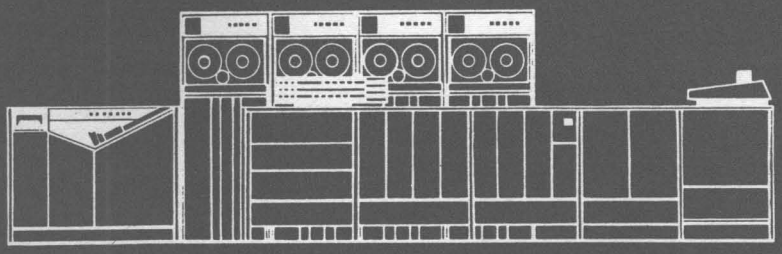
SERIES 200/APPLICATION SYSTEMS

AUTOLOG REFERENCE MANUAL



Honeywell

ELECTRONIC DATA PROCESSING

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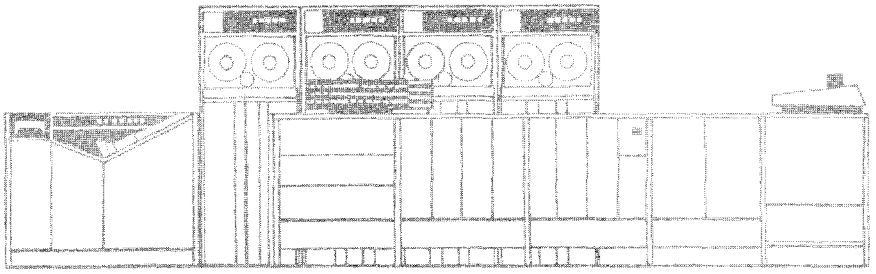

Honeywell

ELECTRONIC DATA PROCESSING

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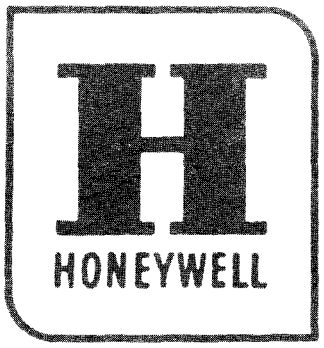

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FOREWORD

Autolog is a program which produces detailed reports on equipment utilization for Series 200 customers. Autolog reports provide an accurate record of all jobs performed and the specific equipment units involved, as well as the causes of reruns and down time. This information in turn reduces the time needed to compile operating statistics and provides data which the user can quickly analyze in order to suggest pertinent remedial action.

This publication, which describes the capabilities of the Autolog program, is intended to serve three types of readers:

1. The operator who runs the Autolog program and who maintains the machine log. While he is operating the program as described in Section V, the operator fills out the machine log. This log, the Autolog Machine Logging and Layout Form, (form EDP 2186), can be obtained through any Honeywell representative. Logging information is entered in data card and remarks card format. The operator who reads the brief specifications for data cards and remarks cards in Section IV will find that the headings on the log are sufficiently explict to enable him to fill out the log correctly without referring to specifications in the text.
2. The programmer who prepares control information for input to the Autolog program. Sections III and IV apply. Only the header cards and parameter cards need be coded prior to keypunching, and even these cards can be prepunched and kept on hand. Manual conversion of the logging data into Autolog-compatible format is unnecessary: the data cards can be keypunched directly from the Machine Logging and Layout form.
3. The managers who request reports, who interpret them, and who design new reports. Section II contains an interpretation of each field in each report. The Series 200 user may not require all the reports available in the current version of Autolog, or he may add additional phases to specialize the program for his own accounting, reporting, or statistical needs.

The manner in which report fields are tabulated in Autolog is believed to be in accordance with practice that is in force at most Honeywell installations. In cases where other practices are in force, the following disclaimer applies: Report fields that charge to the customer or to Honeywell the cost of specific contingencies such as preventive maintenance time, down time, rerun time due to software errors, etc., are illustrative and typical but are not binding; they do not supersede or redefine the contractual agreements that the customer has made with Honeywell relative to assessment for computer usage, extra shift usage, etc.

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SECTION I
INTRODUCTION TO AUTOLOG

The Autolog system for users of Series 200 computers has been written with the following objectives in mind:

1. To provide a simple, easy-to-use method for compiling records of equipment usage and equipment performance for each job.
2. To provide cumulative equipment usage and performance figures to facilitate statistical analysis; and
3. To provide a complete accounting of computer time, including down time, non-productive time, productive time, and rerun time.

Autolog generates four brief reports containing information that fulfills these objectives. Both productive and non-productive time are reported, enabling the user to increase the efficiency of his installation by correcting noted deficiencies.

INPUT

The input data are on Machine Log sheets prepared by the computer operator. See Figure 1-1. Each line of these sheets is converted to a punched card, and these cards are converted to a transaction tape which is used to update a master file maintained by the user.

OUTPUT REPORTS

Using the updated master file as input, Autolog generates any of the following reports. Section II contains detailed descriptions of these reports.

Machine Usage Summary

For the time period specified on the corresponding parameter card, and/or for each day in that period, this report summarizes scheduled time, machine down time, and selected rerun time. A summary line for the reporting period is included.

Customer Machine Performance Report

For the time period specified on the corresponding parameter card, and/or for each day in that period, this report summarizes machine performance, indicating productive time and the cause and duration of non-productive time. A summary line for the reporting period is included.

Honeywell Equipment Usage Report

For the month specified on the corresponding parameter card, this report summarizes chargeable time for each piece of computer equipment in the installation. It provides input for overtime reporting. A summary line for the reporting period is included.

MACHINE (Col's 1-2) ____

DATE (Col's 3-8) ____ Y Y M M D D

AUTOLOG
Machine Logging and Layout Form

RUN DESCRIPTION					EQUIPMENT USE											REMARKS/MISCELLANY					
START TIME	STOP TIME	TYPE	JOB NAME	TEST	Mem Used	# PTRS	# RDRS	# PCHS	# Tapes on TCU # 1 2 3 4	A	B	C	D	E	F	G	Field - 1	Field - 2	Field - 3	Field - 4	Field - 5	OPER
9 12	13 16	17	18 23	24	25 26	27	28	29	30 33	34	35	36	37	38	39	40	41 46	47 52	53 58	59 64	65 70	71 72

Figure 1-1. Autolog Machine Logging and Layout Form

An Extra-Devices Report can be generated which summarizes, for extra peripheral devices in use, the chargeable time for each day of the specified month.

Honeywell Customer Job Summary

On a sense switch option, a daily report is produced: time usage is reported by job within day within reporting period; else a periodic report is produced: time usage is reported by job within reporting period. In either case, for the time period specified on the corresponding parameter card, this report summarizes time usage and machine performance. A summary line for the reporting period is included as well as a summary of total idle time, total maintenance time, and total power-on time.

SECTION II

PROGRAM PHASES AND OUTPUT REPORTS

Each function of the Autolog system can be characterized as a maintenance function or an output function. The maintenance functions are to edit the input transactions in Phase 1 and to update or create a master file in Phase 2. The output functions are to generate the reports in Phases 3, 4, and 5.

The flowcharts in Appendix A summarize the design and operation of the system. Table 2-1 below summarizes the processing options available in each of the phases. The following pages describe these options and present sample output reports.

Table 2-1. Autolog Option Summary

Phase	Main Output	On Parameter Option	On Sense Switch Option			
			SSW1	SSW2	SSW3	SSW4
Card-to-tape Prephase	Unsorted transactions, blocked 5 72-character items per record.	-	Halt after loading	-	-	-
Sort Prephase	Sorted transactions, with Autolog header and trailer	See Sort 1 (Tape Sort A)	Halt after loading	-	-	-
Phase 1	Machine Logging and Layout Form Proof	-	Halt after loading	Presorted transactions on cards	Job validity check	Job name cards
Phase 2	Updated master; listing of deletions	-	Halt after loading	File-establishing run	-	-
Phase 3	Machine Usage Summary and Customer Machine Performance Report	-	Halt after loading	Control-panel parameter input	Daily (instead of periodic) report	-
Phase 4	Honeywell Equipment Usage Report	Extra Devices Report (second page)	Halt after loading	Control-panel parameter input	-	-
Phase 5	Honeywell Customer Job Summary (periodic)	-	Halt after loading	Control-panel parameter input	Job name card	Honeywell Customer Job Summary (daily)

CARD-TO-TAPE PREPHASE

If the transaction deck illustrated in Figure 4-1 is not presorted, it can be converted to tape using the systems tape program CARDTP, as indicated in Figure A-1, in preparation for sorting.

SORT PREPHASE

The cards illustrated in Figure 2-1 below should be inserted in the program deck at the insertion points indicated in the Information Bulletin, Sort 1 and Collate 1, DSI-247, in Figure 4-1, Sort 1 Program Deck. Such cards are coded in accordance with Section II, "Sort 1 Program Specialization Procedures," of that publication.

The parameter card, which is illustrated on line 22 in Figure 2-1 below, offers a choice of tape address, own coding, error procedures, etc. Line 22, then, is merely a sample and is not a specification: the user can change some of the parameters as desired. But the label modification cards on lines 4-6 and 11-12 are standard: generally, they should be punched exactly as illustrated.

EASYCODER
CODING FORM

PROBLEM SAMPLE AUTOLOG CODING PROGRAMMER DATE 9/4/65 PAGE 1 OF 1

	CARD NUMBER	TYPE	MARK	LOCATION	OPERATION CODE	OPERANDS	
	1 2 3 4 5	6	7	8 14	15 20	21 62	63 80
1							LABEL ID AND CHANGE
2							CARDS, INSERTION
3							POINT 1:
4	1HDR			027			HEADER LABEL ID.
5	00CUSTOMER NAME ON					HEADER	LABEL MODIFICATION.
6	1EOF			011			TRAILER LABEL ID.
7							
8							LABEL ID AND CHANGE
9							CARDS, INSERTION
10							POINT 2:
11	1EOF			011			TRAILER LABEL ID.
12	ENDΔOFΔDATA						LABEL MODIFICATION.
13							
14							
15							
16							
17							
18							
19							
20							
21							PARAMETER CARD:
22	04	01	02	031	11072	005005 001020030600904013 04	12
23							
24							
25							
26							
27							
28							
29							
30							

Figure 2-1. Sample Tape Sort A Specialization Deck

PHASE 1

In Phase 1, the program AUTLOG performs editing and error checking on the transaction file. It produces an Autolog Machine Logging and Layout Form Proof containing the card image of each line on the Autolog Machine Logging and Layout Form (the form is also called the machine log).

Autolog Machine Logging and Layout Form Proof

A sample Proof appears in Figure 2-2. This is intermediate output and should not be confused with the output reports generated in Phases 3, 4, and 5. For each new day or machine appearing on the machine log, a separate page of Proof is generated with headings similar to those on the log itself. If any error conditions are detected in an input transaction, an error line is printed below the offending card image. The error line contains symbolic notations indicating the type of error present. For example, see the entries F2/, F4/, and NF/ preceding the 10:05 o'clock entry in the page 2 area of the figure. The Phase 1 error codes are listed in Appendix B. If a transaction item contains no errors of these types, no error code is printed.

An item generating an error code other than NF/ (invalid job) is not written onto the output tape; an item generating an error code NF/ is written onto the output tape with the valid transactions. If error codes are generated, the user can correct the deck and rewrite the transaction tape so that the erroneous transactions are not included in the output reports. Because the reports summarize time usage and machine performance, erroneous transactions should be corrected rather than being ignored or deleted.

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/21/64 PAGE 1

RUN DESCRIPTION				EQUIPMENT USED										REMARKS/MISCELLANY					
START	STOP	EC	JOB	T	EM	PRM	RTR	DRH	PC TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			- -								- -		- -						
07:00	07:30		MAINT			- -								- -		- -						
07:35	08:25		A		4	1-1-1			4	1	1-1-1			1-1-1								
08:30	08:40		HON		4	1-1-			3					- -		- -		AUTOLOG				
08:40	08:55		IDLE			- -								- -		- -						X
08:40	08:55	R															PROGRAMMER OVERSLEPT					
09:00	12:00		AUTOMA		16	1-1-1			8					- -		- -		AUTOMATH RUN				
12:00	13:00		IDLE			- -								- -		- -		OUT TO LUNCH				
13:05	14:35		TRAFIC		8	1-1-1			4	1				- -		-1-						
14:40	16:30		PAYROL		12	1- -1			5					- -		2- -1						
16:35	16:55		INVENT		12	1-1-1			3					1- -1		-1-						
17:00	22:00		PRODCT		16	1-1-1			6	2	1-4-1			- -								
22:05			POFF			- -								- -		- -						

Figure 2-2. Honeywell Machine Logging and Layout Form Proof

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/22/64 PAGE 2

RUN DESCRIPTION			EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R D T	R C R	P H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			- -						- -		- -								
07:00	07:30		MAINT			- -						- -		- -								
07:35	09:30		METLFE		16	1	-1	-1	53	1		2	-3	-4		5-6-						
93:51	00:0	I	DLE			- -						- -		- -								
F2/ F4/ NF/																						
10:05	12:00		MERGEA		8	1	-1	-6		1		- -		- -								
12:00	13:00		IDLE			- -						- -		- -								
13:05	19:00		INVENT		12	1	-1	-1	3			- -		2-	-							
19:05	24:00		PAYROL		12	1	-	-1	5			- -		- -				MONTHLY PAYROLL				
24:00			POFF			- -						- -		- -								

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 02 11/30/64

RUN DESCRIPTION			EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R D T	R C R	P H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
00:02			POFF			- -						- -		- -								

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 02 11/29/64

RUN DESCRIPTION			EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R D T	R C R	P H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
12:05	17:00		FACTOR			- -						- -		- -								

Figure 2-2 (cont). Honeywell Machine Logging and Layout Form Proof

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 02 11/01/64

RUN DESCRIPTION																EQUIPMENT USED						REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			-	-					-	-		-	-											
07:00	12:00		MAINT			-	-					-	-		-	-											

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/29/64

RUN DESCRIPTION																EQUIPMENT USED						REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			-	-					-	-		-	-											
07:05	12:00		AUTOMA	16	1	-	1	-	1 8		1	1	-		-	1	-										
12:00	13:00		IDLE			-	-					-	-		-	-		OUT TO LUNCH									
13:05	17:00		INVENT	37	1	-	1	-	1 3			-	-		-	-											
17:05	22:35		PAYROL	51	1	-	1	-	1 32		1	-	1	-	1	-	-										
22:40			POFF			-	-					-	-		-	-											

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/27/64

RUN DESCRIPTION																EQUIPMENT USED						REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			-	-					-	-		-	-											
07:00	10:00		FACTOR	16	1	-	-	1	63		1	-	1	-	-	-											
10:05	12:40		INVENT	12	1	-	1	-	1 3		1	-	1	-	1	-	-										
12:50	16:20		METLFE	64	1	-	1	-	1 53		2	-	3	-	-	-											
16:25	19:05		PRODCT	16	1	-	1	-	1 4321			-	-		-	-											
19:10	23:50		AUTOMA	16	1	-	1	-	1 8			-	-		-	-											
23:55			POFF			-	-					-	-		-	-											

Figure 2-2 (cont). Honeywell Machine Logging and Layout Form Proof

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/26/64

RUN DESCRIPTION				EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F G	F1	F2	F3	F4	F5	OP
08:00			PON			- -						- -		- -							
08:00	09:30		IDLE			- -						- -		- -							
09:35	14:00		FACTOR		16	1-1-1			5	1		- -		- -							
14:00			POFF			- -						- -		- -							

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/25/64

RUN DESCRIPTION				EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F G	F1	F2	F3	F4	F5	OP
08:00			PON			- -						- -		- -							
08:05	12:00	D	COMPIL		8	1-1-1			8	1		-1-		1-	-1						
12:00	14:00		IDLE			- -						- -		- -			LUNCH HOUR				
14:05	15:00	T	A		4	1-1-1			4			- -		- -							
14:05	15:00	R														TAPE ERROR UNCORRECTABLE.					
15:00	16:00		IDLE			- -						- -		- -							
16:00			POFF			- -						- -		- -							

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/24/64

RUN DESCRIPTION				EQUIPMENT USED											REMARKS/MISCELLANY					
START	STOP	E C	JOB	T	M E M	P R T	R D R	P C H	TAPE TCU# 1234	A	B	C	D	E	F G	F1	F2	F3	F4	F5	OP
07:30			PON			- -						- -		- -							
07:35	09:25		CASHTA		16	1-1-1			3 3	1		- -		- -							
09:30	12:00		UPDATE		8	1-1-1			6		1-	-1		-1-							
12:00	13:00		IDLE			- -						- -		- -			LUNCH BREAK				
13:05	18:55		FACTOR		16	1-1-1			63	1	1-1-1			1-1-1							
19:00	24:00	O	FACTOR		16	1-1-1			63	1	1-1-1			1-1-1							
24:00			POFF			- -						- -		- -							

Figure 2-2 (cont). Honeywell Machine Logging and Layout Form Proof

HONEYWELL MACHINE LOG PROOF

USER: CUSTOMER NAME ON HEADER MACHINE 01 11/23/64

RUN DESCRIPTION				EQUIPMENT USED									REMARKS/MISCELLANY					
START	STOP	EC	JOB	T	MF MT	PR RH	DR	PC	TAPE TCU# 1234	A	B	C	D	E	F	G	F1	F2	F3	F4	F5	OP
07:00			PON			- -						- -		- -								
07:05	11:35		METLFE	16	1	1-1-1	5	3		1	2	-5-1	2	- -								
11:35	13:00		IDLE			- -						- -		- -				LONG LUNCH HOUR				
13:05	21:50		INVENT	12	1	1-1-1	3			1		-1-		1-	-	1						
21:50	24:00		TRAFIC	8	1	1-1-1	4			1		- -		1-	-							
24:00			POFF			- -						- -		- -								

Figure 2-2 (cont). Honeywell Machine Logging and Layout Form Proof

PHASE 2

In Phase 2, program UPDATE accepts the transactions created in Phase 1 and creates a new master file or updates an existing master file, as indicated in Figure A-4.

The transactions are added to the master file without destroying existing information. That is, the event that a transaction has a key that is identical to a key that is associated with an item in the old master file is not sufficient to cause the item in the old master file to be deleted: both items are copied onto the output master file.

The erase card can be used to delete one or more master file transactions. Deleted transactions are listed in a printout. Every few months, the user may wish to delete old items from the master file, or he may wish to delete items which are discovered to contain errors.

The output master file is used as input to the report generating phases.

PHASES 3, 4, AND 5

These phases accept the updated master file generated in Phase 2, and they generate reports as directed by parameter cards described in Section III.

All three phases have options that allow the generation of detailed or summary reports, as indicated in Table 2-1.

Phase 3 Output

In Phase 3, the program USAGE generates two reports as indicated in Figure A-5, viz., the

Customer Machine Performance Report (Figure 2-3), and the Machine Usage Summary (Figure 2-4). On a sense switch option, these reports include time usage by day for each day in the reporting period specified on the corresponding parameter card. In any case, a summary of the entire reporting period is printed in each report.

CUSTOMER MACHINE PERFORMANCE REPORT

This report contains two lines of information for each day being reported. For each day, the first of the two lines is explained by the first line of headings across the top of the report; the second of the two lines of information is explained by the second line of headings across the top of the report. The meaning of each of the headings in the first line of headings in Figure 2-3 is as follows. The entries 1, 2, etc., in the "COLUMN(S)" column below always refer to logical groups of information on the report (i.e., to logical columns) rather than to print positions 1, 2, etc.

COLUMN(S)	CONTENTS	INTERPRETATION
1	DATE	The date of the day being reported. The format is mm/dd/yy, where mm, dd, and yy are each a pair of decimal digits.
2	PCT PROD	Percentage of scheduled time that is productive time. The total productive time is divided by the total scheduled time. The result is multiplied by 100, giving percent.
3	PCT UP	Percentage of scheduled time that is up time. The total scheduled time minus (1) all down time and (2) rerun time due to machine malfunction. The result is divided by the total scheduled time. The result is multiplied by 100, giving percent.
4	TOTAL SCHED	Total scheduled time in hours. Customer scheduled time plus Honeywell scheduled time.
5	TOTAL PROD	Total productive time in hours. Customer productive time plus Honeywell productive time.
6	TOTAL UP	Total up time in hours. Total scheduled time minus (1) down time and (2) rerun time due to machine malfunction.
7	TOTAL CHARGE	Total chargeable time. Total customer productive time plus all rerun time due to customer error.

The meaning of each of the headings in the second line of headings is as follows. The corresponding time entries in the "information" lines are expressed in decimal hours to the nearest tenth of an hour.

COLUMN(S)	CONTENTS	INTERPRETATION
1	CUST SCHED	All the computer time the customer has actually scheduled.
2	HON SCHED	All the computer time scheduled for Honeywell runs.

COLUMN(S)	CONTENTS	INTERPRETATION
3	CUST PROD	All productive time used by the customer.
4	HON PROD	All productive time used by Honeywell.
5	SETUP	The elapsed time between the end of one run and the start of the next.
6	IDLE	All the time during which the computer is idle.
7	DOWN	All the time during which the computer is inoperable.
8	HONEYWELL	This group lists all rerun time chargeable to Honeywell.
8a	MACH	All rerun time due to machine malfunction.
8b	TAPE	All rerun time due to tape error.
8c	SOFT	All rerun time due to a problem in Honeywell software.
8d	OTHER	Any other rerun time due to Honeywell error.
9	CUSTOMER	This group lists all rerun time chargeable to the customer.
9a	OPER	Operator-error rerun time.
9b	PROG	Program-error rerun time.
9c	INPT	Input-error rerun time.
9d	OTHER	Any other rerun time chargeable to the user.

The summary line has the same format as the daily lines, except that in the summary line the date field includes the start and stop dates of the reporting period.

CUSTOMER MACHINE PERFORMANCE REPORT
CUSTOMER NAME ON HEADER

11/23/64 TO 11/25/64 MACHINE 01 PAGE 2

DATE				PCT PROD	PCT UP	TOTAL SCHED	TOTAL PROD	TOTAL UP RERUNS	TOTAL CHARGE
CUST SCHED	HON SCHED	CUST PROD	HON PROD	SETUP	IDLE	DOWN	HONEYWELL MACH	TAPE	SOFT	OTHER	CUSTOMER NAME ON HEADER OPER	PROG	INPT	OTHER
11/23/64				100%	100%	15.5	15.5	15.5	15.5					
15.5		15.5		.2	1.4									
11/24/64				67%	100%	15.1	10.1	15.1	15.1					
15.1		10.1		.4	1.0						5.0			
11/25/64				%	%	4.8	.0	.0	.0					
4.8		.0		.2	3.0	3.9		.9						
11/23/64 TO 11/25/64				72%	86%	35.4	25.6	30.6	30.6					
35.4		25.6		.8	5.4	3.9		.9			5.0			

Figure 2-3. Customer Machine Performance Report

MACHINE USAGE SUMMARY

This report is a recap of the Customer Machine Performance Report. It includes only scheduled time, machine down time, and selected rerun time. One line is printed for each day, and a summary line is printed for the entire reporting period. The meaning of each of the headings in Figure 2-4 is as follows.

COLUMN(S)	CONTENTS	INTERPRETATION
1	mm/dd/yy	The date of the day being reported on the current line. The format is mm/dd/yy, where mm, dd, and yy are each a pair of decimal digits.
2	SCHEDULED TIME	Time during which the computer is scheduled to be used during the day being reported.
2a	CUST SCHED	Time during which the customer is scheduled to use the computer.
2b	OTHER SCHED	Computer time scheduled for any user other than the customer charged for the computer time.
2c	TOTAL SCHED	Total scheduled time. The sum of the contents of columns 2a and 2b.
3	MACHINE DOWN TIME	This category includes the time during which the computer is scheduled to be used but is inoperative, and resulting rerun time.
3a	MACH DOWN	Machine down time.
3b	RERUN DOWN	Rerun time due to machine malfunction.
3c	TOTAL DOWN	Total machine down time. The sum of the contents of columns 3a and 3b.
4	SELECTED RERUN TIME	This category includes all non-chargeable rerun time except rerun time due to machine malfunction.
4a	RERUN TAPE	Rerun time due to tape error.
4b	RERUN SOFT	Rerun time due to software error.
4c	RERUN OTHER	Non-chargeable rerun time due to causes other than 4a and 4b.
4d	TOTAL RERUN	Total rerun time. The sum of the contents of columns 4a, 4b, and 4c.

The summary line has the same format as the daily lines, except that in the summary line the first column contains the word SUMMARY instead of the date.

MACHINE 01 USAGE SUMMARY
CUSTOMER NAME ON HEADER

	SCHEDULED TIME			MACHINE DOWN TIME			SELECTED RERUN TIME			
	CUST SCHED	OTHER SCHED	TOTAL SCHED	MACH DOWN	RERUN DOWN	TOTAL DOWN	RERUN TAPE	RERUN SOFT	RERUN OTHER	TOTAL RERUN
11/23/64	15.5		15.5							
11/24/64	15.1		15.1							
11/25/64	4.8		4.8	3.9		3.9	.9			.9
SUMMARY	35.4		35.4	3.9		3.9	.9			.9

Figure 2-4. Machine Usage Summary

Phase 4 Output

In Phase 4, the program PHZWEI generates the Honeywell Equipment Usage Report as indicated in Figure A-6. If column 7 of the Phase 4 parameter card contains 0, an extra page containing chargeable time for extra peripheral devices is also printed.

HONEYWELL EQUIPMENT USAGE REPORT

This report lists the chargeable time used by each piece of equipment (including modular memory) for a given computer during each day of a specified month. Chargeable time is defined as customer productive time plus all rerun time attributable to customer error.

The meaning of each of the headings on the first page of output (Figure 2-5) is as follows. Again, time entries are in hours to the nearest tenth of an hour.

COLUMN(S)	CONTENTS	INTERPRETATION
1	xx	DATE. A pair of decimal digits specifying the day of the month (1 through 31) being reported. The specified month appears in the heading line, together with the year.
2	4K	The time during which the first 4K characters of main memory were used.
3	8K	The time during which the second 4K characters of main memory were used. The time during which the first 4K characters were used is not included in this entry, etc.
4	12K	The time during which the third 4K characters of main memory were used.

COLUMN(S)	CONTENTS	INTERPRETATION
5	16K	The time during which the fourth 4K characters of main memory were used.
6	20K	The time during which the fifth 4K characters of main memory were used.
7	24K	The time during which the sixth 4K characters of main memory were used.
8	28K	The time during which the seventh 4K characters of main memory were used.
9	32K	The time during which the eighth 4K characters of main memory were used.
10	PTR	The chargeable time used by the printer. NOTE: For all peripheral devices of the same type, except tape drives, the number of devices used is multiplied by the chargeable run time, giving the chargeable time for the device.
11	RDR	Card reader chargeable time. See note for column 10.
12	PCH	Card punch chargeable time. See note for column 10.
13	TCU #1	Chargeable time for tape control unit number 1, including chargeable time of attached devices, as follows.
13a	TCU	Chargeable time for TCU #1, excluding chargeable time for the devices attached thereto.
13b	TAPE	Chargeable time for all tape drives attached to TCU #1.
14	TCU #2	Similar to column 13.
14a	TCU	Similar to column 13a.
14b	TAPE	Similar to column 13b.

HONEYWELL EQUIPMENT USAGE REPORT
CUSTOMER NAME ON HEADER

11/64 MACHINE # 01 PAGE 1

	MEMORY USED														
DATE	4K	8K	12K	16K	20K	24K	28K	32K	PTR	RDR	PCH	TCU #1 TCU	TCU #1 TAPE	TCU #2 TCU	TCU #2 TAPE
21	12.4	11.6	10.1	8.0					12.4	10.6	12.4	11.6	69.9		
22	14.5	14.5	14.5	3.7	2.3	2.3	.4	.4	14.5	9.6	14.5	14.1	56.8	1.4	4.2
23	15.5	15.5	15.5	6.7	2.2	2.2	2.2		15.5	15.5	15.5	15.5	57.7	4.5	13.5
24	15.1	15.1	15.1	15.1	2.5				15.1	15.1	15.1	15.1	85.2	10.8	32.4
25	3.9	3.9							3.9	3.9	3.9	3.9	31.2		
26	.0														
TOTALS	61.4	60.6	55.2	33.5	7.0	4.5	2.6	.4	61.4	54.7	61.4	60.2	300.8	16.7	50.1

PREV MAINT 1.0 DOWN TIME . RERUN TIME .

Figure 2-5. Honeywell Equipment Usage Report, First Page

The summary line has the same format as the daily lines, except that in the summary line the first column contains the word TOTALS instead of the date.

In addition, three informational fields containing Honeywell-chargeable time are included: PREV MAINT (Total Preventive Maintenance Time), DOWN TIME (Total Down Time), and RERUN TIME (Total Rerun Time).

EXTRA-DEVICES REPORT

A zero in column seven of the Phase-4 parameter card requests, for extra peripheral devices in use, a listing of chargeable time for each day of the indicated month. This extra-devices output is printed as the second page of the Honeywell Equipment Usage Report as in Figure 2-6.

The meaning of each of the headings in the figure is as follows:

COLUMN(S)	CONTENTS	INTERPRETATION
1	Name from columns 8-10 of Phase 4 parameter card if name is non-blank; else "A" is printed as column heading.	Chargeable time for extra device "A."
2	Columns 11-13 if non-blank; else B.	Chargeable time for extra device "B."
3	Columns 14-16 if non-blank; else C.	Chargeable time for extra device "C."
4	Columns 17-19 if non-blank; else D.	Chargeable time for extra device "D."
5	Columns 20-22 if non-blank; else E.	Chargeable time for extra device "E."
6	Columns 23-25 if non-blank; else F.	Chargeable time for extra device "F."
7	Columns 26-28 if non-blank; else G.	Chargeable time for extra device "G."

The TOTALS line has the same format as the daily lines.

In addition, three informational fields containing Honeywell-chargeable time are included: PREV MAINT (Total Preventive Maintenance Time), DOWN TIME (Total Down Time), and RERUN TIME (Total Rerun Time).

HONEYWELL EQUIPMENT USAGE REPORT
CUSTOMER NAME ON HEADER

11/64 MACHINE # 01 PAGE 4

	PTR	RAM	DRM	DIS	PTP	OSC	CON
21	12.3	6.1	20.8	6.1	4.4	2.6	2.6
22	3.8	3.8	5.7	7.6	21.3	11.4	
23	15.5	9.0	31.3	4.5	20.0		8.8
24	12.6	13.3	10.8	13.3	10.8	13.3	10.8
25							
26	4.4						
27	12.6		16.1		2.6		
29	10.4	4.9	10.4		5.5	4.9	
	71.6	37.1	95.1	31.5	64.6	32.2	22.2

PREV MAINT	DOWN TIME	RERUN TIME
1.0	3.9	.9

Figure 2-6. Honeywell Equipment Usage Report, Second Page

Phase 5 Output: The Honeywell Customer Job Summary

In Phase 5, program PHFIER generates the Honeywell Customer Job Summary as in Figure A-7. If sense switch 4 is not set, time is listed by job for the entire reporting period, giving a periodic report as in Figure 2-7; else time is listed by job and by day for the entire reporting period, giving a daily report.

In any case, the report displays the time usage by job for the reporting period indicated on the Phase 5 parameter card. Jobs whose names are not in the job-name table in program PHFIER are automatically totaled and printed in the illegal-job line ILLJOB which follows all other job lines. A summary line for all jobs is also printed.

The meaning of each of the headings is as follows.

COLUMN(S)	CONTENTS	INTERPRETATION
1	JOB	The name of the job to which the report line corresponds.
2	TOTAL	The total time scheduled for the job during the indicated reporting period if a summary report is requested; else the total time scheduled for each job for each day during the indicated reporting period.
3	PROD	The total productive time for the job.
4	TEST	The total time charged to testing, i.e., for which column 24 of the machine logging and layout form contains T.
5	SETUP	The total setup time for the job.
6	RERUNS	Totals for the following types of reruns.
6a	OPER	The total rerun time due to operator error.
6b	PROG	The total rerun time due to program error.
6c	INPT	The total rerun time due to input error.
6d	OTHER	The total rerun time of other types chargeable to the user.
6e	HON	The total rerun and down time chargeable to Honeywell.

The two summary lines CUSTOMER JOB TOTALS and HONEYWELL JOB TOTALS have the same format as the lines in the body of the report. The CUSTOMER JOB TOTALS line lists the time totals for all customer jobs for the reported dates. The HONEYWELL JOB TOTALS line lists the total time of all Honeywell jobs run during the same period.

HONEYWELL CUSTOMER JOB SUMMARY
CUSTOMER NAME ON HEADER

11/21/64 TO 11/29/64 MACHINE #01 PAGE 2

JOB	TOTAL	PROD	TEST	SETUP	RERUNS OPER	PROG	INPT	OTHER	HON
UPDATE	2.5	2.5		.1					
MERGEA	1.9	1.9		.6					
METLFE	9.9	9.9		.4					
PRODCT	7.7	7.7		.2					
INVENT	21.5	21.5		.5					
PAYROL	12.2	12.2		.3					
TRAFIC	3.7	3.7		.1					
AUTOMA	12.6	12.6		.3					
FACTOR	18.2	13.2		.2	5.0				
A	1.7	.8		.1					.9
ILLJOB	5.7	1.8		.1					3.9
CUSTOMER JOB TOTALS	97.6	87.8		2.9	5.0				4.8
HONEYWELL JOB TOTALS	.2	.2		.1					
IDLE TIME	10.2								
MAINT	1.0								
TOTAL POWER ON TIME	112.2								

Figure 2-7. Honeywell Customer Job Summary

Three additional totals are printed after the two summary lines: IDLE TIME (Total Idle Time), MAINT (Total Maintenance Time), and TOTAL POWER-ON TIME. The total maintenance time reflects preventive maintenance time – not down time. The total power-on time is computed by subtracting the power-on time for each day from the power-off time. If a new day is started without previously removing power from the computer, total power-on time is computed by subtracting the power-on time for each day from 2400. Because of rounding error, the total power-on time may not exactly equal the total of scheduled time, idle time, setup time, and maintenance time.

SECTION III
PARAMETER CARDS

A separate parameter card must be submitted to request each desired report, or else the same information must be entered by some other means such as the control panel. For example, Phase 4 processes all transactions for the computer specified in the MACHINE field of the Phase 4 parameter card and, for that computer, for the month specified in columns 3-6 of that card. If reports for more than one month or for more than one computer are desired, a separate Phase 4 parameter card must be submitted for each month and each computer.

The life-size maps on the margins of the following pages will serve as coding templates when aligned on blank Easycoder coding forms. These templates can also be curled into the binding at page 4-17 where they can be used to interpret the lines of sample coding that were used to generate the output in Section II.

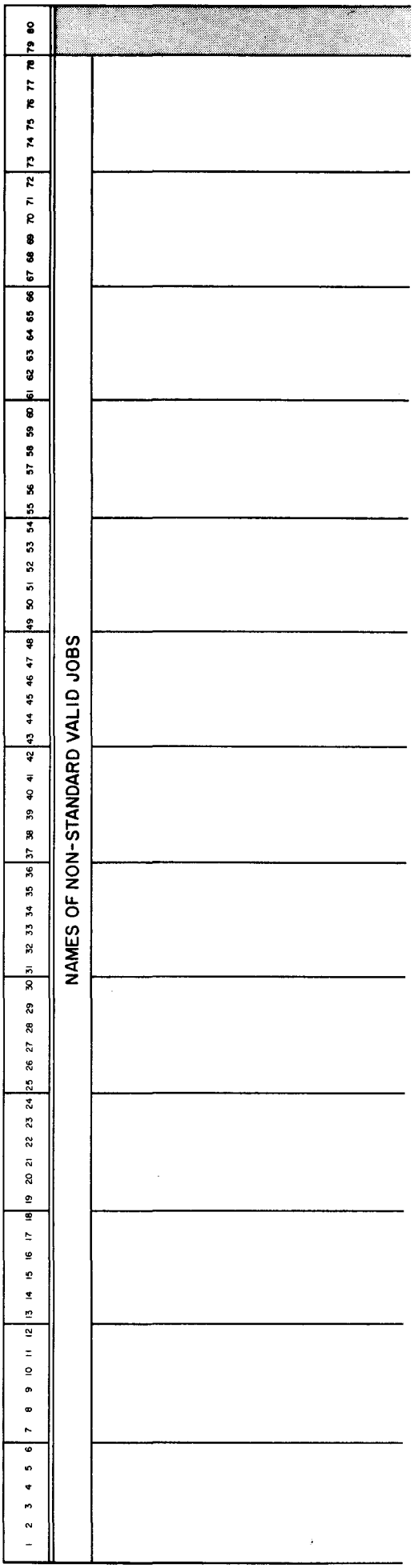
Parameter cards for all phases and all reports can be stacked in the card-reader input hopper as indicated in Figure 4-1, or else the cards can be loaded into the reader individually by phase as indicated in the flow charts in Appendix A. The latter procedure may be preferred if the system programs are in card form.

PHASE 1 JOB-NAME CARDS

If sense switch 3 is ON during Phase 1, a job validity check is performed. Program AUTLOG compares each job name in the transaction file with the job name table in program AUTLOG. If the name is not in the table, the transaction is flagged with the symbol NF/ on the Machine Logging and Layout Form Proof and is written on the output tape; else the transaction is not flagged and is written on the output tape.

The table contains some standard job names and 26 non-standard names. Initially, the standard names are HON (Honeywell Time), IDLE (Idle Time), MAINT (Maintenance Time), POFF (Power Off), and PON (Power On), and the non-standard names are blank.

If the user wishes to change both the standard and the non-standard names, he includes the desired names in the symbolic deck as a set of constants and he reassembles. If he wishes to change only the non-standard names, he sets sense switch 4 ON, causing two valid-job-name cards to be read from the card reader. The format of these cards is illustrated at the right. These names, whether blank or non-blank, are loaded into the non-standard area of the table, where they remain for the duration of the current phase.



Phase 1 Job-Name Card Specification

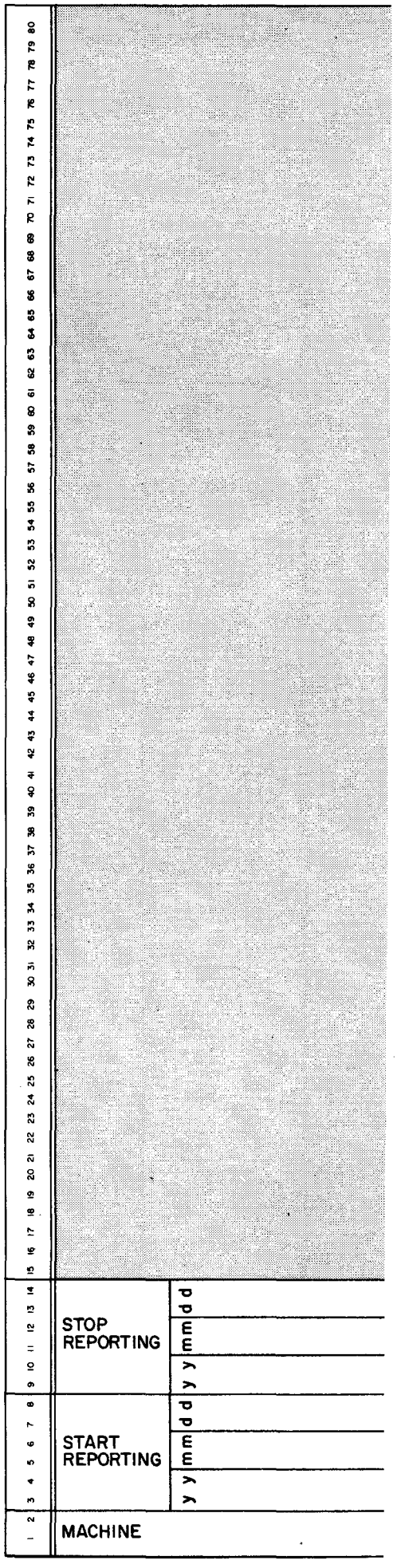
COLUMN(S)	CONTENTS	INTERPRETATION
1-6	xxxxxx	VALID JOB NAME. This name is to be loaded into the corresponding position of the valid-job-name table in program AUTLOG. The name can consist of up to six alphanumeric characters.
7-78	VALID JOB NAMES. Same specifications as for columns 1-6.	
79-80	Not used.	

PHASE 3 PARAMETER CARD

One Phase 3 parameter card is needed to generate each Customer Machine Performance Report or Machine Usage Summary. The format of this card is illustrated at the right.

PHASE 5 PARAMETER CARD

One Phase 5 parameter card is needed to generate each Honeywell Customer Job Summary. The format of this card is illustrated at the right.



Phase 3 and Phase 5 Parameter Card Specification

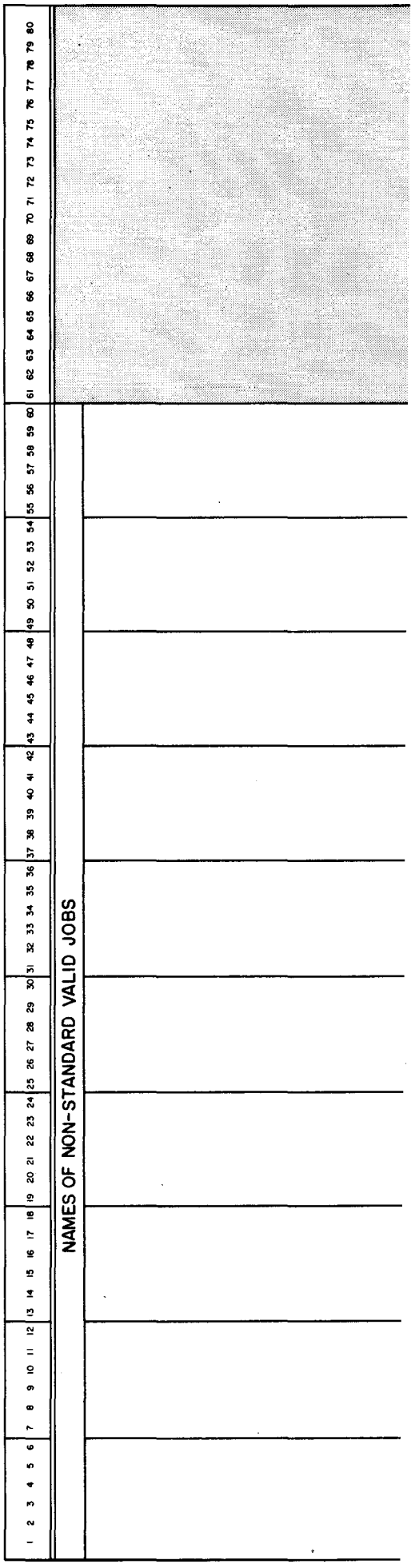
COLUMN(S)	CONTENTS	INTERPRETATION
1-2	xx	MACHINE. Enter any two alphanumeric characters except 00 to identify the machine for which jobs are being reported. Jobs for which the same two characters appear in the log sheet (i.e., data card) will be included in the report.
3-8	yymmdd	START DATE OF REPORTING PERIOD, where yy, mm, and dd are collectively six decimal digits specifying the year, month, and day, respectively.
9-14	yymmdd	STOP DATE OF REPORTING PERIOD, where yy, mm, and dd are collectively six decimal digits specifying the year, month, and day, respectively.
15-80	Not used.	

PHASE 5 JOB-NAME CARDS

During Phase 5, program PHFIER compares the name of each master-file job whose date falls in the specified reporting period with a job-name table in program PHFIER. If the name is not in the table, the transaction is summarized only under the job name ILLJOB in the output reports; else the transaction is listed under its own name.

The table contains some standard job names and 10 non-standard names. Initially, the standard names are HON (Honeywell Time), IDLE (Idle Time), MAINT (Maintenance Time), POFF (Power Off), and PON (Power On), and the non-standard names are blank.

If the user wishes to change the non-standard names, he sets sense switch 3 ON as indicated in Figure A-7, causing one valid-job name to be read from the card reader. The format of this card is illustrated at the right. These names, whether blank or non-blank, are loaded into the non-standard area of the table, where they remain for the duration of the current phase.



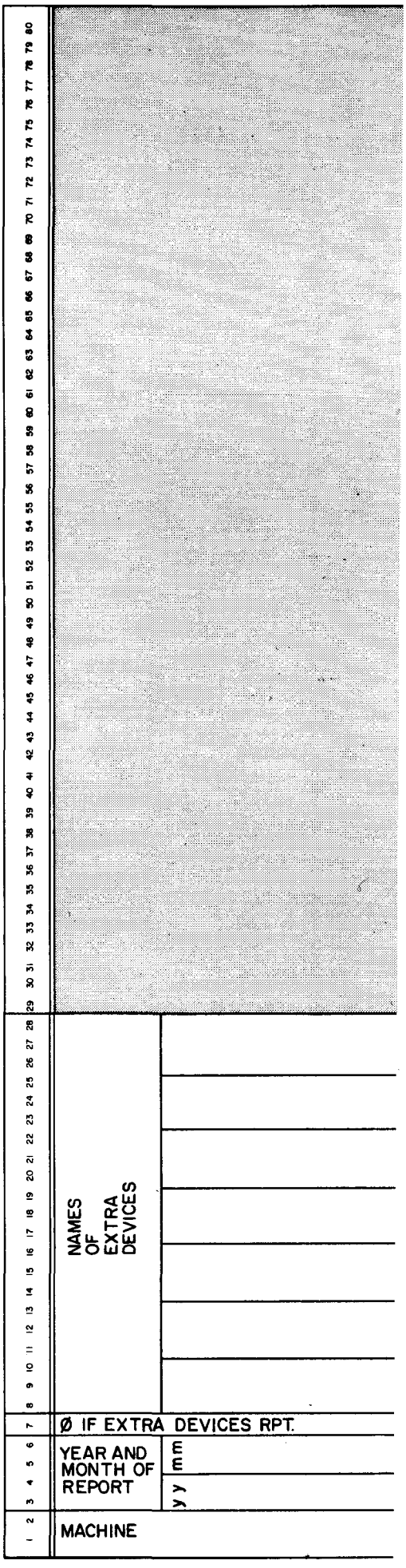
Phase 5 Job-Name Card Specification

COLUMN(S)	CONTENTS	INTERPRETATION
1-6	xxxxxx	VALID JOB NAME. This name is to be loaded into the corresponding position of the valid-job-name table in program PHFIER. The name can consist of up to six alphanumeric characters.
7-60	VALID JOB NAMES. Same specification as for columns 1-6.	
79-80	Not used.	

PHASE 4 PARAMETER CARD

One Phase 4 parameter card is needed to generate each Honeywell Equipment Usage Report. The format of this card is illustrated at the right.

PHASE 4 PARAMETER CARD TEMPLATE



Phase 4 Parameter Card Specification

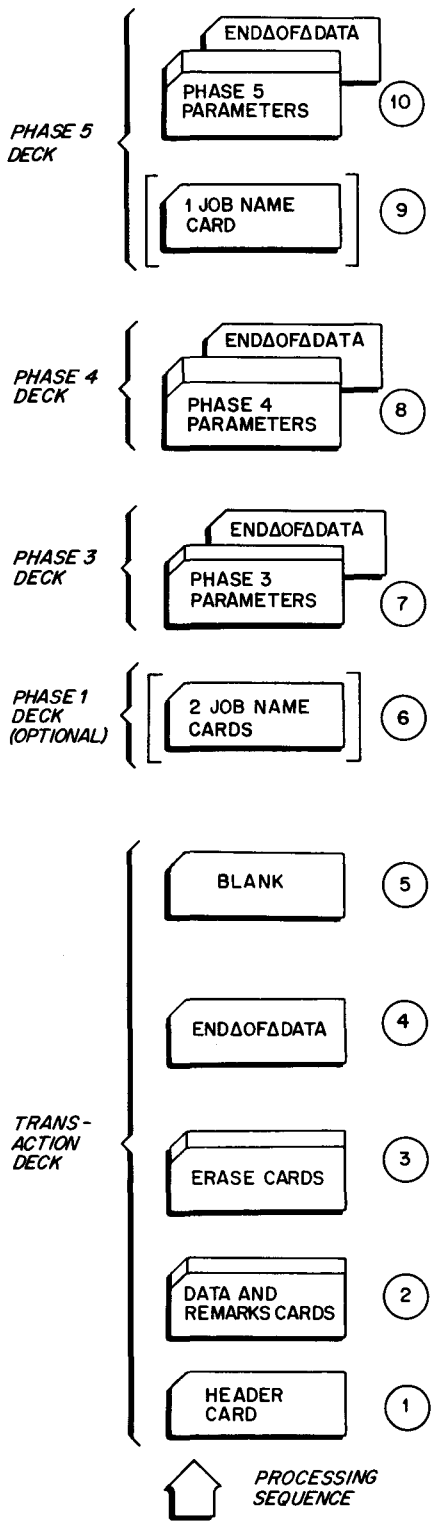
COLUMN(S)	CONTENTS	INTERPRETATION
1-2	xx	MACHINE. Enter any two alphanumeric characters except 00 to identify the machine for which jobs are being reported. Jobs for which the same two characters appear in the log sheet (i. e. , data card) will be included in the report.
3-6	yymm	YEAR AND MONTH OF REPORT PERIOD, where yy and mm are collectively four decimal digits specifying the year and month, respectively.
7	0	EXTRA DEVICES REPORT. Enter a zero in this column if extra peripheral devices recorded in columns 34-40 of the machine log are to be reported; else enter blank or non-zero in this column, indicating that additional equipment is not being reported and that columns 8-28 are to be ignored.
8-28	xxx	NAMES OF EXTRA DEVICES. Columns 8-28 contain up to seven three-character names which identify the devices recorded in columns 34-40 of the machine log and which appear as headings on the second page of the Phase 4 output report. If any (n^{th}) of the seven fields is blank, the corresponding (n^{th}) letter of the alphabet, A-G, is automatically used to head the corresponding report column.
29-80	Not used.	

SECTION IV
INPUT DATA

The input to Autolog is punched cards or magnetic tape containing the card images. In either case, the makeup of the input deck is as shown in the Data Deck in Figure 4-1. If the input to the Autolog run is card images on tape, the information on the tape is in the same format and sequence as the data deck in the figure, except that two end records containing the characters END in positions 1-3 terminate the record.

The cards in the data deck are variously data cards (one for each line on the users Machine Logging and Layout Form), remarks cards each of which describes the preceding data card, and erase cards which cause a transaction or series of transactions to be erased from the master file. The first card in the data must be a header card, and the last card in the data deck must be an end card as indicated in the figure. Specifications for all cards in the data deck appear on the following pages.

The life-size maps on the margins of the following pages will serve as coding templates when aligned on blank Easycoder coding forms. These templates can also be curled into the the binding at page 4-17, where they can be used to interpret the lines of sample coding that were used to generate the output in Section II.



NOTE: The encircled keys in this illustration correspond to keyed coding lines in Figure 4-2, page 4-17.

A blank card is needed to terminate double buffering.

In the master file, the END card becomes the 11-character end-of-file record and the 11-character end-of-information record.

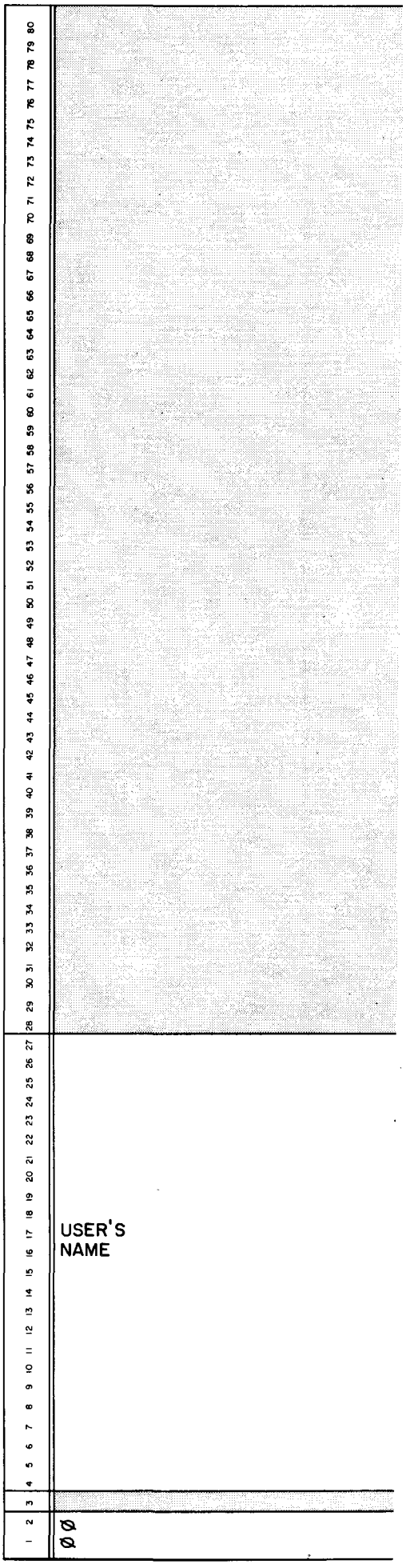
Transaction cards. To be sorted by machine (major key), date, start time, and stop time. In the master file, each transaction card is a 360-character record of five 72-character items.

In the master file, the header card is a 27-character header record with a banner character of 00.

Figure 4-1. Setup of the Transaction Deck and Parameter Decks

HEADER CARD

One standard Autolog header card is needed in each transaction card deck or tape submitted as input to program AUTLOG in Phase 1. The format of this card is illustrated at the right.

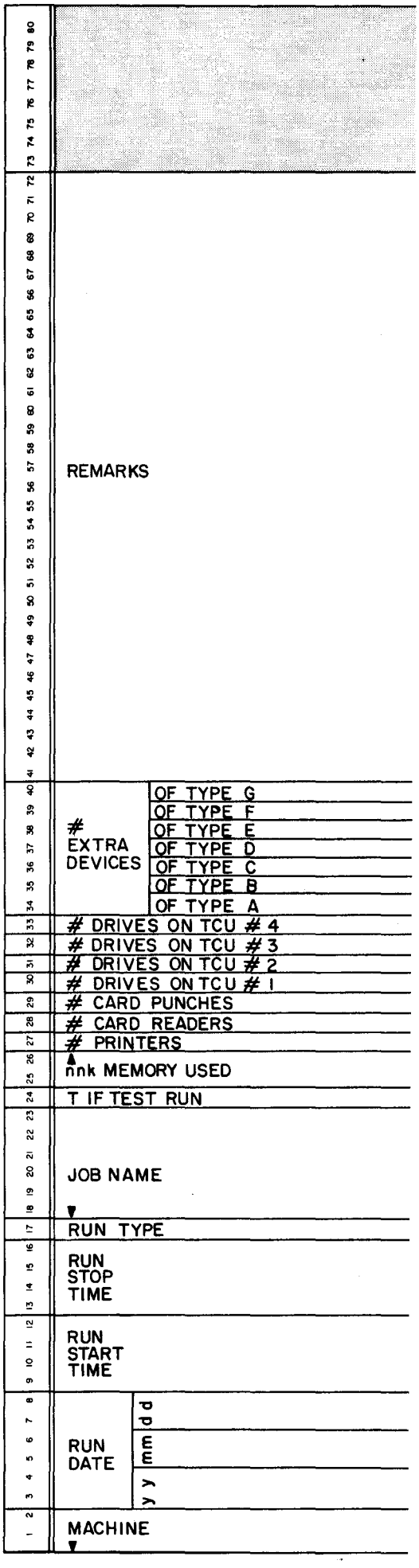


Header Card Specification

COLUMN(S)	CONTENTS	INTERPRETATION
1-2	00	A two character banner.
3	Not used.	
4-27	x...x	USER'S NAME. Any alphanumeric character can be used.
28-80	Not used.	

DATA CARD

One data card must be punched for each line on the user's Machine Logging and Layout Form. Because the format of the log and the data card are similar, the data cards can be key-punched directly from the log. Retrieve the machine identification and the run date from the upper left corner of the log and punch them in columns 1-8 as indicated in the illustration at the right. The operator who maintains the log should insure that all log entries are legible enough for keypunching and that zeros can be distinguished from the letter O (as by slashing the zeros).

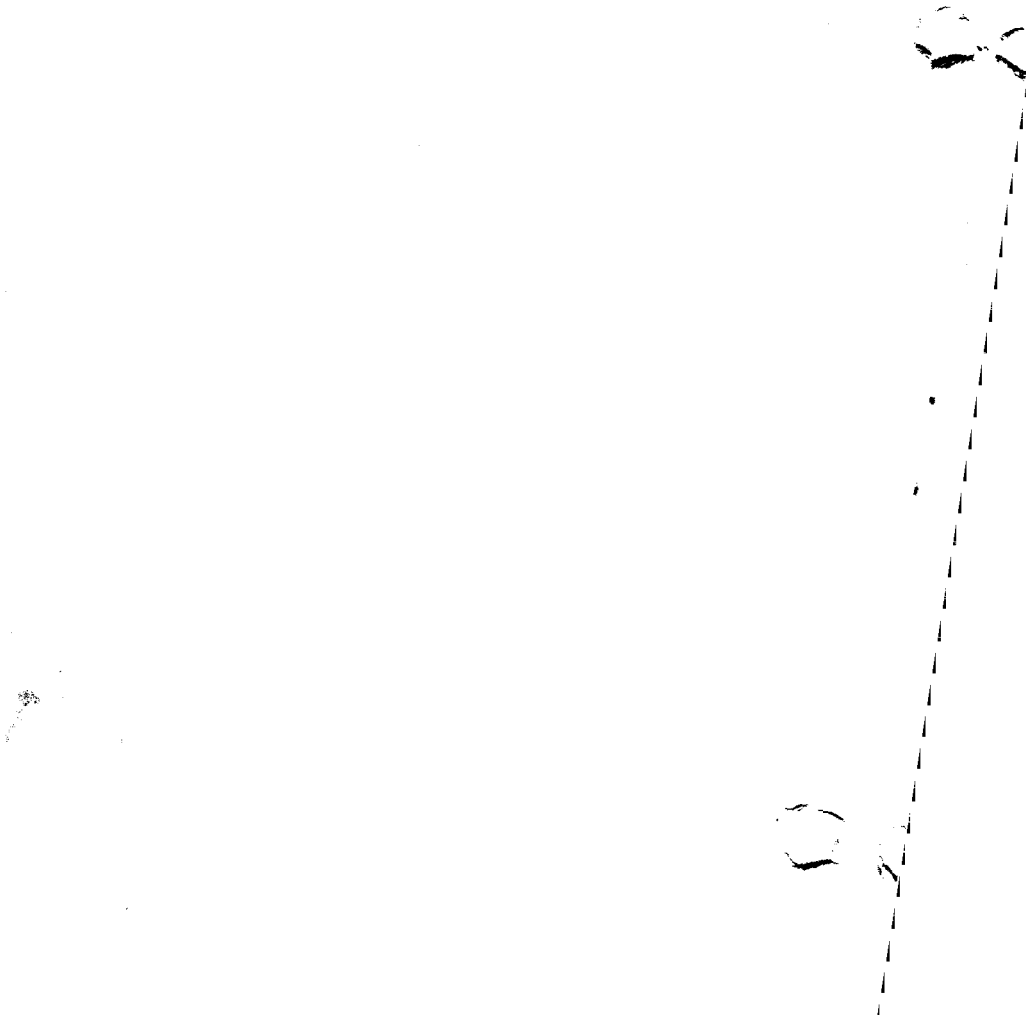


Data Card Specification

COLUMN(S)	CONTENTS	INTERPRETATION
1-2	xx	MACHINE. Enter any two alphanumeric characters except 00 to identify the machine on which the job is run.
3-8	yymmdd	DATE, where yy, mm, and dd are collectively six decimal digits specifying the year, month, and day of the run.
9-12	nnnn	START TIME. Military time is used. For example, 3 o'clock in the afternoon is expressed as 1500. This field must not be blank.
13-16	nnnn	STOP TIME. The time at which the run stops. Military time is used, where nnnn are decimal digits. This field must not be blank. For example, the stop time for jobs PON and POFF should be zeros rather than blank.
17	RUN TYPE. A code entered in this column specifies the category under which the run time will be summarized in the Customer Machine Performance Report in Phase 3. Leave this column blank if the run is a first-time run. If the run is a rerun due to some type of failure or error in the first run, the reason for the rerun should be indicated by coding the appropriate symbol in column 17 as specified below.	
	Honeywell-Chargeable Time	
	D	DOWN TIME. Rerun due to machine down time.
	M	MACHINE. Rerun due to machine error.
	T	TAPE. Rerun due to tape error.
	S	SOFTWARE. Rerun due to Honeywell software error.
	H	OTHER HONEYWELL CHARGEABLE TIME. Any time other than M, S, and T that is chargeable to Honeywell.
	Customer-Chargeable Time	
	O	OPERATOR. Rerun due to operator error.
	P	PROGRAM. Rerun due to customer program error.
	I	INPUT. Rerun due to customer input error.
	U	OTHER CUSTOMER-CHARGEABLE TIME. Any time other than O, P, and I that is chargeable to the customer.
18-23	xxxxxx	JOB NAME. Enter up to six alphanumeric characters except all zeros.
24	T blank	T IF TEST RUN. If the run is a test run rather than a production run, enter the letter T in this column; else leave this column blank. Test time is summarized in the Phase 5 output report.
25-26	K MEMORY USED. Enter two decimal digits specifying the number of modules of main memory used during the run, as follows:	
	02	2,048 CHARACTERS.
	04	4,096 CHARACTERS.
	08	8,192 CHARACTERS.

Data Card Specification (cont)

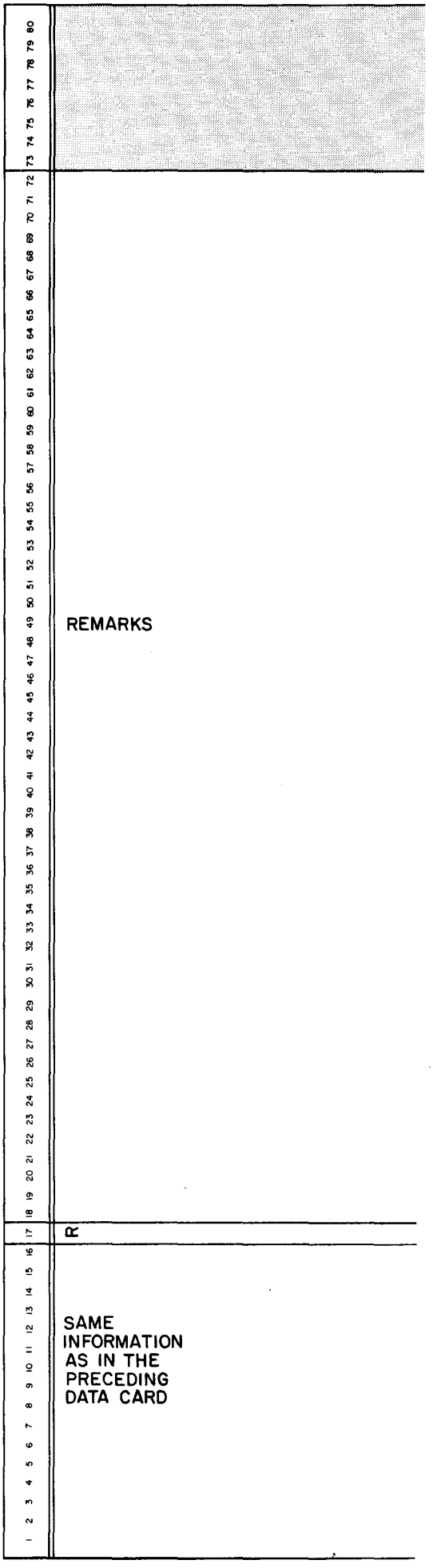
COLUMN(S)	CONTENTS	INTERPRETATION
25-26 (cont)	16	16,384 CHARACTERS.
	32	32,768 CHARACTERS.
	65	65,536 CHARACTERS.
27	n	NUMBER OF PRINTERS USED. A decimal digit.
28	n	NUMBER OF CARD READERS USED. A decimal digit.
29	n	NUMBER OF CARD PUNCHES USED. A decimal digit.
30	n	NUMBER OF TAPE DRIVES USED ON TCU #1. A decimal digit.
31	n	NUMBER OF TAPE DRIVES USED ON TCU #2. A decimal digit.
32-33		Not used.
34-40	EXTRA EQUIPMENT. The use of peripheral equipment other than that included in the above categories is reported in columns 34-40. The number of extra devices used of type A is entered in column 34 as a decimal digit, the number of extra devices used of type B is entered in column 35 as a decimal digit, and so on through column 40. The type of device to which a column A, B, C, etc., corresponds is specified in columns 8-28 of the Phase 4 parameter card and is displayed in an Extra Devices report if column 7 of that card contains zero. For example, if column A is the extra-printer category (as PTR in Figure 2-6), and there are 2 extra printers being used in the run, enter 2 in column 34.	
41-72	x...x	REMARKS. Any Hollerith characters.
73-80		Not used.



REMARKS CARD

A remarks card can be used to describe the preceding data card, as when the remarks field of that data card is not large enough. A remarks card should be placed in the data deck immediately following the data card to which it refers. The remarks card appears on the Machine Logging and Layout Form Proof in Phase 1 but is not written on the output tape.

REMARKS-CARD TEMPLATE



Remarks Card Specification

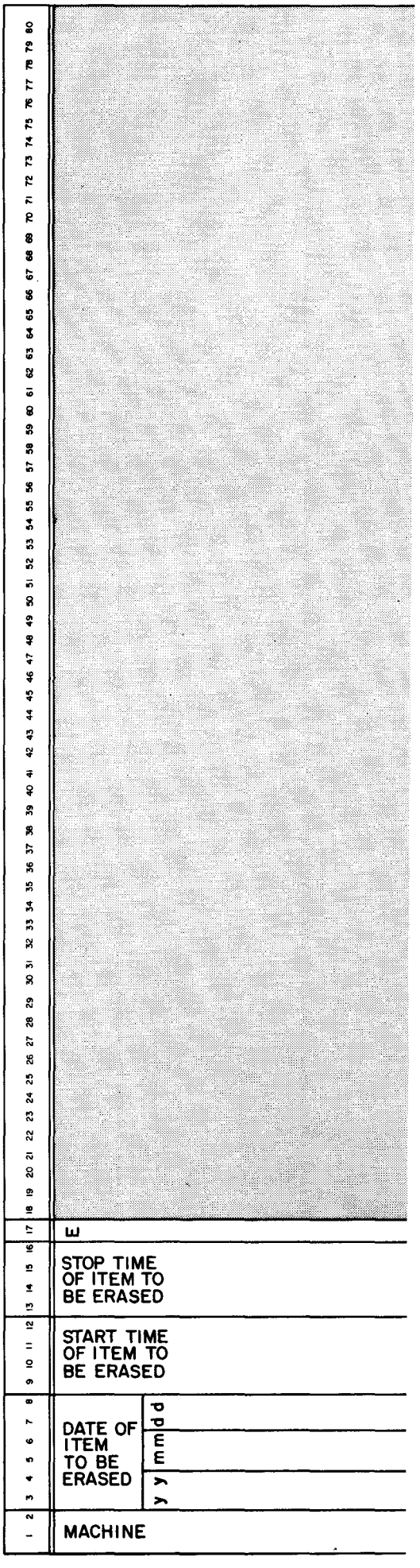
COLUMN(S)	CONTENTS	INTERPRETATION
1-16	These columns must contain the same information as is punched in columns 1-16 of the data card to which this remarks card refers.	
17	R	REMARKS-CARD INDICATOR
18-72	x...x	REMARKS. Any Hollerith characters.
73-80		Not used.

ERASE CARDS

Erase cards are of two types: the single-erase card deletes one transaction from the master file; the multiple-erase card eliminates a complete set of transactions from the master file according to date.

Single-Erase Card

The format of this card is illustrated at the right.

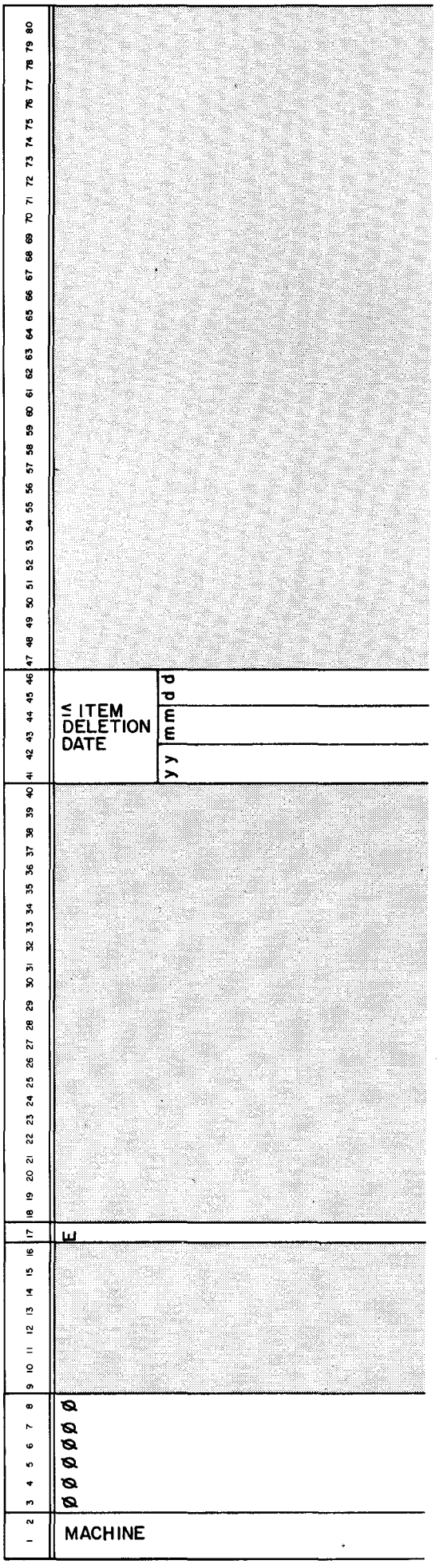


SINGLE-ERASE CARD SPECIFICATION

COLUMN(S)	CONTENTS	INTERPRETATION
1-2	xx	MACHINE. Enter any two Hollerith characters except 00 to identify the machine.
3-8	yymmdd	DATE OF ITEM TO BE ERASED, where yy, mm, and dd are collectively six decimal digits specifying the year, month, and day.
9-12	nnnn	START TIME OF ITEM TO BE ERASED. Enter four decimal digits specifying military time.
13-16	nnnn	STOP TIME OF ITEM TO BE ERASED. Enter four decimal digits specifying military time.
17	E	ERASE-CARD IDENTIFIER.
18-80		Not used.

Multiple-Erase Card

The format of this card is illustrated at the right.



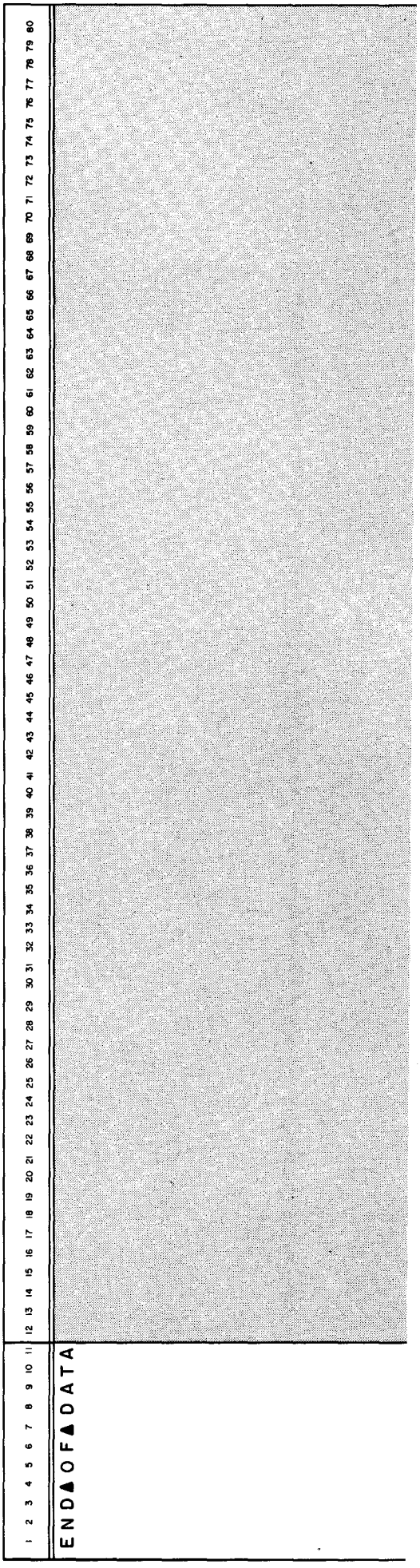
MULTIPLE-ERASE CARD SPECIFICATION

COLUMN(S)	CONTENTS	INTERPRETATION
1-2	xx	MACHINE. Enter any two alphanumeric characters except 00 to identify the machine.
3-8	000000	This date field must contain all zeros.
9-16		Not used.
17	E	ERASE-CARD IDENTIFIER.
18-40		Not used.
41-46	yymmdd	TERMINAL DELETION DATE, where yy, mm, and dd are collectively six decimal digits specifying the year, month, and day such that each item whose date is prior to or on the terminal date will be erased from the master file.
47-80		Not used.

END CARD

One END card must be placed at the positions indicated in Figure 4-1 and in the positions indicated in the flowcharts in Appendix A. The format of this card is illustrated at the right.

END-CARD TEMPLATE



End-Card Specification

COLUMN(S)	CONTENTS	INTERPRETATION
1-11	END△OF△DATA	Generally, only the first three columns are sensed; the remaining columns are documentation.
12-80		Not used.

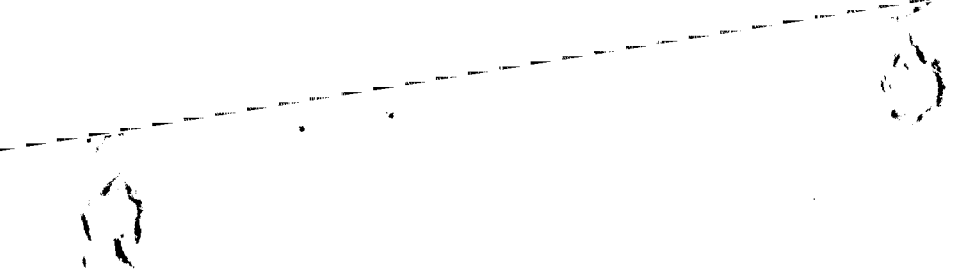
EASYCODER

CODING FORM

PROBLEM SAMPLE AUTOLOG CODING PROGRAMMER DATE 9/4/65 PAGE 1 OF 1

	CARD NUMBER	TYPE	MARK	LOCATION	OPERATION CODE	OPERANDS	
	1 2 3 4 5	6	7	8 14	15 20	21 62	63 80
1	ØØ CUSTOMERΔNAMEΔONΔ				HEADER		header card. (1)
2	Ø1 6411	2	1	Ø7ØØØØØØΔ	PON		first data card. (2)
3	Ø1 6411	2	1	Ø7ØØØ73ØΔ	MAINT		screening
4	Ø1 6411	2	1	Ø735Ø825Δ	A	41114 111111	delimits
5	Ø1 6411	2	1	Ø83Ø84ØΔ	HON	411 3 AUTOLOG	fields.
6	Ø1 6411	2	1	Ø84ØØ855Δ	IDLE		
7	Ø1 6411	2	1	Ø84Ø855	RPROGRAMMER OVERSLEPT		remarks card
8	Ø1 6411	2	1	Ø9ØØ12ØØ	AAUTOMA	161118	
9							remainder of
10							data cards. (2)
11	Ø1 6411	2	1	Ø9ØØ12ØØ	E		single-erase. (3)
12	Ø1 ØØØØØØ				E	641121	multiple-erase. (3)
13	ENDΔOFΔDATA						end card. (4)
14							blank card (5)
15							parameter decks:
16	AΔΔΔΔΔ			AUTOMA	TRAFIC	PAYROL INVENT PRODCT METLF EMER GEA CASHT AUPDATE	job-name (6)
17	FACTOR			COMPIL			cards. (6)
18	Ø1 6411	2	3	64112	5		phase-3 card(s) (7)
19	ENDΔOFΔDATA						end card.
20							
21	Ø1 6411			ØPTR	RAMDR	MDISPTPOSC CON	phase-4 card(s) (8)
22	ENDΔOFΔDATA						end card.
23							
24	AΔΔΔΔΔ			AUTOMA	TRAFIC	PAYROL INVENT PRODCT METLF EMER GEA UPDATE FACTOR	job-name card. (9)
25	Ø1 6411	2	1	64112	9		phase-5 card(s). (10)
26	ENDΔOFΔDATA						end card.
27							

Figure 4-2. Sample Transaction Deck and Parameter Decks



SECTION V

OPERATING INSTRUCTIONS

EQUIPMENT REQUIREMENT

Autolog requires the following equipment configuration:

1. A Series 200 central processor with 4,096 locations of main memory.
2. Three one-half inch tape drives.
3. One card reader
4. One high-speed printer.

EQUIPMENT SETUP

1. The standard trunk assignments are these: card reader on trunk 41; printer on trunk 02; tape control on trunks 00 and 40. If other assignments than these are desired, the operator must reassemble, using control-equals cards to change the assignments to their desired values.
2. Cycle up the card reader and printer.
3. Put the program deck in the reader.
4. Mount work tapes on logicals 2 and 3.

LOADING PROCEDURE

The manner in which an Autolog program is loaded depends on whether the program is stored in a card deck or a self loading tape (SLT). For loading procedures appropriate to these media, see the manual Easycoder 4K Operating Procedures, DSI-243, which is to be renamed Easycoder A Operating Procedures. In general, the following procedure applies:

1. Press the STOP button and the INITIALIZE button.
2. If a halt after loading is desired, set sense switch 1 ON. Set all other sense switches OFF.
3. Set the CONTENTS buttons to designate the octal address assignment of the appropriate peripheral control.
4. Press the BOOTSTRAP button.
5. Press the RUN button.

DATA INPUT TO PHASE 1

1. After equipment setup, check that the systems tape is on logical 0 in PROTECT status and that work tapes are on logicals 1 and 2 (work tapes are of course in PERMIT status) as in Figure A-1.

2. If the transaction cards (consisting only of data cards and erase cards and excluding the header, trailer, and blank cards) have not been sorted,[1] a card-to-tape prephase followed by a sort prephase is required as described below. If the transaction deck is sorted, it can be input directly to program AUTLOG as in Figure A-3, in which case the header, trailer, and blank cards are required.

Card-to-Tape Prephase Operating Procedures

1. Remove the Autolog header card from the transaction deck and place the remaining cards in the card reader as in Figure A-1.
2. Load program CARDTP.
3. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.
4. The output is a tape containing unsorted transactions on logical 1.
5. When the machine halts at the end of the run, go to Sort Prephase Operating Procedures below.

Sort Prephase Operating Procedures

Specifications for setup of the deck for Tape Sort A (i.e., Sort 1) are contained in the Information Bulletin Sort 1 and Collate 1, DSI-247. General operating procedures are in the flow chart in Figure A-2. This flow chart contains the following instructions:

1. Put the parameter deck (and, if the program is on cards, the program deck) in the card reader.
2. Check that the blocked transactions are on logical 1 in PERMIT status.
3. Load the sort program.
4. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.
5. The output is a sorted transaction tape on logical 1.
6. When the machine halts at the end of the run, put logical 1 in PROTECT status, and go to Phase 1 Operating Procedures below.

PHASE 1 OPERATING PROCEDURES

Phase 1 operating procedures are in the flow chart in Figure A-3. That flow chart contains the following instructions:

1. Check that a work tape is on logical 2.
2. The input to program AUTLOG is a deck of presorted cards or else sorted card images on logical 1. If the input is a sorted tape, check that the sorted transaction tape is mounted in PROTECT status on logical 1, and set sense

[1] The sorting keys, from major to most minor, are these: machine, date, start time, and stop time.

switch 2 OFF; else put the presorted cards in the card reader with the header and trailer cards, check that a work tape is mounted on logical 1, and set sense switch 2 ON.

3. For the setting of sense switches 3 and 4, and for the setup of the card deck if any, see Figure A-3.

4. Load program AUTLOG.

5. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.

6. The output is (1) an edited transaction tape on logical 2 and (2) a Machine Logging and Layout Form Proof which contains the input data together with diagnostic codes. These codes are summarized in Appendix B.

7. After the system halts at completion of the run, if there are no errors indicated on the Proof, go to Phase 2 Operating Procedures; else correct the data deck and go to Phase 1 Operating Procedures.

PHASE 2 OPERATING PROCEDURES

Phase 2 operating procedures are in the flow chart in Figure A-4. That flow chart contains the following instructions:

1. Check that a work tape to be the new master is mounted on logical 3 in PERMIT.

2. If the run is a file updating run (i.e., if an old master file is being updated), set sense switch 2 OFF, mount the latest master tape on logical 1 in PROTECT status, and check that the edited transaction tape is on logical 2 in PROTECT status.

3. If the run is a file establishing run (i.e., if a new master tape is being created from a transaction tape), set sense switch 2 ON. The Phase 1 output (the edited transaction tape) is on logical 2 at the end of Phase 1; address this tape as logical 1 by rotating to "1" the address wheel that currently shows "2."

4. Load program UPDATE.

5. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.

6. The output is a new master tape on logical 3.

7. If desired, after the system halts at completion of the run, demount the transaction tape, label it, and save it. If the run is a file updating run, demount the old master tape from logical 1, and mount a work tape in its place.

8. Label the tape on logical 3 as "new master" or "latest master." Put it in PROTECT status.

9. Address the new master tape as logical 1 for input to Phases 3, 4, and 5.

10. If Phase 3 output reports are desired, go to Phase 3 Operating Procedures below; if Phase 4 output reports are desired, go to Phase 4 Operating Procedures below; if Phase 5 output reports are desired, go to Phase 5 Operating Procedures below; if no output reports are desired, go to End-of-Job Procedures.

PHASES 3, 4, AND 5 OPERATING PROCEDURES

One, two, or all of Phases 3, 4, and 5 can be executed in any order after Phases 1 and 2, depending on which output reports are to be generated. The following operations should be performed for each of these phases.

1. Check that the updated master file is on logical 1 in PROTECT status and that a work tape is on logical 2.
2. Set sense switch 2 ON if the program is to accept parameters from the control panel instead of from parameter cards in the card reader; else set sense switch 2 OFF and put the parameter deck for the current phase in the card reader. This deck includes an END card as the last card.

If control panel entry of parameters is used, each of the phases halts to allow the entry of the parameters for that phase, and processing continues as long as the operator continues to enter parameters when the computer halts. Phase 3 parameters are entered into locations PARAM + 13 in program USAGE. Phase 4 parameters are entered into locations PARAM through PARAM + 13 in program PHZWEI. Phase 5 parameters are entered into locations PARAM through PARAM + 13 in program PHFIER. The operator can determine the octal address of each such location from the assembly listing of the appropriate program.

If card input of parameters is used, processing continues in the phase until an END card is sensed, whereupon a halt occurs to allow the operator to set switches, etc., and proceed to the next phase.

Phase 3 Operating Procedures

1. Perform steps 1 and 2 as described above and as indicated in Figure A-5.
2. The run will generate both the Customer Machine Performance Report and the Machine Usage Summary. For both of these reports, if a report line for each day in the reporting period is desired, set sense switch 3 ON; if a report line for only the entire reporting period is desired, set sense switch 3 OFF.
3. Load program USAGE.
4. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.
5. For each Phase 3 parameter card submitted, the output is a Customer Machine Performance Report and a Machine Usage Summary.
6. After the system halts at completion of the run, if Phase 4 output reports are desired, go to Phase 4 Operating Procedures below; if Phase 5 output reports are desired, go to Phase 5 Operating Procedures below; if no other output reports are desired, go to End-of-Job Procedures.

Phase 4 Operating Procedures

1. Perform steps 1 and 2 as described above and as indicated in Figure A-6.
2. Load program PHZWEI.
3. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button to continue.
4. The output is a printed Honeywell Equipment Usage Report for each Phase 4 parameter card submitted. If the card contains 0 in column 7, an Extra Devices report is also printed.
5. After the system halts at completion of the run, if Phase 5 output reports are desired, go to Phase 5 Operating Procedures below; if no other output reports are desired, go to End-of-Job Procedures.

Phase 5 Operating Procedures

1. Perform steps 1 and 2 as described above and as indicated in Figure A-7.
2. Set sense switch 3 OFF if the non-standard names to be used are already in the valid-job-name table in program PHFIER; else set sense switch 3 ON, and put one Phase 5 job-name card in the reader as indicated in Figure A-7.
3. Set sense switch 4 OFF if a periodic report is desired; else set sense switch 4 ON, indicating that a daily report is desired.
4. Load program PHFIER.
5. If sense switch 1 is ON, a halt occurs after loading is finished. The operator performs the desired operations and presses the RUN button. to continue.
6. The output is a printed Honeywell Customer Job Summary for each Phase 5 parameter card submitted.
7. After the system halts at completion of the run, go to End-of-Job Procedures.

APPENDIX A
OPERATOR'S SUMMARY

The following flowcharts contain complete operating procedures in abbreviated form. The halts appearing in the flowcharts correspond to the normal conditions which are expected to occur during running of the Autolog programs. Error halts and corresponding prescribed actions are listed in Appendix B. Operating instructions and halt codes for the Sort Prephase are found in the Software Bulletin Sort 1 and Collate 1, DSI-247, to be entitled Tape Sort A.

In all phases, the operator has the option to set sense switch 1 ON to halt the system after loading is complete.

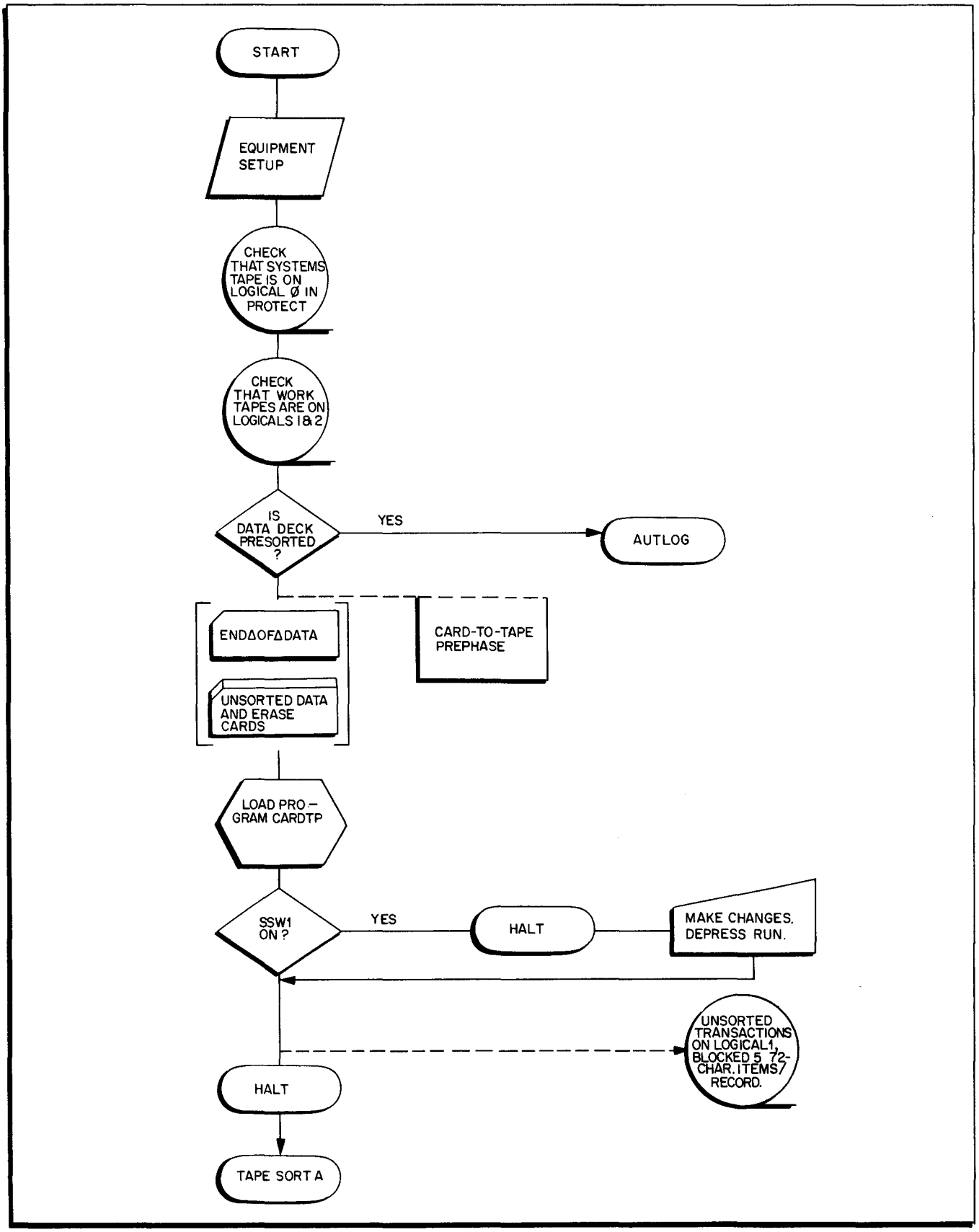


Figure A-1. Card-to-Tape Prephase Operating Summary

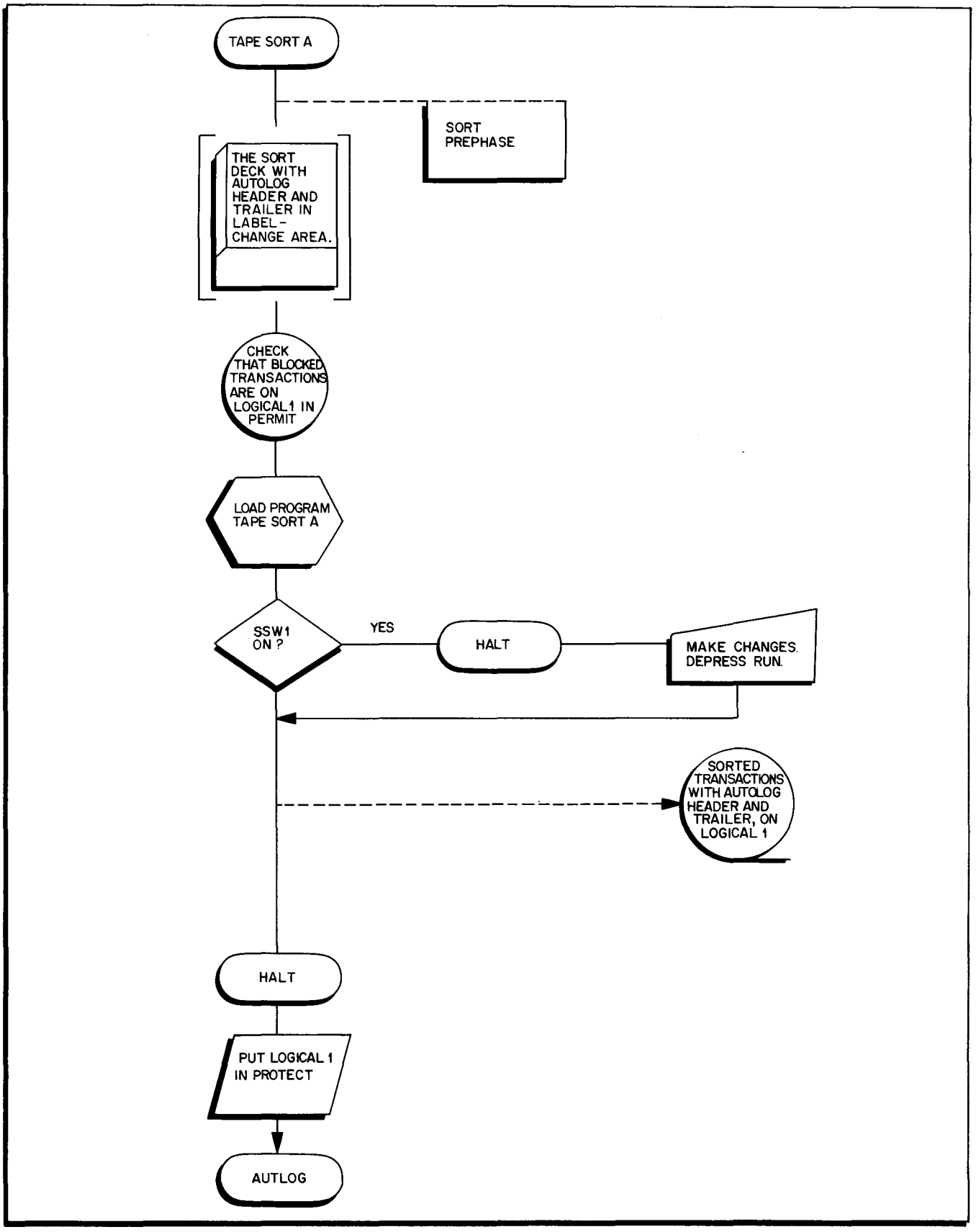


Figure A-2. Sort Prephase Operating Summary

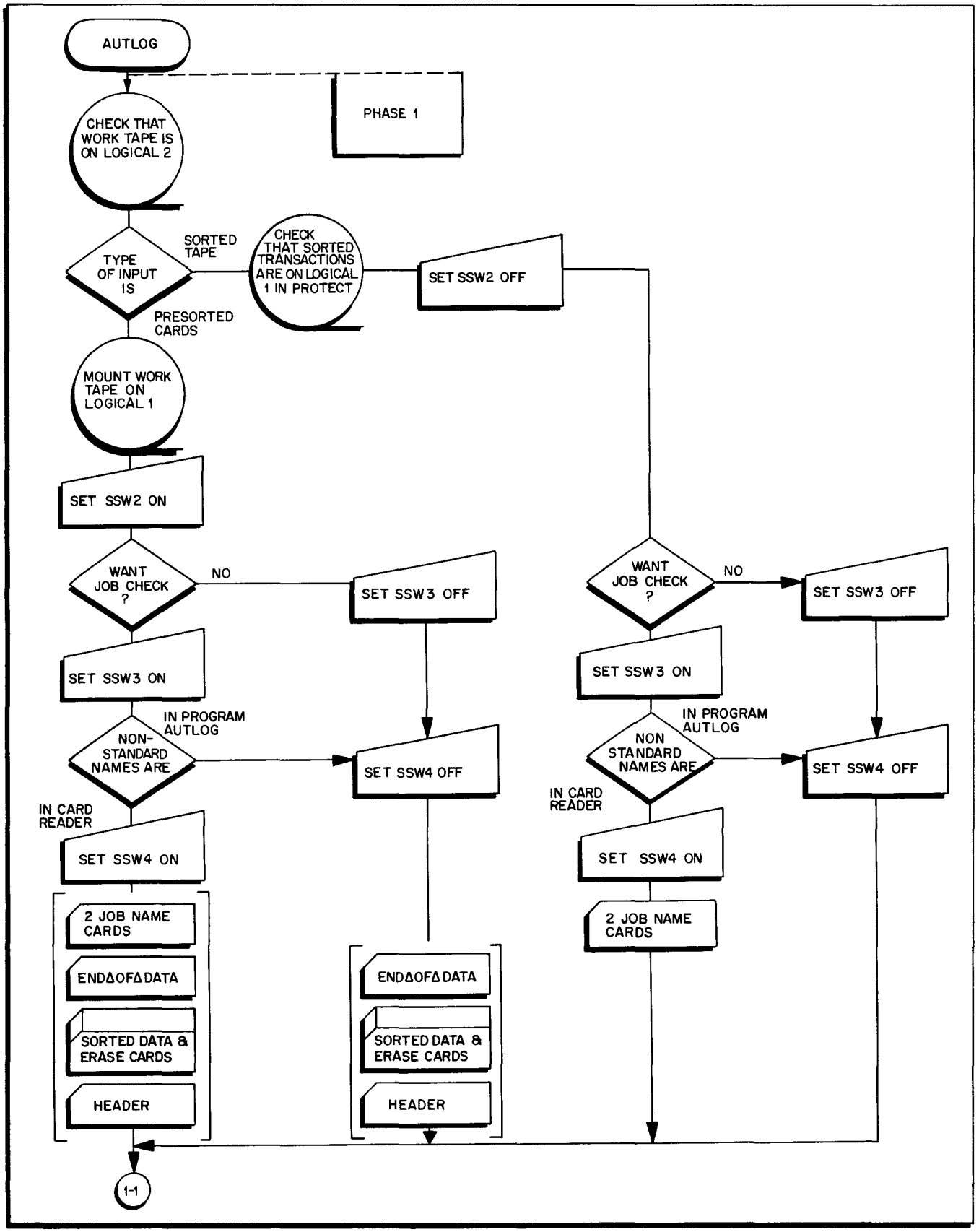


Figure A-3. Phase 1 Operating Summary

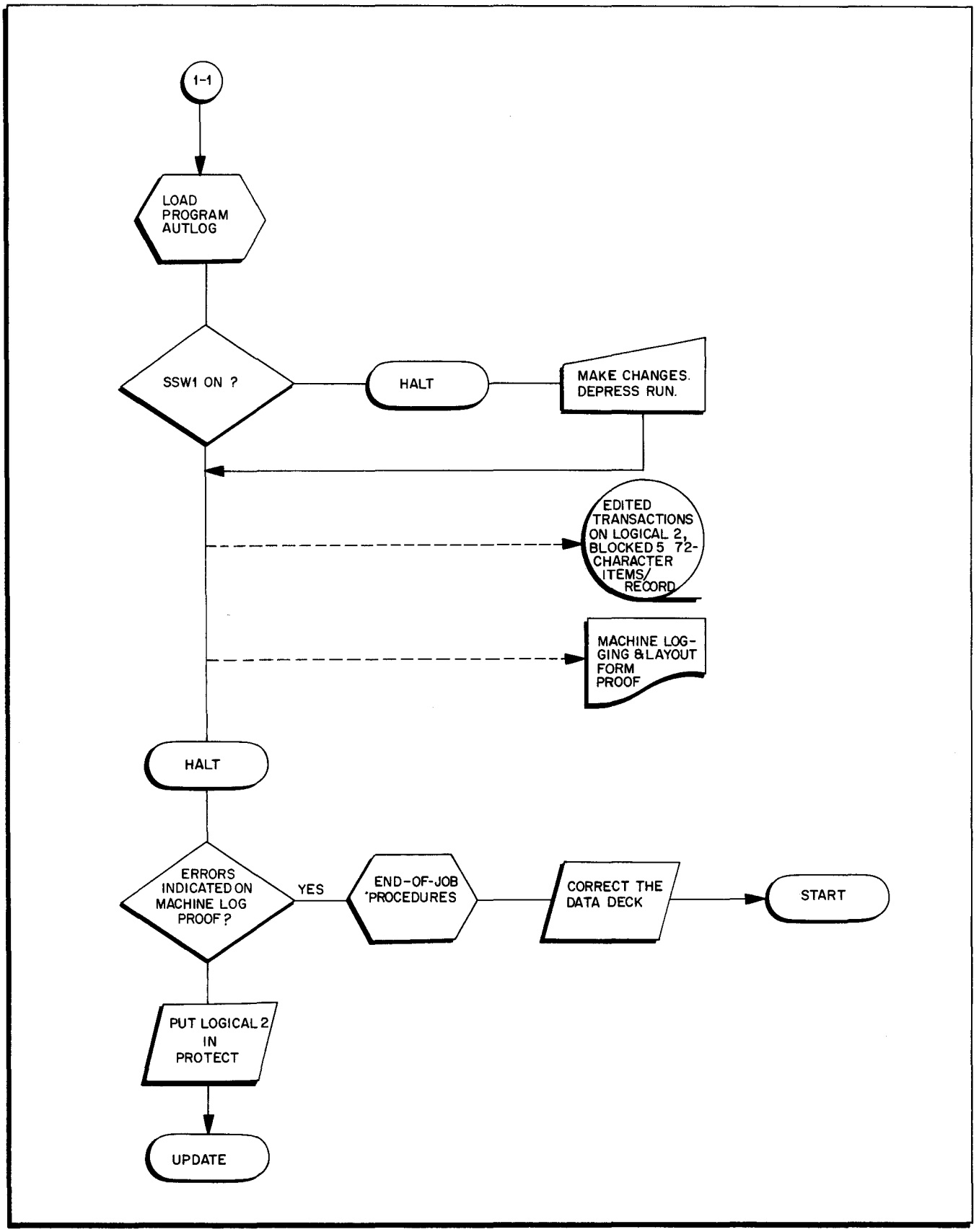


Figure A-3 (cont). Phase 1 Operating Summary

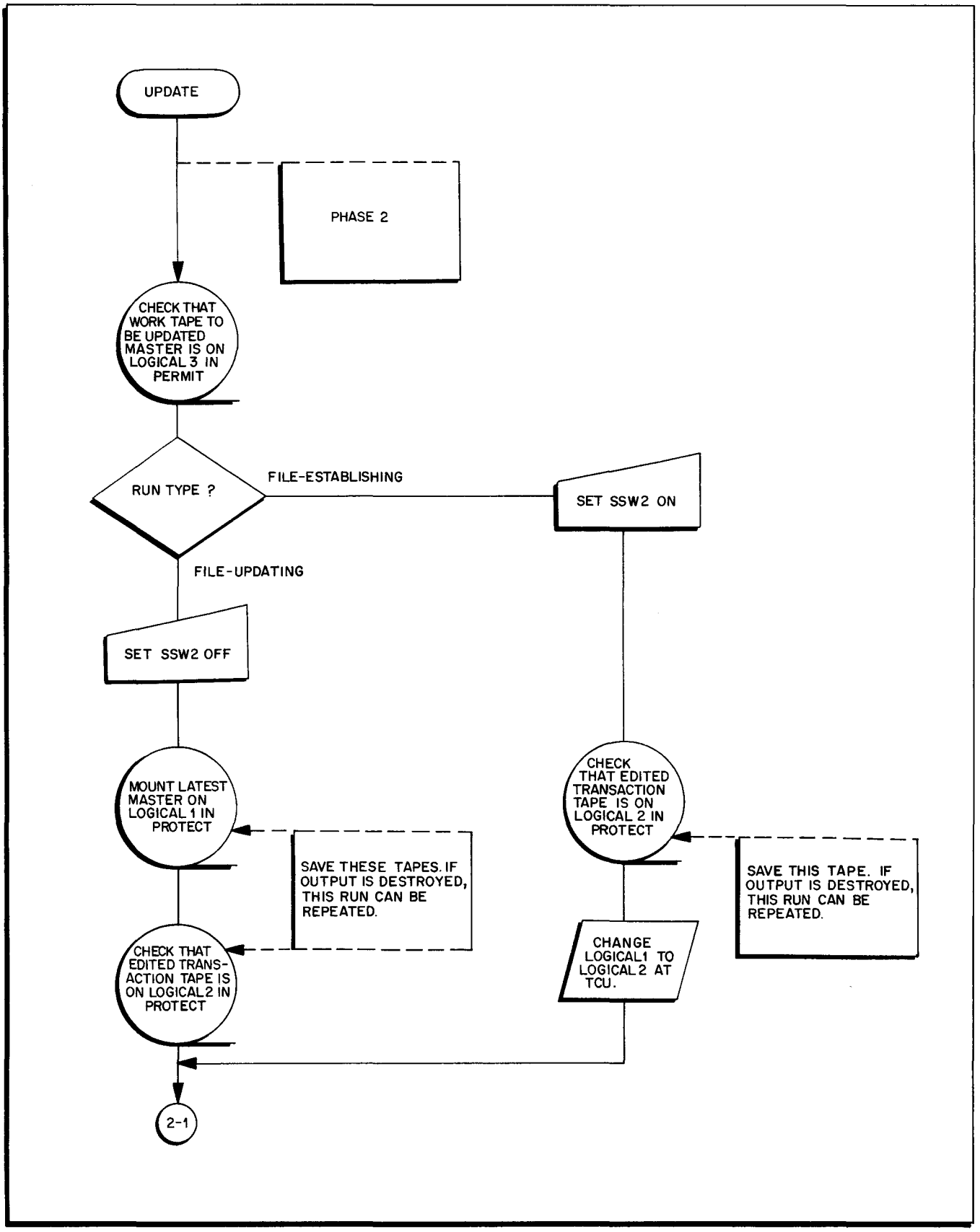


Figure A-4. Phase 2 Operating Summary

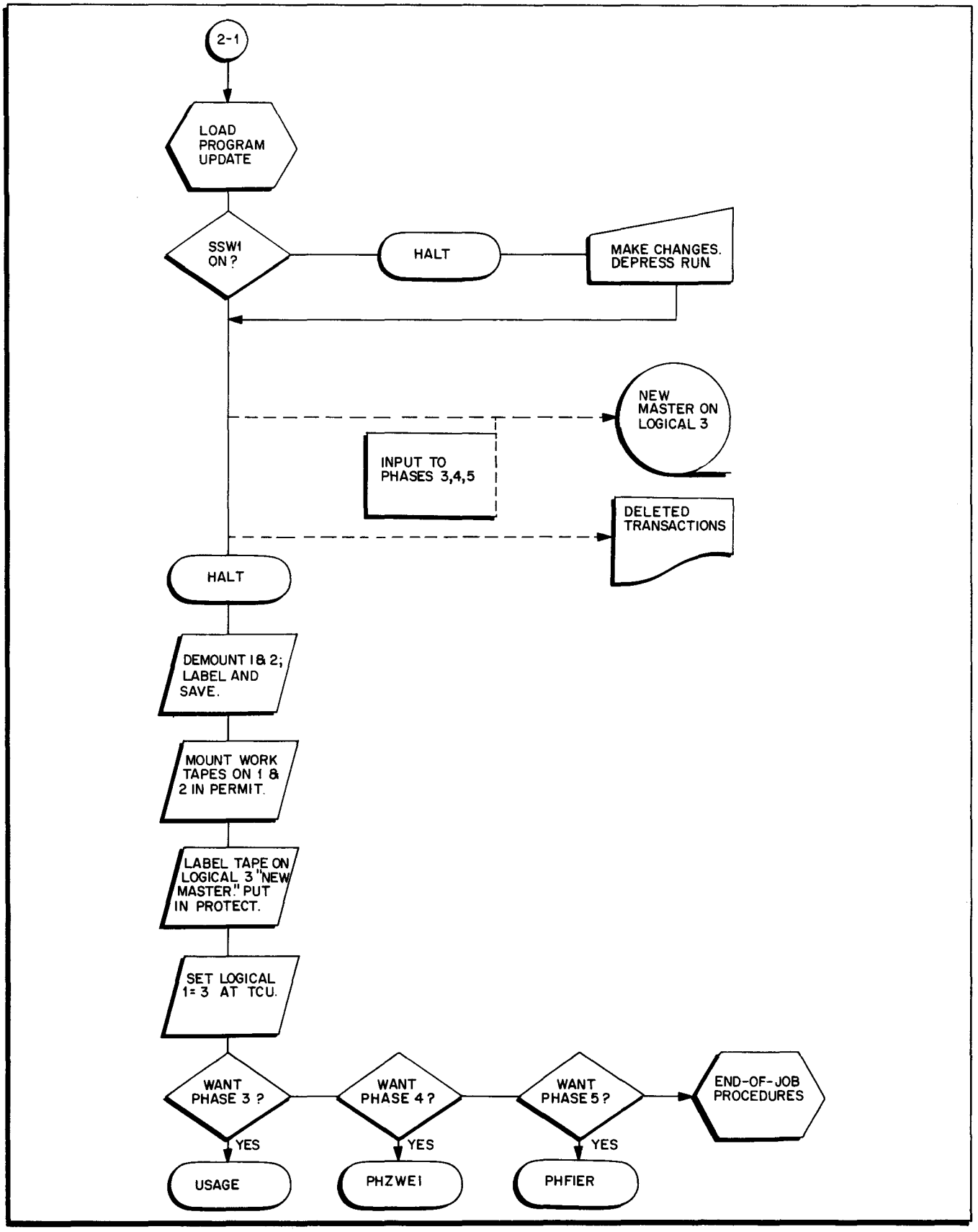


Figure A-4 (cont). Phase 2 Operating Summary

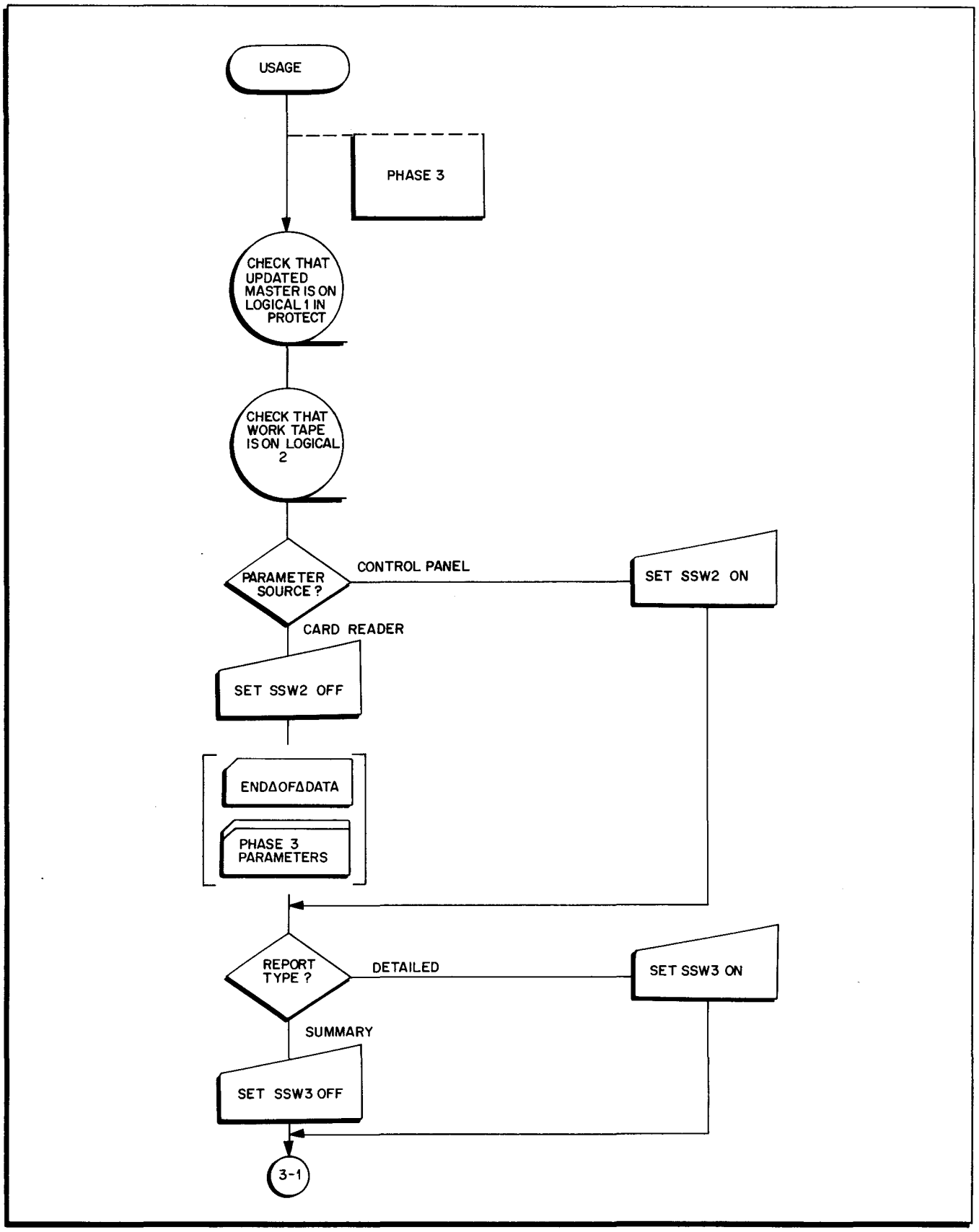


Figure A-5. Phase 3 Operating Summary

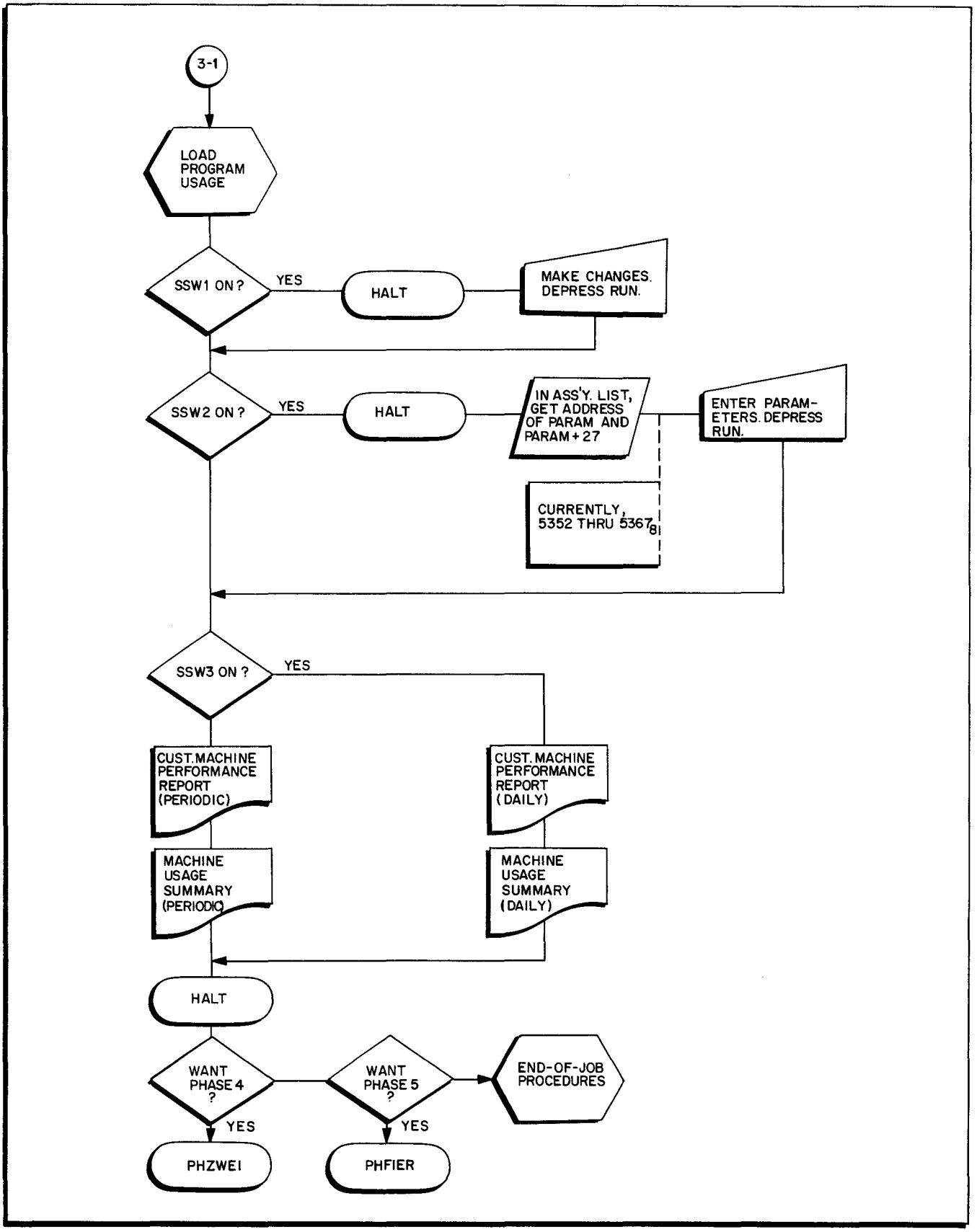


Figure A-5 (cont). Phase 3 Operating Summary

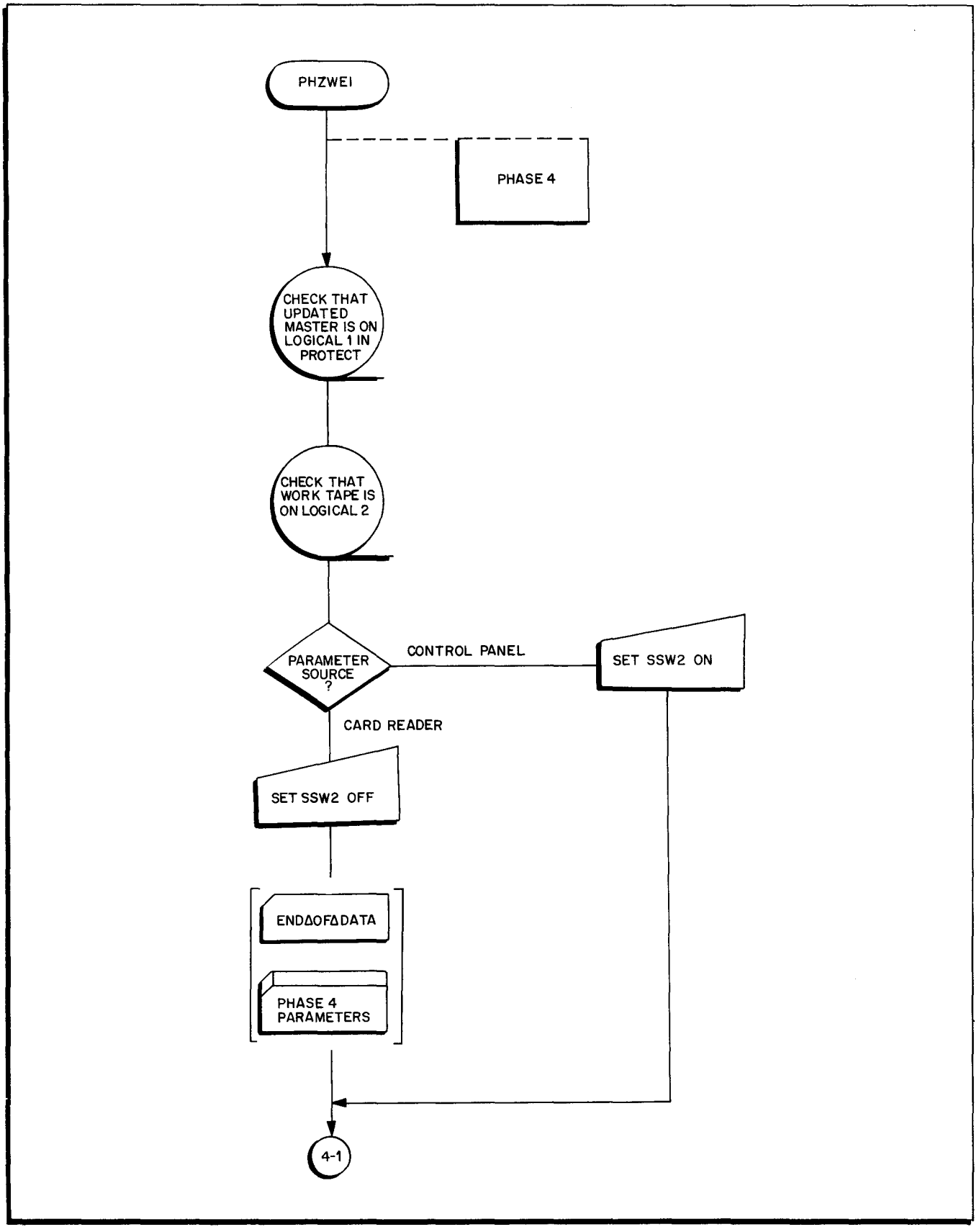


Figure A-6. Phase 4 Operating Summary

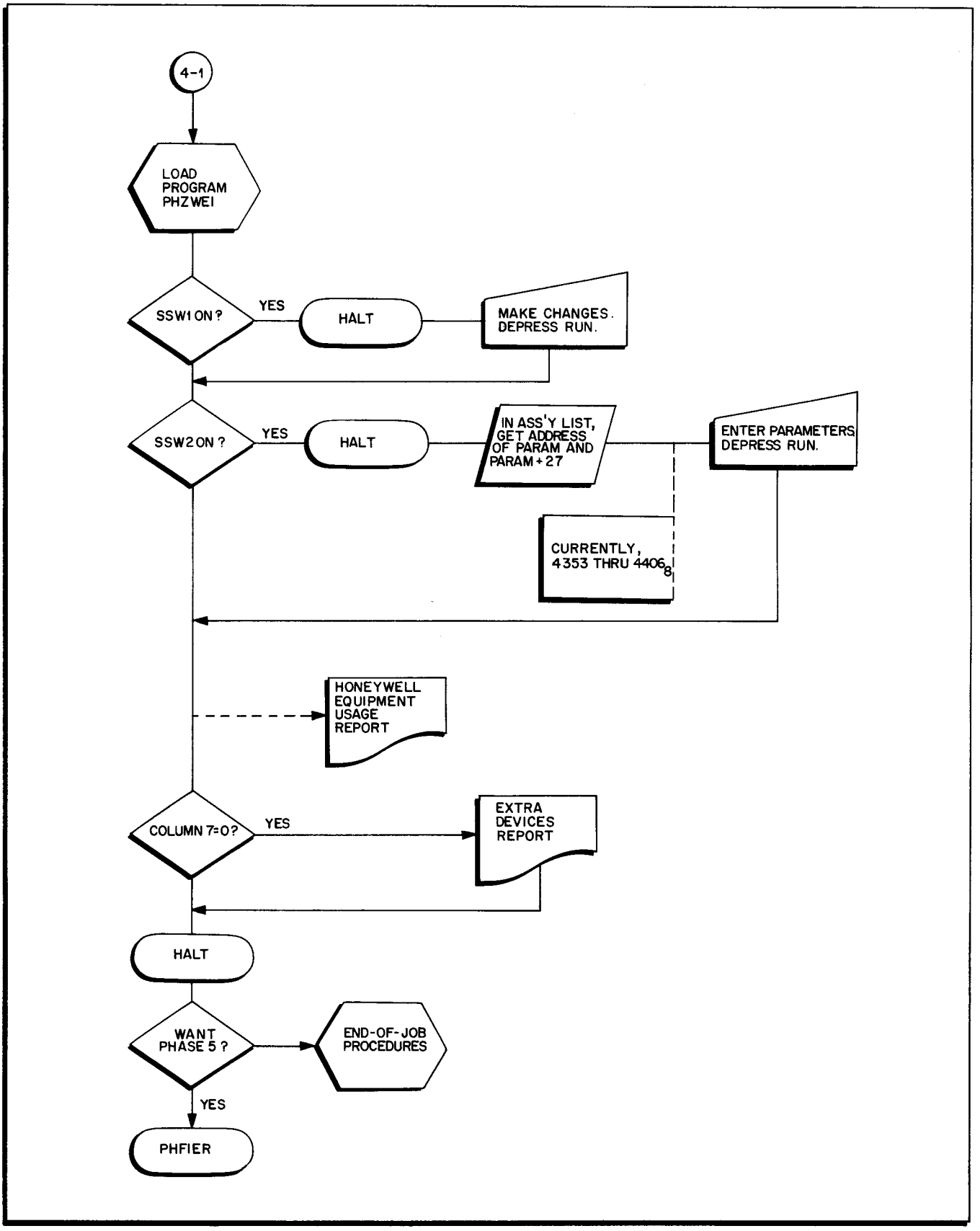


Figure A-6 (cont). Phase 4 Operating Summary

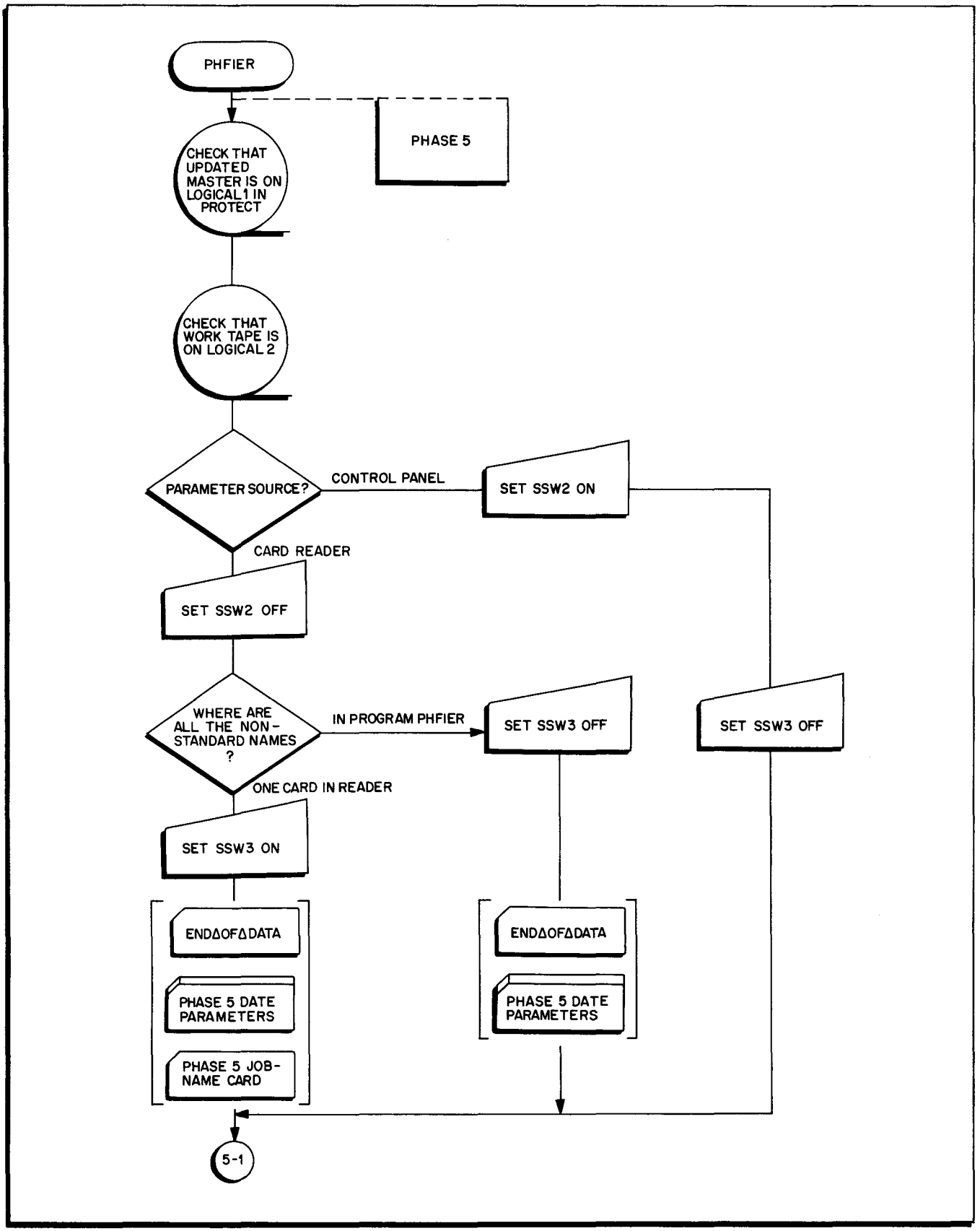


Figure A-7. Phase 5 Operating Summary

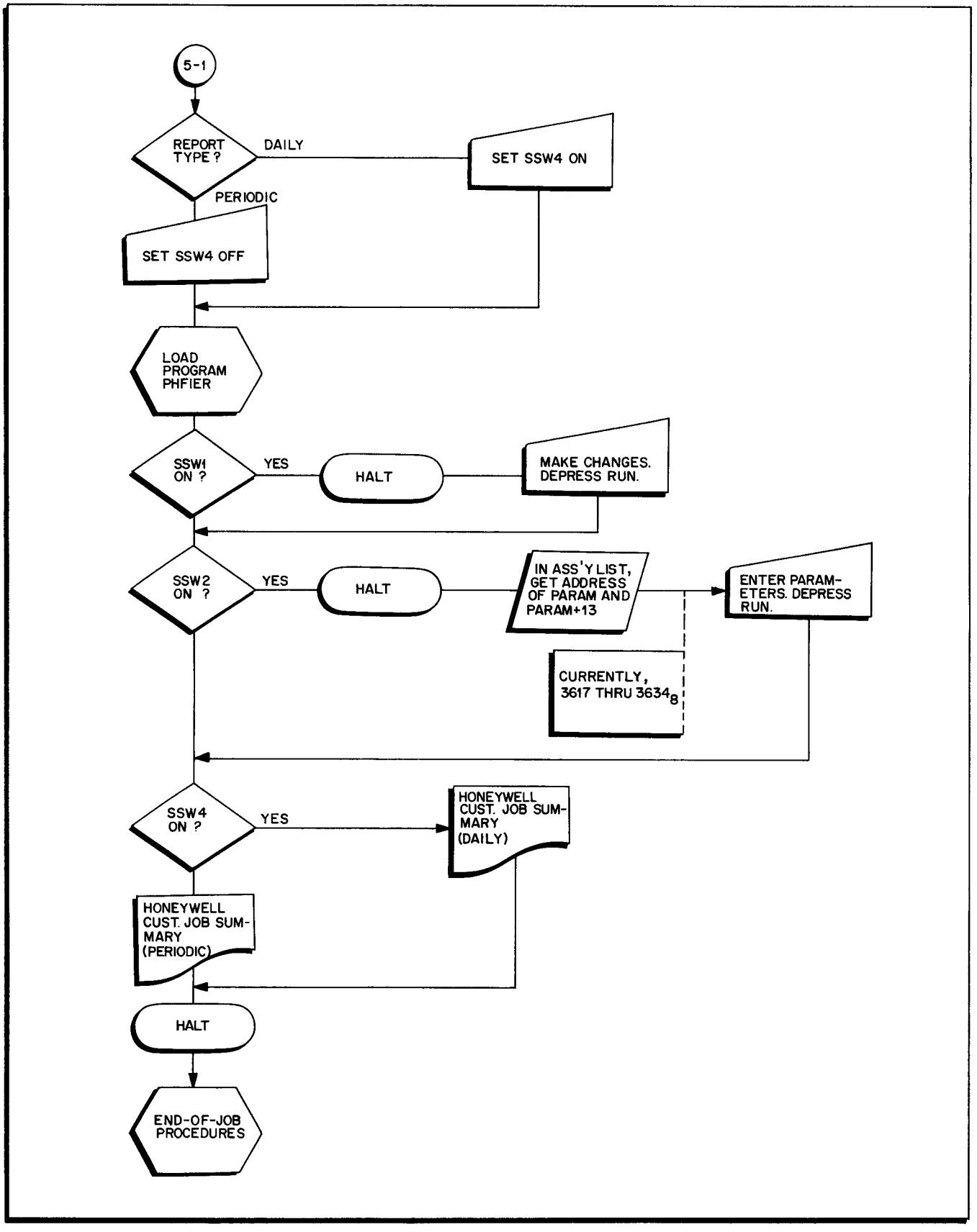


Figure A-7 (cont). Phase 5 Operating Summary

APPENDIX B

PHASE 1 ERROR CODES

PRINTOUT	INTERPRETATION	PRESCRIBED ACTION
F1/	Stop time of item other than PON (Power On) or POFF (Power Off) is blank.	Correct entry and resubmit card.
F1/	Start time is less than the previous stop time, excluding items with job name PON or POFF.	Correct entry and resubmit card.
F1/	Stop time is zero for other than job name PON or POFF.	Correct entry and resubmit card.
F2/	Start time is greater than 2359.	Enter a legal time and resubmit card.
F3/	Stop time is greater than 2400.	Enter a legal time and resubmit card.
F4/	Start time is greater than stop time.	Correct error and resubmit card.
M	Minutes of either start or else stop time exceed 59.	Correct error and resubmit card.
NF/	Job code field is blank or else an invalid job has been detected in requested job-validity check. The transaction is written on the output tape. If this job name is not in the job-name table in Phase 5, the transactions having this job name are summarized under ILLJOB.	As desired. A valid job name may have been mispunched. In this case, correct error and resubmit card.

APPENDIX C

HALT CODES FOR ALL PHASES

CARDTP HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
-	3	3	Card read error.	Refeed last card read. Depress RUN button.
-	1	1	Uncorrectable write error.	Change tapes. Rerun.
7777	7777	-	End of run.	Go to Sort Prephase operating procedures.

PHASE 1 HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
0001	0001	-	End of tape 1. Tape is short, and/or too much input for one tape.	Rewind and release tape, mount 2400 foot tape and rerun. Or reduce the input.
0002	0002	-	End of tape 2. Tape is short, and/or too much input for one tape.	Same as above.
6030	-	-	Card read error.	Refeed last card read. Depress RUN button.
6231	-	-	Uncorrectable read error on tape 1.	Reread tape. If unsuccessful, halt, clean tape, and rerun.
7777	7777	-	End of run.	Put logical 2 in PROTECT. Go to Phase 2 operating procedures.

PHASE 2 HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
-	0001	0001	Uncorrectable read error on logical 1.	Reread tape. If unsuccessful, halt, clean tape, and rerun.
-	0002	0002	Uncorrectable read error on logical 2.	Same as above.
-	0003	0003	End of tape 3. Updated master file does not fit on output tape.	Start a new master file or delete transactions using the multiple-erase card. Or if tape is short, mount a 2400 foot tape and rerun.

PHASE 2 HALT CODES (cont)

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
-	0007	0007	Items are out of sequence.	Resort the tape.
0335	0335	-	Labels on input master and on transaction file are not identical.	Depress RUN button to copy transaction file onto output.
7777	7777	-	End of run. The updated master is on logical 3.	To set up for Phase 3, see Phase 2 operating summary.

PHASE 3 HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
0742	-	-	Illegal rerun code.	Depress RUN button to continue in sequence with the current item assumed to correspond to productive time.
2131	2131	-	Requested date is not on master file. Date on parameter card may be mispunched, or wrong master may be mounted.	Check parameter card and master tape, and correct. Or depress RUN button to continue.
5507	-	-	Uncorrectable read error on master file.	Reread tape, if unsuccessful, halt, clean tape, and rerun.
5510	-	-	Uncorrectable read error on logical 2.	Same as above.
7767	-	-	End of tape 2.	Rewind and release tape. Mount another 2400 foot tape and rerun.
7777	7777	-	End of run.	Go to Phase 4 operating procedures.

PHASE 4 HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
1342	1342	-	Requested date is not on master file. Date on parameter card may be mispunched, or wrong master may be mounted.	Check parameter card and master tape, and correct. Or depress RUN button to continue.
3336	-	-	Illegal request date on parameter card.	See the card image at the printer. Correct and rerun.

PHASE 4 HALT CODES (cont)

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
5233	-	-	Uncorrectable read error on master file.	Reread tape. If unsuccessful, halt, clean tape, and rerun.
7777	7777	-	End of run.	Go to Phase 5 operating procedures.

PHASE 5 HALT CODES

SEQ. CTR.	A ADDRESS	B ADDRESS	INTERPRETATION	PRESCRIBED ACTION
1	1	-	Uncorrectable tape read error.	Depress RUN button to get totals.
0002	0002	-	Date error.	Check date on parameter card.
1172	1172	-	Illegal code in column 17.	Depress RUN button to continue with the current item assumed to correspond to productive time.
1753	1753	-	Requested date is not on master file. Date on parameter card may be mispunched. Or wrong master may be mounted.	Check parameter card and master tape, and correct. Or depress RUN button to continue.
3553	3553	-	Parameter card error.	Refeed the card last read. Depress RUN button.
7777	7777	-	End of run.	Remove output.

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