGGESTIONS FOR IMPROVEMENT:

Fold

FROM: NAME _____ DATE _____

COMPANY _____

TITLE _____

ADDRESS _____

_____

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MASS.

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ELECTRONIC DATA PROCESSING DIVISION
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Cut Along Line

Honeywell
ELECTRONIC DATA PROCESSING

HONEYWELL
ELECTRONIC
DATA
PROCESSING
WELLESLEY HILLS,
MASSACHUSETTS 02181