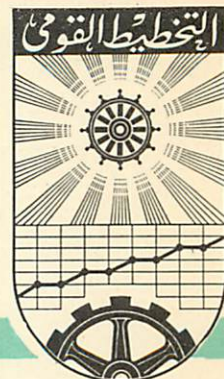


UNITED ARAB REPUBLIC

THE INSTITUTE OF NATIONAL PLANNING



MEMORY NO 555

RURAL EMPLOYMENT PROJECT
CONTROL CODING OPERATIONS
PROGRAM

BY

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INTRODUCTION

This memory indicates the important procedure to detect the errors in coding, recording and punching in the data for the research of RURAL employment.

The memory includes a program used by the I.B.M. 1620 electronic computer, and its Block diagrams.

The program consists of five tests. Every test checks a kind of errors which are punched in the cards.

The first test checks the code of employment status and the total of the operating hours.

The test number two checks the code for reasons of unemployment owing to the code of employment status and the total of operating hours.

The third test checks the total hours of each individual with the sum of the hours concerning the five operations.

The test number four checks some sort of codes for operations, means, crops, hours and places for each operation from the five operations of the code sheet.

The last test checks the temporary individuals that have no operating hours.

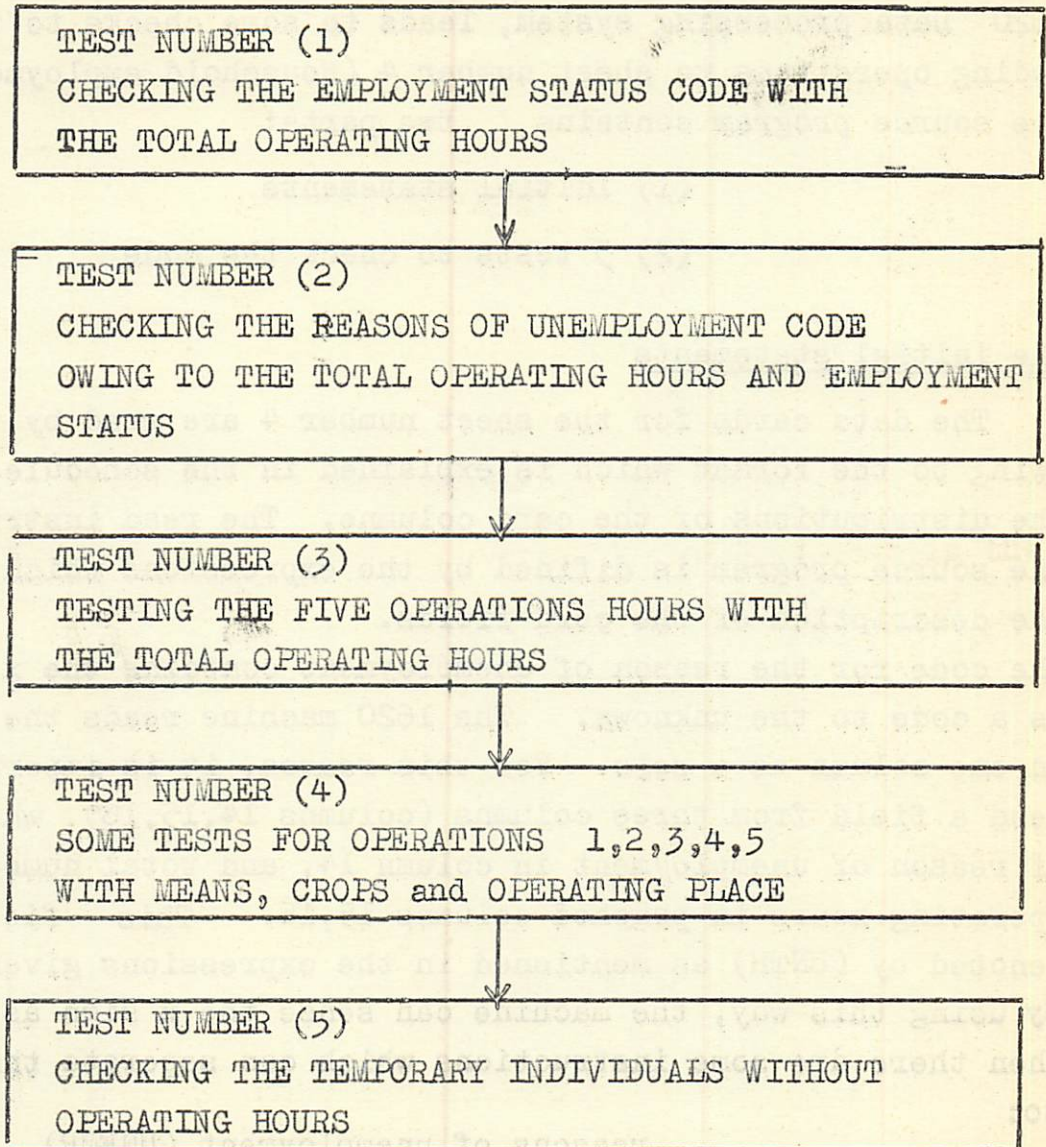
EXPRESSIONS USED IN THE PROGRAM

G	:	GOVERNORATE						
V	:	Village						
HS	:	Household						
H	:	Hundred position of serial number of the individual						
T	:	Ten	"	"	"	"	"	"
U	:	Unit	"	"	"	"	"	"
DM	:	MOUNTH						
DD	:	DAY						
EMP	:	EMPLOYMENT STATUS						
UNTH	:	EXPRESSION CONSISTS reason of unemployment in the high position and total hours in the low positions						
UNEMP	:	Reason of unemployment						
TH1	:	Total hours						
OP(1,2,3,4,5)	:	Operations						
OPM(1,2,3,4,5)	:	mean						
CROP(1,2,3,4,5)	:	crop						
H (1,2,3,4,5)	:	hours						
SIDE(1,2,3,4,5)	:	place						

Card no 4
Distribution of the columns

Card Columns	NUMBER OF Columns	DISCRIPTION
1	1	CARD number
2	1	Sample
3	1	Governorate
4	1	Village
5	1	Serial number of the household
6 - 8	3	" " of the individuals
9 - 10	2	MONTH
11 - 12	2	DAY
13	1	Employment status
14	1	Reasons of unemployment
15 - 16	2	Total hours
17 - 18	2	Operation mean Crop hours place } Operation number 1
19	1	
20	1	
21 - 22	2	
23	1	
24 - 30	7	Operation number 2
31 - 37	7	" " 3
38 - 44	7	" " 4
45 - 51	7	" " 5

Summary of the block diagram



Description of the program

This program which consists of instructions used by the I.B.M. 1620 Data processing system, leads to some checks to the coding operations to sheet number 4 (Household employment record). The source program contains two parts:

- (1) Initial statements
- (2) 5 tests to check the code

The initial statements

The data cards for the sheet number 4 are read by the computer, owing to the format which is explained in the schedule containing the distributions of the card columns. The read instructions in the source program is defined by the expressions which represent the description of the card fields.

The code for the reason of unemployment contains the x sign as a code to the unknown. The 1620 machine reads the x sign in one column as a zero. For this reason, it is important to read a field from three columns (columns 14,15,16), which consists of reason of unemployment in column 14, and total number of operating hours in punched columns 15,16. This field is denoted by (UNTH) as mentioned in the expressions given before. By using this way, the machine can sense the x sign as a minus. Then there are some instructions which can separate this field to:

reasons of unemployment (UNEMP)

& total number of operating hours (TH1).

Test number 1

It consists of some statements to fully check the employment status code (EMP) in column 13 owing to the total of the operating hours (TH1) in column 15-16

The code of the employment status is as the following:

Code	Discriptions
0	Without work
1	working less than three hours
2	" from three hours to less than six hours
3	" " six " " " " ten "
4	" ten hours or more

Comparing the employment status code with to the intervals of the total operating hours, if there is difference, the typewriter of the computer types the group indication of the card, the employment status, the reasons of unemployment and the total hours as the following:

G	V	H	NO	DATE	EMP	UNEMP	TH
1	6	3	002	19 06 1964	EMPLOYMENT STATUS ERROR	3	8 04

The right employment status code must be 2 instead of 3, because the total hours from three hours to less than six hours must has employment status code 2.

TEST NUMBER 2

It consists of some statements to check the reasons of unemployment code (UNEMP) in column 14 owing to the total of the operating hours (TH1) in columns 15-16.

The code zero is given for complete employment (6 hours and more). Otherwise the code will indicate the reasons for unemployment or incomplete employment. By the statements in this test the total operating hours is divided to :

6 hours or more
& less than six hours.

Comparing this with the reasons of unemployment code, if there is difference between the code and the hours the typewriter types the group indication of the card, the employment status, the reasons of unemployment and total of the operating hours as the following :

G	V	H	N	O	DATE		EMP	UNEMP	TH1
4	6	7	002	24	06 1964	Reason of unemployment	2	0	4
						error			

In the above case as the total hours are four, then the code for the reason unemployment must not be zero. If the code for the reason of unemployment is x the machine types 9 instead of the sign x. In the following case there is another example for an error in the code reason of unemployment and that for the employment status :

G	V	H	NO	DATE		EMP	UNEMP	TH1
4	4	6	004	29 06 1964	REASON of unemployment	2	8	7
					error			
4	4	6	004	29 06 1964	EMPLOYMENT Status error	2	8	7

TEST NUMBER 3.

It consists of some statements to check the total hours (TH1) with the sum of operating hours for the five operations which are punched on the card (H1, H2, H3, H4, H5) in columns 21-22, 28, 29, 35-36, 42-43, 49-50. If there is difference between the total of operating hours and the sum of hours for the five operations, the typewriter types the following:

G	V	H	NO	DATE	TH1	SUM	H1	H2	H3	H4	H5
6	5	5	002	05 06 1964	Hours error	7 (TH2)	1	2	1	1	1

In the above case the sum of hours for the five operations is 6 hours while the total hours in the code sheet is 7 hours. If for any reason the total hours is more than 24 (punched or coder mistake) the machine types the group indication and this notation. "Total hours exceed than 24 hours."

Test number 4:

It includes some sorts of tests for operation, mean crop and place code. The check is done for the five operations which are punched in the card. If there are punches representing mean, crop and place, or any of them and there is no operation code, the machine types one or more of the following:-

G	V	H	NO	<u>Date</u>				
4	4	4	001	09	06	1964	MEAN without operation(1,2,3,4,5)code	
4	2	1	005	22	06	1964	Crop " " " "	
4	4	3	211	08	06	1964	place " " " "	

On the contrary in other cases perhaps there is an operation code and there is no code for mean or place, the machine then types one or more of the following:-

G	V	H	NO	<u>DATE</u>				
4	3	2	002	25	06	1964	Operations(1,2,3,4,5)without mean code	
4	3	9	007	27	06	1964	" (1,2,3,4,5) " place code	

The code of the mean is as the following:-

- 1- Manual
- 2- using animals
- 3- " machines
- 4- without means

If the code of the mean is more than four, the machine types the group indications and mentions that there is a mean code error as the following:-

G	V	H	NO	<u>DATE</u>				
4	5	4	003	18	06	1964	Operations(1,2,3,4,5)mean code error	

The code of the operating place is as the following:-

- 1- inside the tenure
- 2- outside the tenure & paid
- 3- " " " & sharing
- 4- " " " & friendship
- 5- " " " & in public affairs
- 6- " " " & unpaid

If the code of the operating place exceeds 6, the machine types the following:-

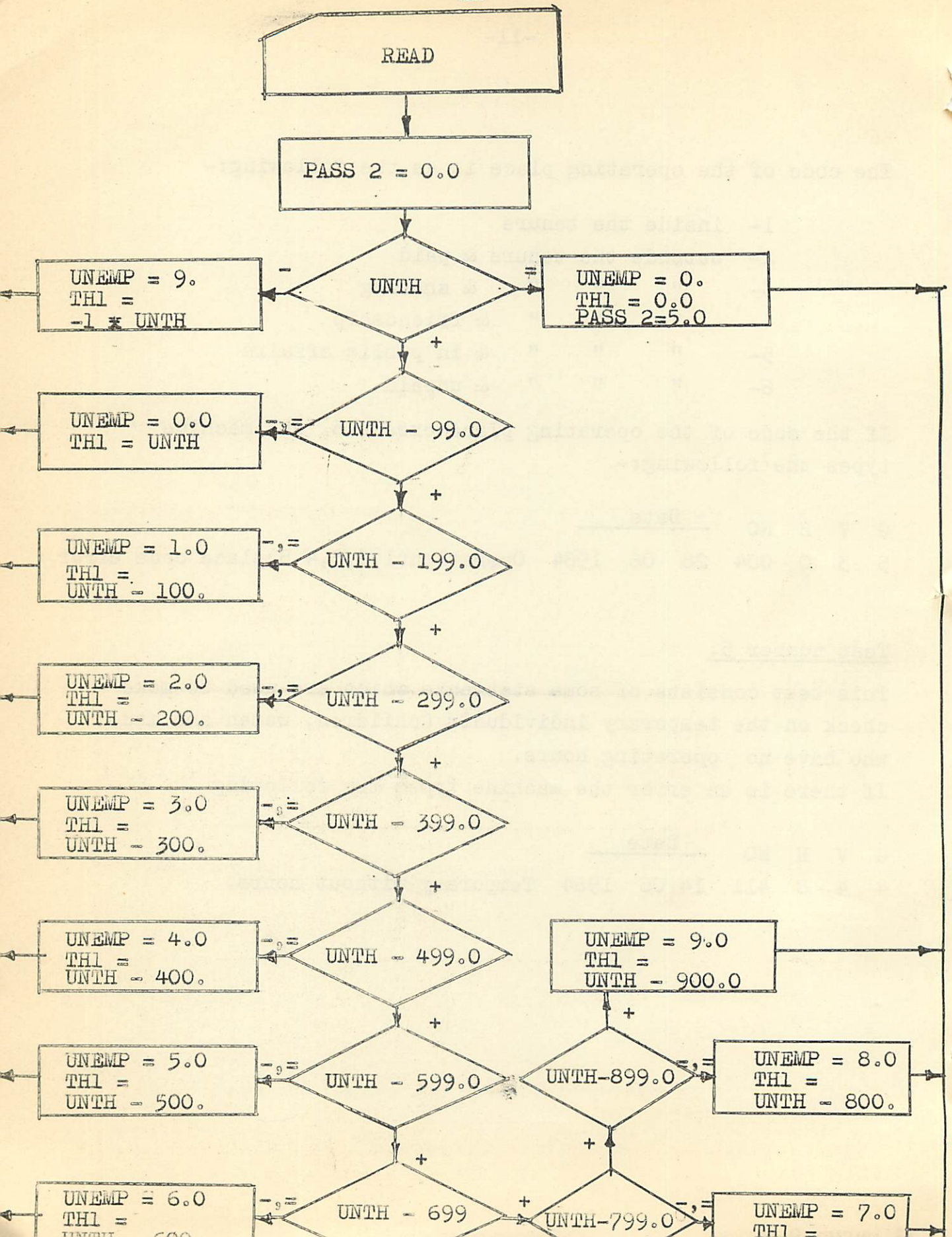
G	V	H	NO	<u>Date</u>		
5	3	0	004	28	06	1964 Operation(1,2,3,4,5)place code error

Test number 5.

This test consists of some statments which are used to make check on the temporary individuals (children, women and men) who have not operating hours.

If there is an error the machine types the following

G	V	H	NO	<u>Date</u>		
4	4	8	411	14	06	1964 Temporary without hours.



```
2 FORMAT(2X,6I1,2I2,I1,I3,
```

1	2	2	1	2	1	
2	2	1	2	1		
3	2	2	2	1		
4	2	2	1	2	2	1

4 12 21 11 12 11 12 21 11 12 11
C INITIAL INSTRUCTIONS TO DEFINE REASONS OF UNEMPLOYMENT AND TOTAL HOURS

PASS2=0,0

IF(UNTH) 3, 4, 5

3 UNEMP=9.0

$$TH1 \equiv -1, 0 * UNTH$$

GO TO 101

4 UNEMP=0.0

 $TH1 = 0,0$

PASS2=5.0

GO TO 101

5 IF (UNTH=99.0) 6,6,7

6 UNEMP=0.0

TH1=UNTH

GO TO 101

7 IF (UNTH=199.0) 8,8,9

8 UNEMP=1.0

$$TH1 \approx UNTH = 100.0$$

GO TO 101

9 IF (UNTH=299.0) 10,10,11

10 UNEMP=2.0

TH1=UNTH-200.0

GO TO 101

11 IF (UNTH=399.0) 12, 12, 13

12 UNEMP=3.0

TH1=INTH-300.0

GO TO 101

13 IF (UNTH=499.0) 14, 14, 15

14 UNEMP=4.0

$$TH1 = UNTH - 400,0$$

GO TO 101

15 IF (UNTH-599,0) 16,16,17

16 UNEMP=5.0

TH1=UNTH=500,0

GO TO 104

17 IF (UNTH=699.0) 18, 18, 19

18 UNEMP=6.0

TH1=UNTH-600,0

GO TO 101

19 IF (UNTH-799.0) 20,20,21
20 UNEMP=7.0

20 UNEMP=7.0
TH1=UNTH=

GO TO 101

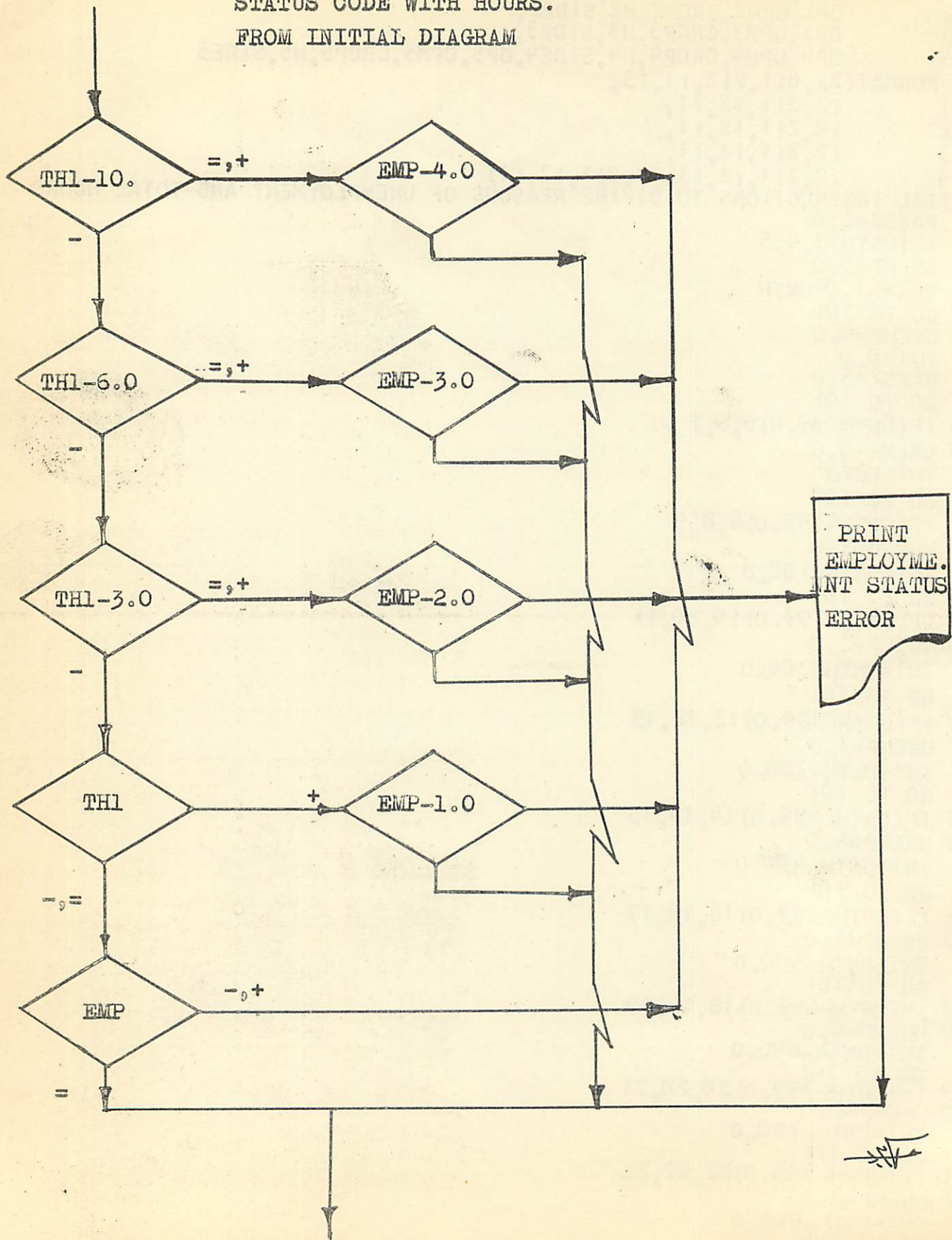
21 IF(UNTH=899.0)22,22,23

22 UNEMP=8.0

$$TH1 = UNTH - 800,0$$

GO TO 101

TEST NO(1) TO CHECK THE EMPLOYMENT
STATUS CODE WITH HOURS.
FROM INITIAL DIAGRAM



C TEST NUMBER(1) TO CHECK THE EMPLOYMENT STATUS CODE WITH HOURS

```
101 IF(TH1-10.0)103,102,102
102 IF(EMP-4.0)110,201,110
103 IF(TH1-6.0)105,104,104
104 IF(EMP-3.0)110,201,110
105 IF(TH1-3.0)107,106,106
106 IF(EMP-2.0)110,201,110
107 IF(TH1)110,109,103
108 IF(EMP-1.0)110,201,110
109 IF(EMP)110,201,110
110 PRINT 111,G,V,HS,H,T,U,DD,DM,EMP,UNEMP,TH1
111 FORMAT(11,1X11,1X11,1X311,2X12,1X12,37H 1964 EMPLOYMENT STATUS ER
XROR      ,11,1X11,1X12)
```

EST NUMBER (2) TO CHECK REASONS OF UNEMPLOYMENT CODE

01 IF(PASS2-5.0)2 02,3 01,2 02

02 IF(TH1-6.0)2 03,2 04,2 04

03 IF(UNEMP)3 01,2 05,3 01

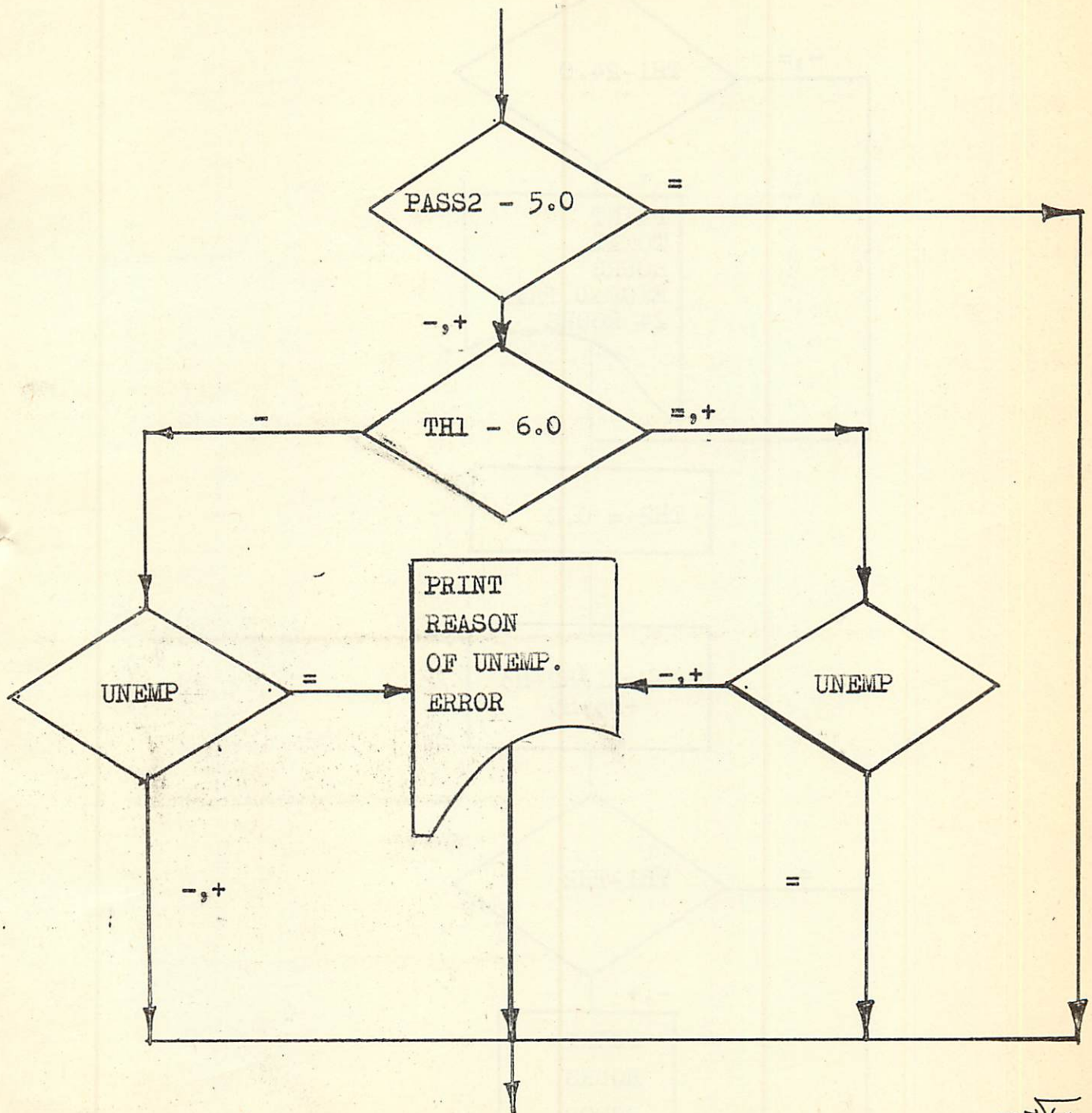
04 IF(UNEMP)2 05,3 01,2 05

05 PRINT 2 06,G,V,HS,H,T,U,DD,DM,EMP,UNEMP,TH1

06 FORMAT(11,1X11,1X11,1X311,2X12,1X12,37H 1964 REASON OF UNEMPLOYME

XNT ERROR ,11,1X11,1X12)

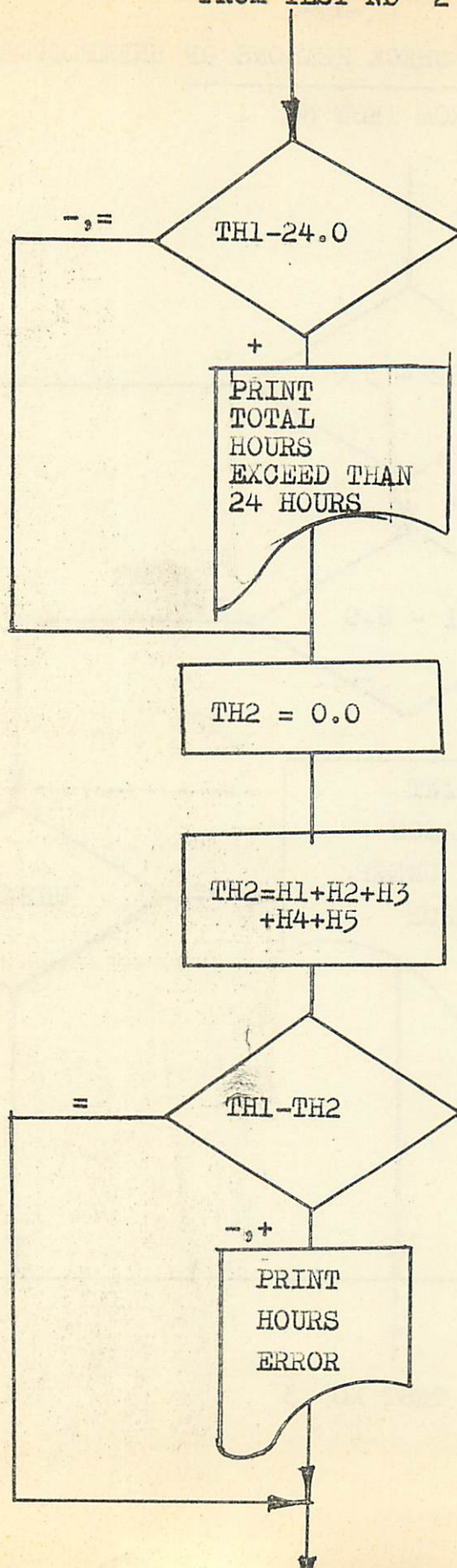
TEST NUMBER 2 TO CHECK REASONS OF UNEMPLOYMENT CODE.
FROM TEST NO 1



TO TEST NO 3

25/7

TEST NUMBER 3 TO CHECK OPERATING HOURS
FROM TEST NO 2



C TEST NUMBER(3) TO CHECK OPERATING HOURS

301 IF (TH1-24.0) 304, 304, 302

302 PRINT 303, G, V, HS, H, T, U, DD, PM,

303 FORMAT(11, 1X11, 1X11, 1X311, 2X12, 1X12, 39H 1964 TOTAL HOURS EXCEED T
XHAN 24 HOURS)

304 TH2=0.0

TH2=H1+H2+H3+H4+H5

IF (TH1-TH2) 305, 401, 305

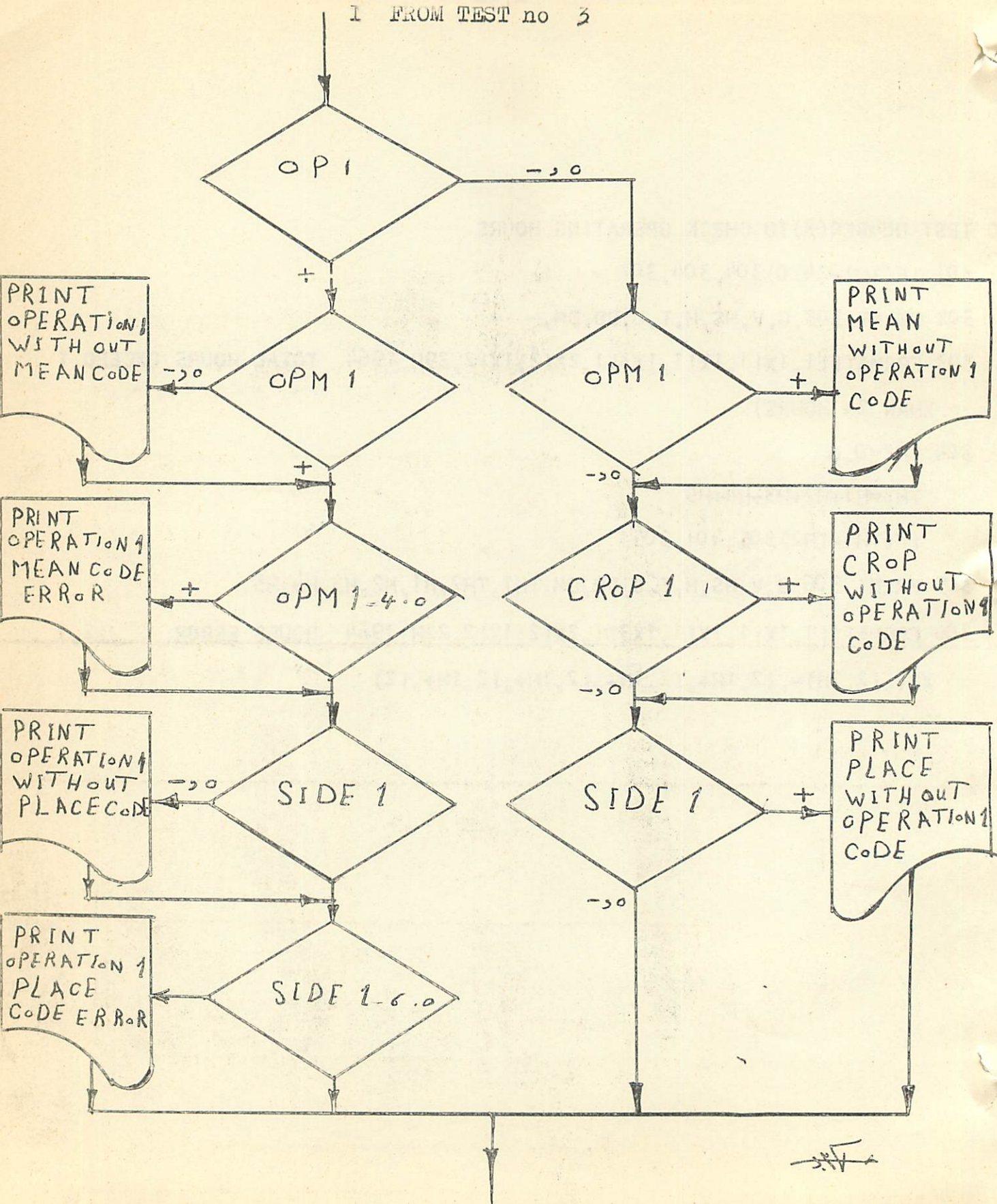
305 PRINT 306, G, V, HS, H, T, U, DD, DM, TH1, TH2, H1, H2, H3, H4, H5

306 FORMAT(11, 1X11, 1X11, 1X311, 2X12, 1X12, 22H 1964 HOURS ERROR ,12,1

XH(,12,2H)=,12,1H+,12,1H+,12,1H+,12,1H+,12)

TEST NUMBER 4(A) OPERATIONS, MEANS, CROPS, HOURS AND
PLACE TO THE OPERATION No 1

1 FROM TEST no 3



C TEST NUMBER(4) TO CHECK LIMITS OF MEAN, CROPS AND PLACE CODE

401 IF(OP1)402,402,411

402 IF(OPM1)405,405,403

403 PRINT 404,G,V,HS,H,T,U,DD,DM

404 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,36H 1964 MEAN WITHOUT OPERATI
XON 1 CODE)

405 IF(CROP1)408,408,406

406 PRINT 407,G,V,HS,H,T,U,DD,DM

407 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,36H 1964 CROP WITHOUT OPERATI
XON 1 CODE)

408 IF(SIDE1)501,501,409

409 PRINT 410,G,V,HS,H,T,U,DD,DM

410 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,36H 1964 PLACE WITHOUT OPERATI
XON 1 CODE)

411 IF(OPM1)412,412,414

412 PRINT 413,G,V,HS,H,T,U,DD,DM

413 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,36H 1964 OPERATION 1 WITHOUT
XMEAN CODE)

414 IF(OPM1-4.0)417,417,415

415 PRINT 416,G,V,HS,H,T,U,DD,DM,

416 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,34H 1964 OPERATION 1 MEAN COD
XE ERROR)

417 IF(SIDE1)418,418,420

418 PRINT 419,G,V,HS,H,T,U,DD,DM

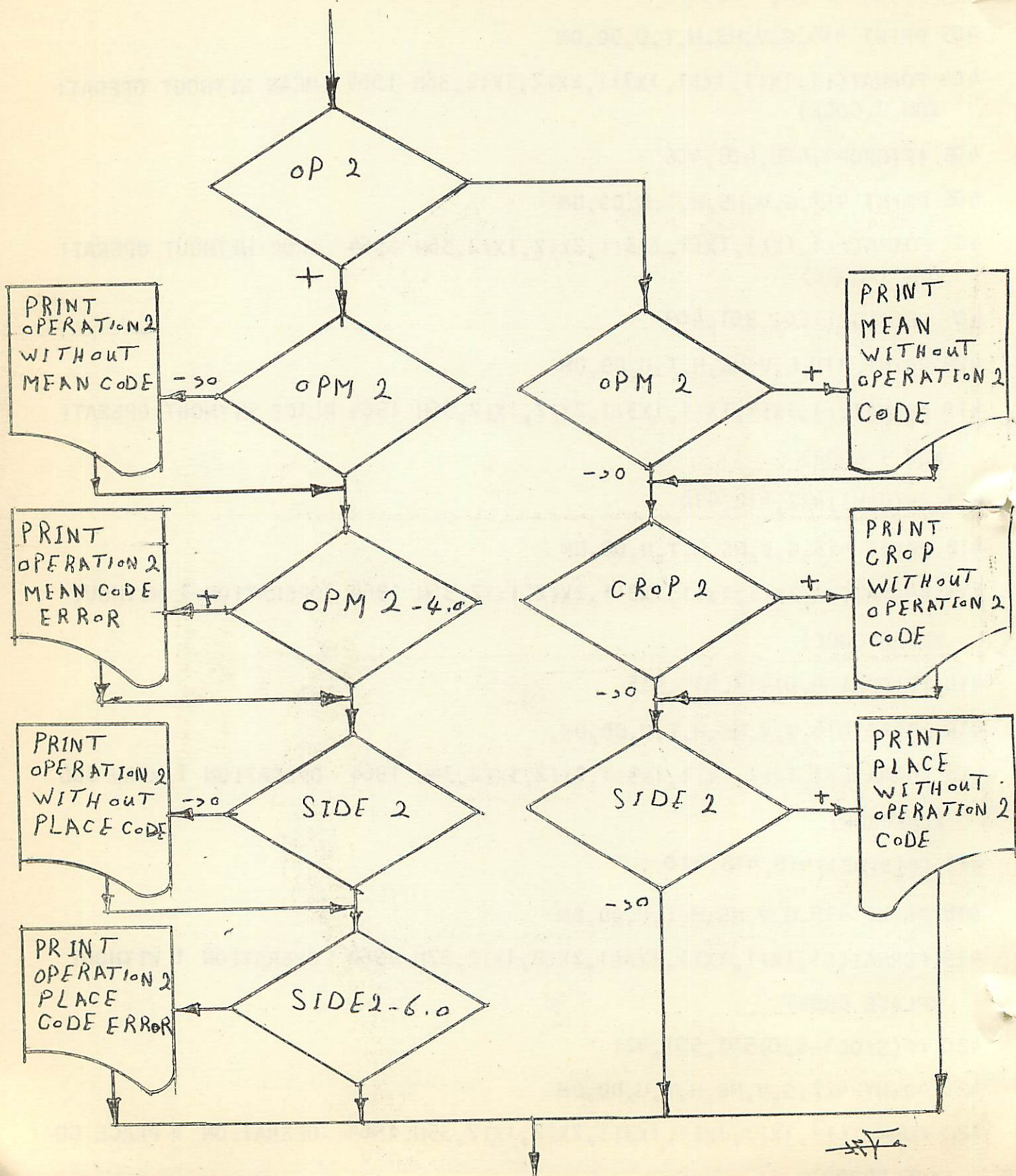
419 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,37H 1964 OPERATION 1 WITHOUT
XPLACE CODE)

420 IF(SIDE1-6.0)501,501,421

421 PRINT 422,G,V,HS,H,T,U,DD,DM

422 FORMAT(I1,1X I1,1X I1,1X3 I1,2X I2,1X I2,35H 1964 OPERATION 1 PLACE CO

TEST NUMBER 4 (B) OPERATIONS, MEANS, CROPS, HOURS
AND PLACE TO THE OPERATION No 2
2 FROM TEST No 4 A



501 IF(OP2)502,502,511

502 IF(OPM2)505,505,503

503 PRINT 504,G,V,HS,H,T,U,DD,DM

504 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 MEAN WITHOUT OPERATI

XON 2 CODE)

505 IF(CROP2)508,508,506

506 PRINT 507,G,V,HS,H,T,U,DD,DM

507 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 CROP WITHOUT OPERATI

XON 2 CODE)

508 IF(SIDE2)601,601,509

509 PRINT 510,G,V,HS,H,T,U,DD,DM

510 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 PLACE WITHOUT OPERATI

XON 2 CODE)

511 IF(OPM2)512,512,514

512 PRINT 513,G,V,HS,H,T,U,DD,DM

513 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 OPERATION 2 WITHOUT

XMEAN CODE)

514 IF(OPM2-4.0)517,517,515

515 PRINT 516,G,V,HS,H,T,U,DD,DM,

516 FORMAT(11,1X11,1X11,1X311,2X12,1X12,34H 1964 OPERATION 2 MEAN COD

XE ERROR)

517 IF(SIDE2)518,518,520

518 PRINT 519,G,V,HS,H,T,U,DD,DM

519 FORMAT(11,1X11,1X11,1X311,2X12,1X12,37H 1964 OPERATION 2 WITHOUT

XPLACE CODE)

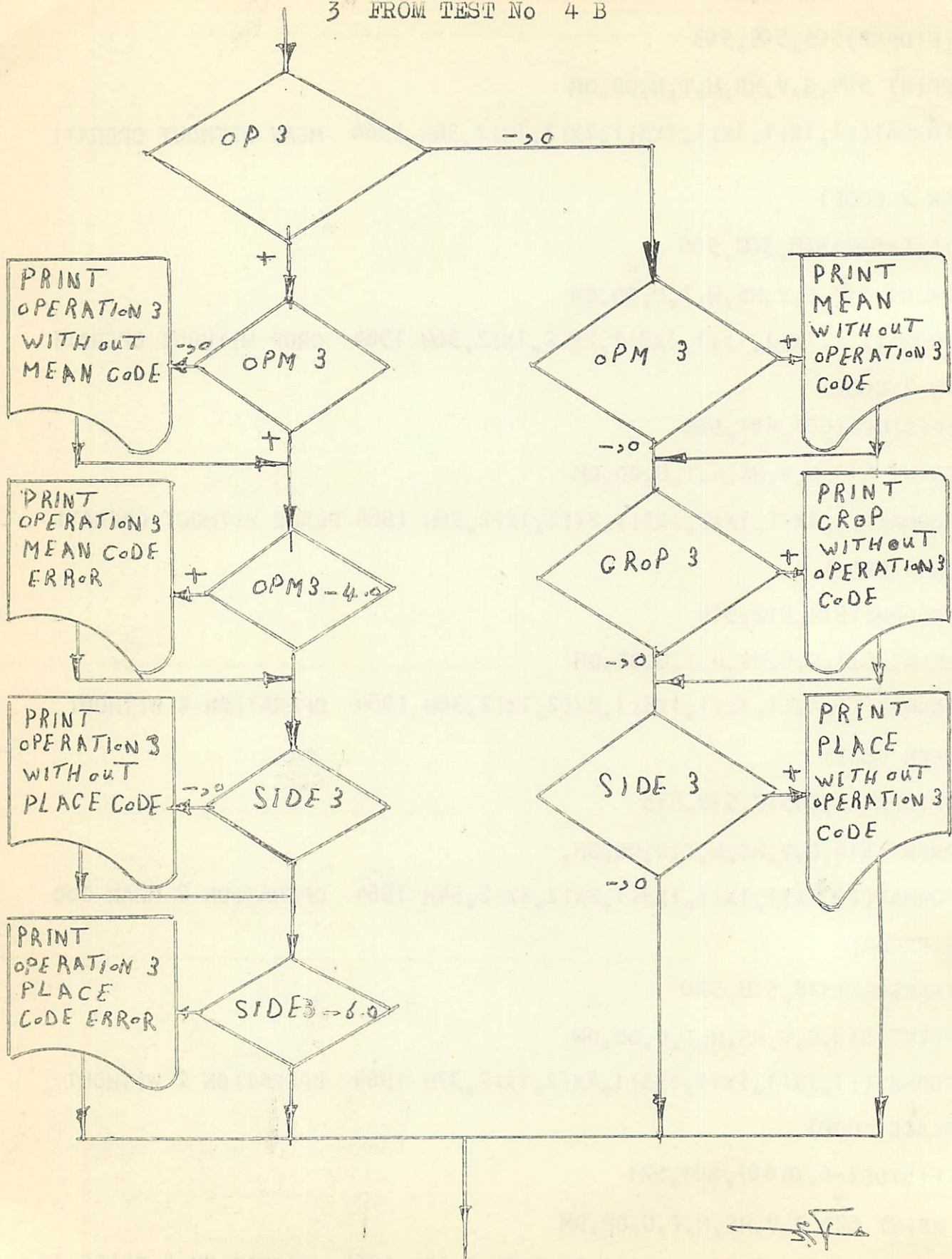
520 IF(SIDE2-6.0)601,601,521

521 PRINT 522,G,V,HS,H,T,U,DD,DM

522 FORMAT(11,1X11,1X11,1X311,2X12,1X12,35H 1964 OPERATION 2 PLACE CO

TEST NUMBER 4 (C) OPERATIONS, MEANS, CROPS, HOURS
AND PLACE TO THE OPERATION No 3

3 FROM TEST No 4 B



TO TEST No 4 D

601 IF(OP3)602,602,611

602 IF(OPM3)605,605,603

603 PRINT 604,G,V,HS,H,T,U,DD,DM

604 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 MEAN WITHOUT OPERATI
XON 3 CODE)

605 IF(CROP3)608,608,606

606 PRINT 607,G,V,HS,H,T,U,DD,DM

607 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 CROP WITHOUT OPERATI
XON 3 CODE)

608 IF(SIDE3)701,701,609

609 PRINT 610,G,V,HS,H,T,U,DD,DM

610 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 PLACE WITHOUT OPERATI
XON 3 CODE)

611 IF(OPM3)612,612,614

612 PRINT 613,G,V,HS,H,T,U,DD,DM

613 FORMAT(11,1X11,1X11,1X311,2X12,1X12,36H 1964 OPERATION 3 WITHOUT
XMEAN CODE)

614 IF(OPM3-4,0)617,617,615

615 PRINT 616,G,V,HS,H,T,U,DD,DM,

616 FORMAT(11,1X11,1X11,1X311,2X12,1X12,34H 1964 OPERATION 3 MEAN COD
XE ERROR)

617 IF(SIDE3)618,618,620

618 PRINT 619,G,V,HS,H,T,U,DD,DM

619 FORMAT(11,1X11,1X11,1X311,2X12,1X12,37H 1964 OPERATION 3 WITHOUT
XPLACE CODE)

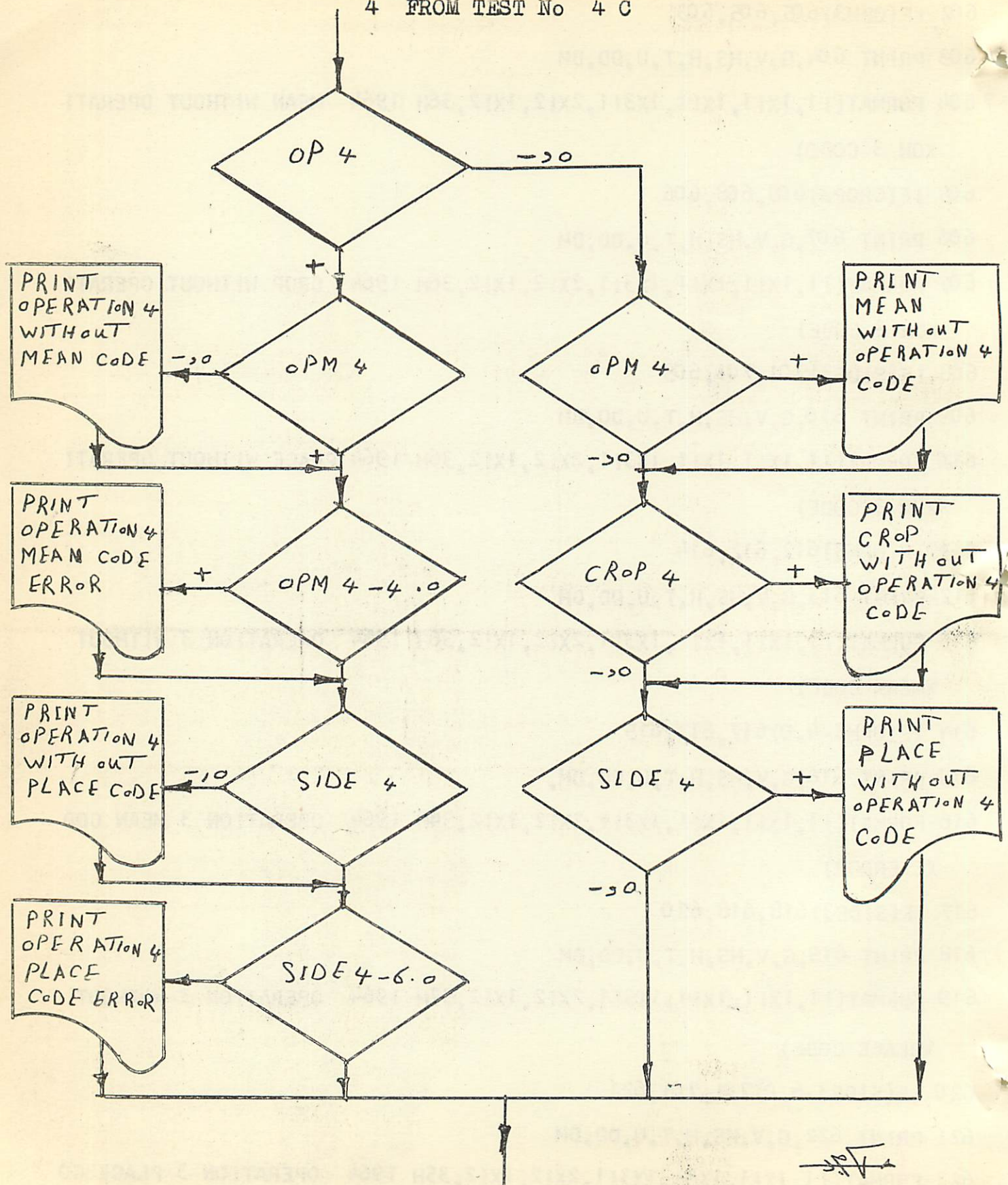
620 IF(SIDE3-6,0)701,701,621

621 PRINT 622,G,V,HS,H,T,U,DD,DM

622 FORMAT(11,1X11,1X11,1X311,2X12,1X12,35H 1964 OPERATION 3 PLACE CO
XDE ERROR)

-26-
TEST NUMBER 4 (D) OPERATIONS, MEANS, CROPS, HOURS
AND PLACE TO THE OPERATION No 4

4 FROM TEST No 4 C



TO TEST No 4.E

701 IF(OP4)702,702,711

702 IF(OPM4)705,705,703

703 PRINT 704,G,V,HS,H,T,U,DD,DM

704 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 MEAN WITHOUT OPERATI
XON 4 CODE)

705 IF(CROP4)708,708,706

706 PRINT 707,G,V,HS,H,T,U,DD,DM

707 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 CROP WITHOUT OPERATI
XON 4 CODE)

708 IF(SIDE4)801,801,709

709 PRINT 710,G,V,HS,H,T,U,DD,DM

710 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 PLACE WITHOUT OPERATI
XON 4 CODE)

711 IF(OPM4)712,712,714

712 PRINT 713,G,V,HS,H,T,U,DD,DM

713 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 OPERATION 4 WITHOUT
XMEAN CODE)

714 IF(OPM4-4.0)717,717,715

715 PRINT 716,G,V,HS,H,T,U,DD,DM,

716 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,34H 1964 OPERATION 4 MEAN COD
XE ERROR)

717 IF(SIDE4)718,718,720

718 PRINT 719,G,V,HS,H,T,U,DD,DM

719 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,37H 1964 OPERATION 4 WITHOUT
XPLACE CODE)

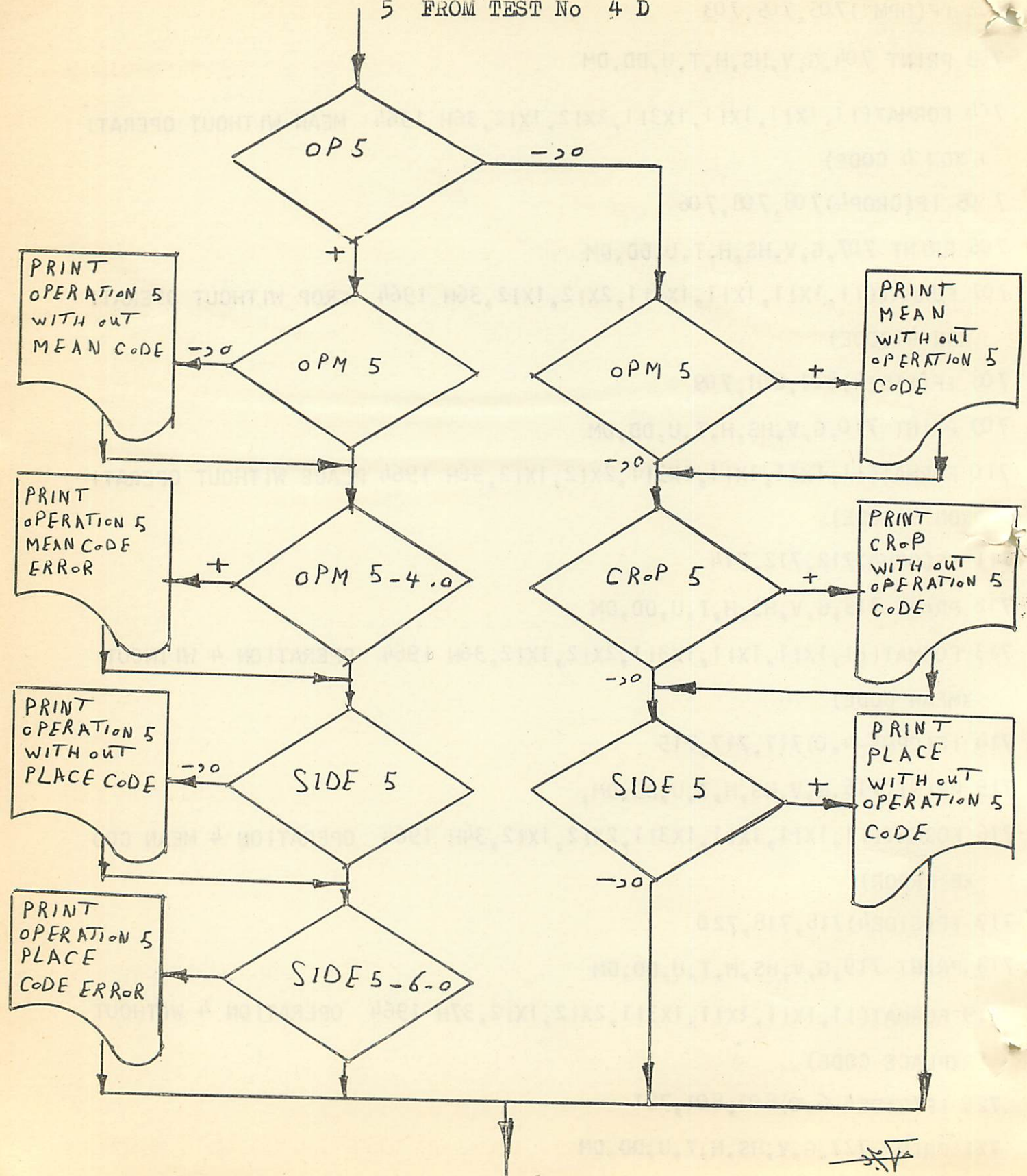
720 IF(SIDE4-6.0)801,801,721

721 PRINT 722,G,V,HS,H,T,U,DD,DM

722 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,35H 1964 OPERATION 4 PLACE CO

TEST NUMBER 5 (E) OPERATIONS, MEANS, CROPS, HOURS
AND PLACE TO THE OPERATION No 5

5 FROM TEST No 4 D



801 IF(OP5)802,802,811

802 IF(OPM5)805,805,803

803 PRINT 804,G,V,HS,H,T,U,DD,DM

804 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 MEAN WITHOUT OPERATI

XON 5 CODE)

805 IF(CROP5)808,808,806

806 PRINT 807,G,V,HS,H,T,U,DD,DM

807 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 CROP WITHOUT OPERATI

XON 5 CODE)

808 IF(SIDE5)901,901,809

809 PRINT 810,G,V,HS,H,T,U,DD,DM

810 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 PLACE WITHOUT OPERATI

XON 5 CODE)

811 IF(OPM5)812,812,814

812 PRINT 813,G,V,HS,H,T,U,DD,DM

813 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,36H 1964 OPERATION 5 WITHOUT

XMEAN CODE)

814 IF(OPM5-4.0)817,817,815

815 PRINT 816,G,V,HS,H,T,U,DD,DM,

816 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,34H 1964 OPERATION 5 MEAN COD

XE ERROR)

817 IF(SIDE5)818,818,820

818 PRINT 819,G,V,HS,H,T,U,DD,DM

819 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,37H 1964 OPERATION 5 WITHOUT

XPLACE CODE)

820 IF(SIDE5-6.0)901,901,821

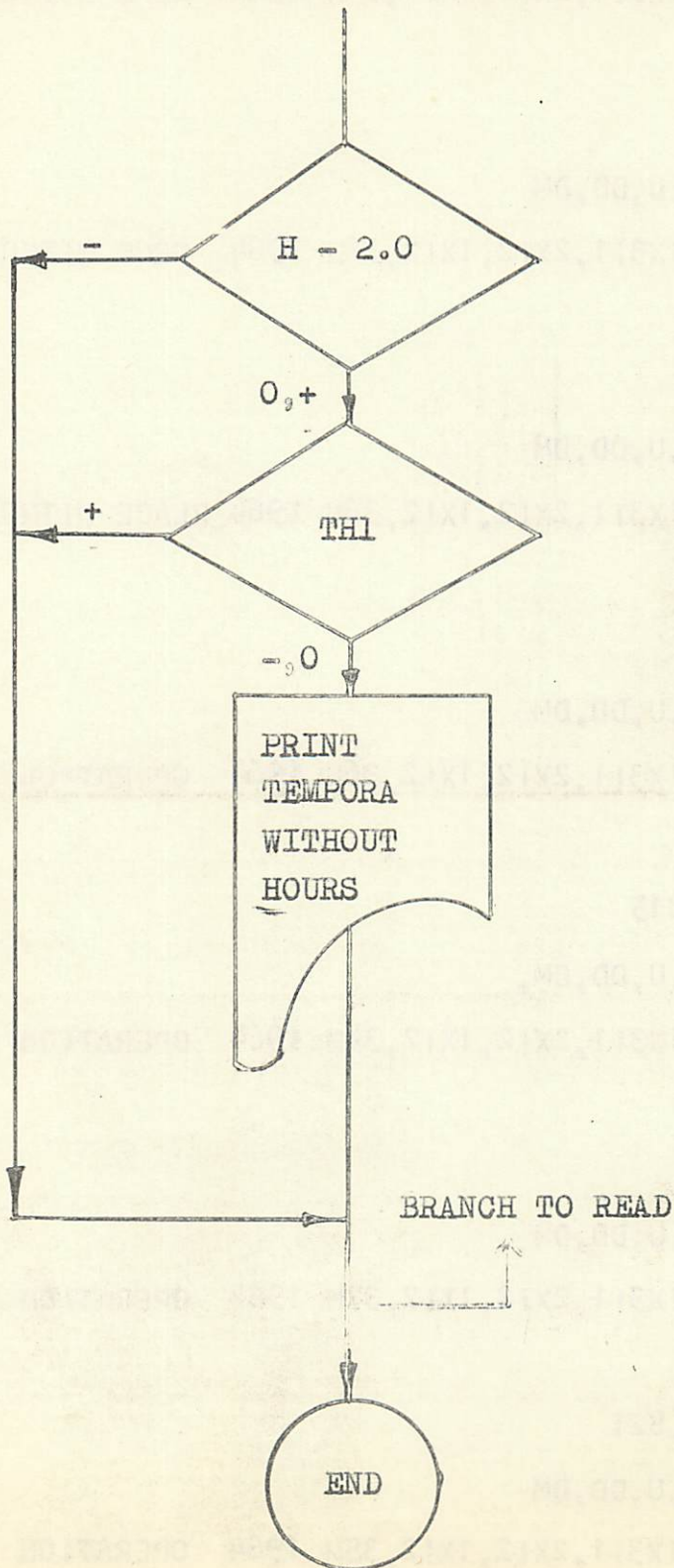
821 PRINT 822,G,V,HS,H,T,U,DD,DM

822 FORMAT(I1,1X11,1X11,1X311,2X12,1X12,35H 1964 OPERATION 5 PLACE CO

XDE ERROR)

TEST NUMBER 5 TO SELECT THE TEMPORARY
WITHOUT OPERATING HOURS.

FROM TEST NO 4



C TEST NUMBER(5) TO SELECT THE TEMPORARY WITHOUT OPERATING HOURS

901 IF(H-2.0)999,902,902

902 IF(TH1)903,903,999

903 PRINT 904,G,V,HS,H,T,U,DD,DM

904 FORMAT(11,1X11,1X11,1X311,2X12,1X12,30H 1964 TEMPORARY WITHOUT HO
XURS)

999 GO TO 1

END

THESE ARE THE RESULTS OF THE TESTS MADE ON THE

TESTS MADE ON THE 15th OF MAY 1941

THE RESULTS OF THE TESTS MADE ON THE 15th OF MAY 1941

THE RESULTS OF THE TESTS MADE ON THE 15th OF MAY 1941

THE RESULTS OF THE TESTS MADE ON THE 15th OF MAY 1941

END

THE RESULTS OF THE TESTS MADE ON THE 15th OF MAY 1941

END