NATIONAL BUREAU OF STANDARDS REPORT

9938

Annex to

A Simulation of a Highway Maintenance Operational Unit

U.S. DEPARTMENT OF COMMERCE

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Annex to
A Simulation of a Highway Maintenance Operational Unit

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PREFACE

This annex supplements the basic report "Simulation Model of a Highway Maintenance Operational Unit."

The flow charts contained herein are intended as a supplement to the more functionally oriented charts in the report. These charts are at a micro level, and come very close to exhiting a one-to-one correspondence between the computer program statement and a flow chart expression.

The notation and symbology were deliberately kept simple in order to facilitate correlation between the computer program and the flow charts. The tables included show:

Table (1) Program Statement Numbers and Corresponding Connectors by Page

Table (2) Entry and Exit Connectors by Page

Table (3) Exit Connector Page by Corresponding Entry Connector

Table (4) Statement Numbers by Page

Table (5) Computer Printout

Flow Chart Description

Subroutines

HZONE σ Pages S1 and S2

This subroutine is entered each time a new job is encountered. Arguments are job parameters, highway, and zone lists. Calculations are travel times and control parameters for the job.

RANK δ Page S3

This subroutine is used to rank the entries within an array in ascending order. Arguments are the arrays JRANK & JUNK1 having the same dimension. JRANK(I) = I and JUNK1 is the array on which the ranking is required. Upon exit from the subroutine JRANK(I) contains the rank index of JUNK1(I).

α Page S4

This subroutine checks the arrays used for the job inventory list and finds an available slot. There are no arguments as such; however, the last job which has been removed from the inventory is "remembered" unless that slot has been used subsequently. Output is the index of a usable slot. This subroutine is not in standard FORTRAN form.

β Page S5

This subroutine calls HZONE and calculates time on job. This is not in standard FORTRAN form.

Initialization

Pages 1-2

This section reads in or constructs bookkeeping type parameters. Included are such things as maximum dimensions for lists, holiday indices, day of week of the first day of the year, number of days in each month and the name of each month.

Input - (All input sections include an optional print back)

Page 3

This section reads the names of the I-O gates, the input and output gates and the job title, number available and hourly cost of personnel for each job category.

Page 4

This section reads the name, serial number, number, number available, and hourly cost for each type of equipment.

Pages 5-6

This section reads parameters belonging to each job type including a description of each basic crew which can work at this job type. The nominal hourly cost for each crew is calculated.

The variable HCST(I) is the nominal hourly cost for crew I. It is the sum of number of crew members of each labor category times the hourly cost of each equipment type used times the hourly cost.

$$HCST(I) = IEO1(I) * CE1 + IEO2(I) \times CE2 + IEO3(I) \times CE3 + ILAB(I) \times CL + \Sigma\ INO_i \times EQC_i$$

Nominal cost is used for all subsequent rankings; it may differ slightly from the true cost since no labor category shifts are included.

Pages 7-8

This section reads a list of highways which may be referenced by highway number rather than zone number. For each such highway, the highway number, the zones through which it passes and the miles per zone are read.

Page 9

This section reads weather data and constructs a weather table.

Page 10

This section reads the depot to zone travel time for each zone.

Page 11

This section reads recurring or periodic jobs. Several one-time-only initialization functions are performed.

$$XMULT = (IESD(J) - 365 + NTST * IPER(J))/IPER(J))$$

XMULT is a fudge factor used as a start-up device. Its effect is to implement the assumption that each recurring job encountered on day 1 of the simulation was actually discovered on the earliest starting day for this job type in the preceding year plus whatever multiple of the period is required to get the starting date to within the last period of the preceding year. The work units of the job in the recurring file are replaced as the job is put into the job inventory by the work units times the ratio of the period minus the number of days of the

last period which were in the preceding yearto the total period. This enables the beginning date of each recurring job to be independent of the simulation starting date by assuming that these jobs have been discovered some time in the preceding year during the last period for the type. Hence the work units from the recurring prototype file are reduced linearly as the job is put into inventory to compensate for that portion of the period which was in the preceding year.

Day Initialization

Pages 12-18

This section clears all accumulated daily sums of costs, worker hours, etc.; if appropriate, weekly and yearly sums are cleared also. The current simulation day is examined to ascertain the day of the week, holiday status, and length of work week; these are used to preset gates to allow for reports, weekly planning, and to establish criteria for determining the jobs which may be worked on. Regular (read in) and recurring jobs are put into the job inventory. Weather generated jobs are then put into inventory.

Weekly Plan Preparation

Pages 19-26

The projected work for the week is calculated and reported. Estimates are based on full work days with no allowance for emergency or weather generated jobs.

Page 23

```
WPR = VPR * MULT/(IVDL - J8 + 1)
```

$$L1 = \frac{WPR}{PROD*TOJ}$$

Page 25

```
SLH(M,N) = SLH(M,N) + Y * ILAB(L)
SE1H(M,N)= SE1H(M,N)+ Y * IEO1(L)
SE2H(M,N)= SE2H(M,N)+ Y * IEO2(L)
SE3H(M,N)= SE3H(M,N)+ Y * IEO3(L)
TCL(M,N) = TCL(M,N) + Y * (ILAB(L)* CL + K1 * CE1 + K2 * CE2 + K3
           * CE3)
```

```
NDEQT(L5) = NDEQT(L5) - L1 * INO(L4)
EQH(M,N,L4)= EQH(M,N,L5) + INO(L4) * Y
EQTOI(M,N)= EQTOL(M,N) + INO(L4) * Y * EQC(L5)
```

Report Print

Pages 26-29

The weekly plan report, and daily, weekly, and yearly work reports are printed. All these reports have essentially the same format.

Page 27

```
Y = SLH(M,I) + SE1H(M,I) + SE2H(M,I) + SE3H(M,I)
```

Post Report Gating

Page 30

Depending upon which report has just been printed, the appropriate bookkeeping is done and proper control transfers are set.

Pre Assignment Processing

Pages 31-33

For each job in the job inventory, an indicator is set to show which jobs are subject to normal crew assignment procedures. Those jobs excluded are emergency jobs, weather generated jobs, jobs which have a discovery date after simulation date, and jobs which are precluded by weather. All auxiliary crews are released and IDELTA is constructed.

Crew Assignment

Page 33 - Daily Inventory Construction

The daily inventory construction is treated as a special case of inventory updating; hence, this sequence maybe reentered after some crew assignments have been made.

Pages 33-35 - Weather Jobs

Weather generated jobs have crews assigned in this section. Generally, these jobs are considered to be sufficiently large to require all available resources so that assignment is constrained by crews available rather than by any characteristics of the job itself. The daily resource inventories are updated.

Page 34

```
SLH(M,J) = SLH(M,J) + X * X9
SE1H(M,J)= SE1H(M,J) + X * X1
SE2H(M,J)= SE2H(M,J) + X * X2
SE3H(M,J)= SE3H(M,J) + X * X3
TCL(M,J) = TCL(M,J) + X * (X9 * CL + X1 * CE1 + X2 * CE2 + X3 * CE3)
EQH(M,J,J7) = EQH(M,J,J7) + X6 * X
EQTOT(M,J)  = EQTOT(M,J) + X * X6 * EQC(J7)
```

Page 35 - Inventory Update

Daily resource inventories are updated to reflect depletion by weather generated jobs.

Pages 35-36 - Permanent Crew Feasibility

This section verifies that there are adequate resources to fill all permanent crew assignments which have been made prior to simulation day for all jobs on which work is possible. If resources are inadequate, all permanent crew assignments are canceled; otherwise, permanent assignments are confirmed and resource inventories are reduced accordingly.

Pages 36-40 - Normal Crew Assignment

The normal assignment procedures are used to assign crews made up from resource inventories to jobs other than weather generated, emergency, and X type jobs.

Page 41 - JOB X Inventory

All remaining labor resources are converted to man hours from man days and tentatively assigned to JOB X.

Pages 41-46, 53 - Emergency Job Assignment

All jobs in inventory are searched to locate emergency jobs. Assignments to these jobs are made in preferential order from JOB X, from among auxiliary crews, or from permanent crews. Within each category of assigned crew, choice is made by favoring the last crew assigned to a job.

Pages 41-42 - From JOB X

Work units, costs, labor hours, and equipment hours are accumulated for those emergency jobs which can be accomplished by JOB X resources.

Page 42

```
TCL(M,1)     = TIME * (Y *  CL + X1 * CE1 +X2 * CE2 + X3 * CE3) +
               TCL(M,1)
EQH(M,1,K3)  = EQH(M,1,K3)+ INO(N) * TIME
EQTOT(M,1)   = EQTOT(M,1) + INO(N) * TIME * EQC(K3)
NDEQT(K3)    = NDEQT(K3) - INO(N) * TIMET
```

Pages 42-44 - From Auxiliary Crews

The closest (in travel time) auxiliary crew which can accomplish the emergency job is released from the job to which it has been assigned and assigned to JOB X for as many hours as are required to do the emergency job. Work done, costs, etc. done on the job to which the crew was originally assigned are accumulated for that fraction of the day for which the crew remained assigned. (8 hours - emergency job time). The JOB X emergency assignment section is reentered.

Page 44

```
(8 * ILAB(J5) + DXL) : (2 * TIME)
(8 *(IEO1(J5)+IEO2(J5) + IEO3(J5)) + DXE1 + DXE2 + DXE3) : TIME
```

Pages 45-46 - From Permanent Crews

The procedure is exactly like from auxiliary crews above, except selection is made from among permanent crews.

Page 45

Exactly as the two instructions on Page 44.

Pages 46-52 - Summary Creation

All costs, labor hours, equipment hours, etc., which appear in the reports are accumulated. Surplus capability (fractional crew days) for a job which is completed in less than a full day is put into JOB X or credited to another job of the same type. Appropriate reports are printed, the simulation day is advanced and the day initialization section is reentered.

Table 1

Program Statement Numbers and Corresponding Connectors by Page

Page	Statement	Connector	Other Reference (page)
1	16	start	
	400	-	
	410	-	
2	-	2	1
	45	-	
	65	-	
3	1	3A	
	2	-	
	3	-	
	46	-	
	47	-	
	1102	3	2
4	48	4	3
	49	-	
	50	-	
	52	-	
5	4	5	4
	5	5A	6
	6	5B	6
	9200	-	
6	-	6	5
	7		
	8		
	9		
	10		
	11		
	12		
	13		
	14		
	15		
	9210		
	9220		
	9370		
7	20	7	5
	21	-	
	22	-	
	23	-	
	39	-	
	9230	-	
	9240	-	

Table 1 continued

Page	Statement	Connector	Other Reference
8	24	8	7
	25	-	
9	28	9	8
	29	-	
	30	-	
	31	-	
	32	-	
	33	-	
	34	-	
	35	-	
	36	-	
	37	-	
	38	-	
10	40	10	9
	41	-	
	42	-	
	43	-	
	44	-	
	441	-	
11	51	11	10
	53	-	
	54	-	
	55	-	
	56	-	
	57	-	
	300	-	
	305	-	
	310	-	
	315	-	
	9960	-	
12	58	12	11
	700	12A	30
	701		
	702		
	703		
	1104		
13	-	13	12
	1036	-	
	1038	-	
	1040	-	
	1042	-	
	1043	-	

Table 1 continued

Page	Statement	Connector	Other Reference
14	-	14	13
	62	-	
	69		
	70	14A	15,18
	71	α_1	
	440	-	
	442	-	
	444	-	
	709	-	
15	63	15	14
	64	β_1	
	72	-	
	630	-	
	631	-	
16	61	-	
	80	16	15,14
	81	α_2	
	84	16B	17
	175	16A	17
	301	-	
	304	-	
	704		
17	82	-	
	83	-	
	302	17	16,14
	303	-	
	325	17A	Subroutine
	820	-	
	830	-	
	-	β_1	
	3030		
18	-	18	16
	90	-	
	91	α_3	
	92	-	
	93	α_4	
	95	-	
	96	α_5	
	840	-	
	3090	-	
	3096	-	
	150		

Table 1 continued

Page	Statement	Connector	Other Reference
19	-	19	18
	1024	-	
	2000	-	
	2021	-	
	2022	-	
	3020	-	
	3095	-	
	-	δ_1	
20	1001	20	19
	1002	-	
	-	20A	21
	-	20B	21
	-	20C	21
21	-	21	20
	1003	-	
	1004	-	
	1015	21A	20
22	-	22	21
	1114	-	
	1116	-	
	2050	22A	26
23	-	23	22
	-	23A	25
	-	23B	25
	1005	-	
	1006	-	
	1007	23D	24
24	1008	24	23
	1009	-	
	1010	-	
	1011	-	
	1012	-	
	1026	-	
25	1014	25	24
	1016		
	1018	25A	23
	1020	25B	23
26	-	26	25
	773	26A	30,52
	1106	-	
	1112	-	
	3091	-	

Table 1 continued

Page	Statement	Connector	Other Reference
27	-	27	26
	775	-	
	777	-	
28	-	28	27
	1044	-	
29	-	29	28
	780	-	
	782	-	
	783	-	
	785	-	
	7801	-	
30	766		
	772	30	29,26,52
	774		
	776		
	1028		
	1641		
	7730		
31	-	31A	32
	105	31	18,35
	111		
	112		
	113		
	452		
	453		
	1046		
32	114	32	31
	115		
	116		
	117		
	118		
	119		
	121		
	122		
	123	32A	31
	124	32B	31
	454	32C	31
33	110	33A	31,32
	139		
	250	33	32,36
	450		
	451		

Table 1 continued

Page	Statement	Connector	Other Reference
34	-	34	33
	-	34A	35
	420		
	422		
	424		
	426		
	428		
	430		
	432		
35	-	35	34
	106	35A	33
	125		
	126		
	141	35E	37
	172	35D	40
	176	35C	36
	177	35B	36
	434		
	436		
36	-	36	35
	107		
	129		
	130		
	131		
	140	36A	35
	157		
	161	36B	35
37	132	37	36
	133		
	138		
	144		
	148	37C	38,39,40
	178	37B	40
38	142	38	37,36
	143		
	145		
	280		
	285		
	1452		
	1454		

Table 1 continued

Page	Statement	Connector	Other Reference
39	146	39	38,36
	147		
	162	39A	37
	163		
	164		
	169		
	180		
40	160	40B	37
	165	40	39
	168		
	170		
	171	40C	38
	179	40A	37
	181		
	275		
41	-	41	40
	2004		
	2006		
	3006	41A	46
42	-	42	41
	200		
	201		
	202	42B	53
	203	42A	41
	204		
	205		
	2008		
	2010		
43	-	43	42
	-	43B	44
	-	43C	44
	206	43A	44,42
	207		
	208		
	221		
44	-	44	43
	209		
	210	44A	43
	211		
	218	44B	43

Table 1 continued

Page	Statement	Connector	Other Reference
45	-	45	44
	214		
	215		
	216		
	217		
	220		
	290		
	318		
46	-	46	45
	-	46B	48
	-	46C	48
	222	46A	41,42
	223		
	1118		
	1120		
	1130		
47	650		
	651		
	652		
	653		
	760		
	761		
	1122	47	46
	1124		
48	-	48	47
	762	48A	47
	763	48B	46
	-	48C	51
	1126	-	
	7611	48D	51
49	-	49	48
	7600		
	7601		
	7602		
	7604		
	7620		
50	-	50	49
	7622		
	7624		

Table 1 continued

Page	Statement	Connector	Other Reference
51	-	51	50
	2003	51B	48
	7610	51A	48,49
	7626	-	
	20030	-	
52	-	52	51
	770	52A	33,51
	771	-	
	1110	-	
	2002		
53	212		
	213		
	219	53	44,45

Table 2

Entry and Exit Connectors by Page

Page	Entry	Exit
1	START	2
2	2	3
3	3	
	3A	4
4	4	5
		HALT
5	5	6
	5A	7
	5B	HALT
6	6	5A
		5B
		HALT (3)
7	7	8
		HALT (2)
8	8	9
9	9	10
10	10	11
11	11	12
		HALT (2)
12	12	13
	12A	
13	13	14
14	14	15
	14A	16
		17
15	15	14A
		16
16	16	17
	16A	
	16B	

Page	Entry	Exit
17	17	16A
	17A	16B
18	18	14A
		19
		31
19	19	20
20	20	21
	20A	21A
	20B	
	20C	
21	21	20A
	21A	20B
		20C
22	22	23
	22A	
23	23	24
	23A	25A
	23B	25B
	23C	
	23D	
24	24	23D
		25
25	25	23A
	25A	23B
	25B	26
26	26	22A
	26A	27
		30
27	27	28
28	28	29
29	29	30
30	30	12A
		26A

Page	Entry	Exit
31	31	32
	31A	32A
		32B
		32C
		33
32	32	31A
	32A	33
	32B	33A
	32C	
33	33	34
	33A	35A
		52A
34	34	35
	34A	
35	35	31
	35A	34A
	35B	36
	35C	36A
	35D	36B
	35E	
36	36	33A
	36A	37
	36B	38
		39
37	37	35E
	37B	39A
	37C	40A
		40B
38	38	37C
		40C
39	39	37C
	39A	40

Table 2 (continued)

Entry and Exit Connectors by Page

Page	Entry	Exit
40	40	35D
	40A	37B
	40B	37C
	40C	41
41	41	42
	41A	46A
42	42	43
	42A	43A
	42B	46A
43	43	44
	43A	44A
	43B	44B
	43C	
44	44	43B
	44A	43C
	44B	45
		53
45	45	46
		53
46	46	41A
	46A	47
	46B	48B
	46C	
47	47	48
		48A
48	48	46B
	48A	46C
	48B	49
	48C	51A
	48D	51B
49	49	50
		51A
50	50	51
51	51	48C
	51A	48D
	51B	52
		52A
52	52	26A
	52A	30
53	53	42B

Table 3

Exit Connector Page by Corresponding Entry Connector

Connector	Entered From
2	1
3	2
4	3
5	4
5A	6
5B	6
6	5
7	5
8	7
9	8
10	9
11	10
12	11
12A	30
13	12
14	13
14A	15,18
15	14
16	14,15
16A	17
16B	17
17	14,16
17A	Subroutine
17B	Subroutine
18	16
19	18

Connector	Entered From
20	19
20A	21
20B	21
20C	21
21	20
21A	20
22	21
22A	26
23	22
23A	25
23B	25
23D	24
24	23
25	24
25A	23
25B	23
26	25
26A	30,52
27	26
28	27
29	28
30	26,29,52
31	18,35
31A	32
32	31
32A	31
32B	31
32C	31
33	31,32
33A	32,36
34	33
34A	35

Connector	Entered From
35	34
35A	33
35B	36
35C	36
35D	40
35E	37
36	35
36A	35
36B	35
37	36
37B	40
37C	38,39,40
38	36,37
39, 39A	36,38 37
40	39
40A	37
40B	37
40C	38
41	40
41A	46
42	41
42A	41
42B	53
43	42
43A	42,44
43B	44
43C	44
44	43
44A	43
44B	43
45	44
46	45
46A	41,42
46B	48
46C	48

Table 3 (continued)

Exit Connector Page by Corresponding Entry Connector

Connector	Entered From
47	46
48	47
48A	47
48B	46
48C	51
48D	51
49	48
50	49
51	50
51A	48,49
51B	48
52	51
52A	33,51
53	44,45

Table 4

Statement Numbers by Page

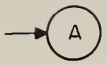
Statement	Page
1- 3	3
4- 6	5
7-15	6
16	1
20-23	7
24-25	8
28-38	9
39	7
40-44	10
45	2
46-47	3
48-50	4
51	11
52	4
53-57	11
58	12
61	16
62	14
63-64	15
65	2
69-71	14
72	15
80-81	16
82-83	17
84	16
90-93	18
95-96	18
105	31
106	35
107	36
110	33
111-113	31
114-119	32
121-124	32
125-126	35
129-131	36
132-133	37
138	37
139	33
140	36
141	35
142-143	38
144	37
145	38
146-147	39
148	37
150	17
157	36
160	40
161	36
162-164	39
165	40
168	40
170	40
172	35
175	16
176-177	35
178	37
179	40
180	39
181	40
200-205	42
206-208	43
209-211	44
212-213	53
214-217	45
218	44
219	53
221	43
222-223	46
250	33
275	40
280	38
285	38
300	11
301	16
302-303	17
304	16
305	11
310	11
315	11
325	17
400	1
410	1
420	34
422	34
424	34
426	34
428	34
430	34
432	34
434	35
436	35
441	10
442	14
444	14
450-451	33
452-453	31
454	32
630-631	15
650-653	47
700-703	12
704	16
709	14
760-761	47
762-763	48
766	30
770-771	52
772	30
773	26
774	30
775	27
776	30
777	27
780	29
782-783	29
785	29
820	17
830	17
840	18
1001-1002	20
1003-1004	21
1005-1007	23
1008-1012	24
1014	25
1015	21
1016	25
1018	25
1020	25
1024	19
1026	24
1028	30
1036	13
1038	13
1040	13
1042-1043	13
1044	28
1046	31
1102	3
1104	12
1106	26
1110	52
1112	26

Table 4

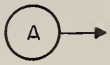
Statement Numbers by Page (continued)

Statement	Page	Statement	Page	Statement	Page	Statement	Page
1114	22	7801	29				
1116	22	9200	5				
1118	46	9210	6				
1120	46	9220	6				
1122	47	9230	7				
1124	47	9240	7				
1126	48	9370	6				
1130	46	9960	11				
1452-1453	38	20030	51				
1641	30						
2000	19						
2002	52						
2003	51						
2004	41						
2006	41						
2008	42						
2010	42						
2021-2022	19						
2050	22						
3006	41						
3020	19						
3030	17						
3090	18						
3091	26						
3095	19						
3096	18						
7600-7602	49						
7604	49						
7610	51						
7611	48						
7620	49						
7622	50						
7624	50						
7626	51						
7730	30						

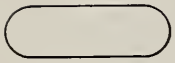
Symbols & Notation



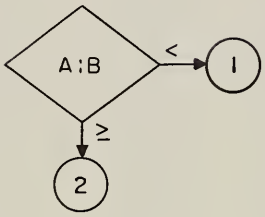
Exit Connector – see page A



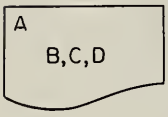
Entrance Connector



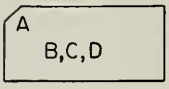
Halt or start indicator



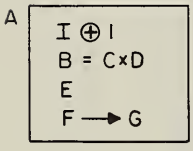
Decision Box
If A is less than B transfer control to connector 1
A is greater than or equal to B transfer to 2
Similar notation is used for =, ≠ etc.



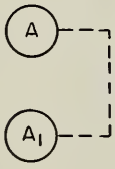
Either a line of print or a report
B,C, & D are printed according to format A



Input Record
B,C, & D are read according to format A

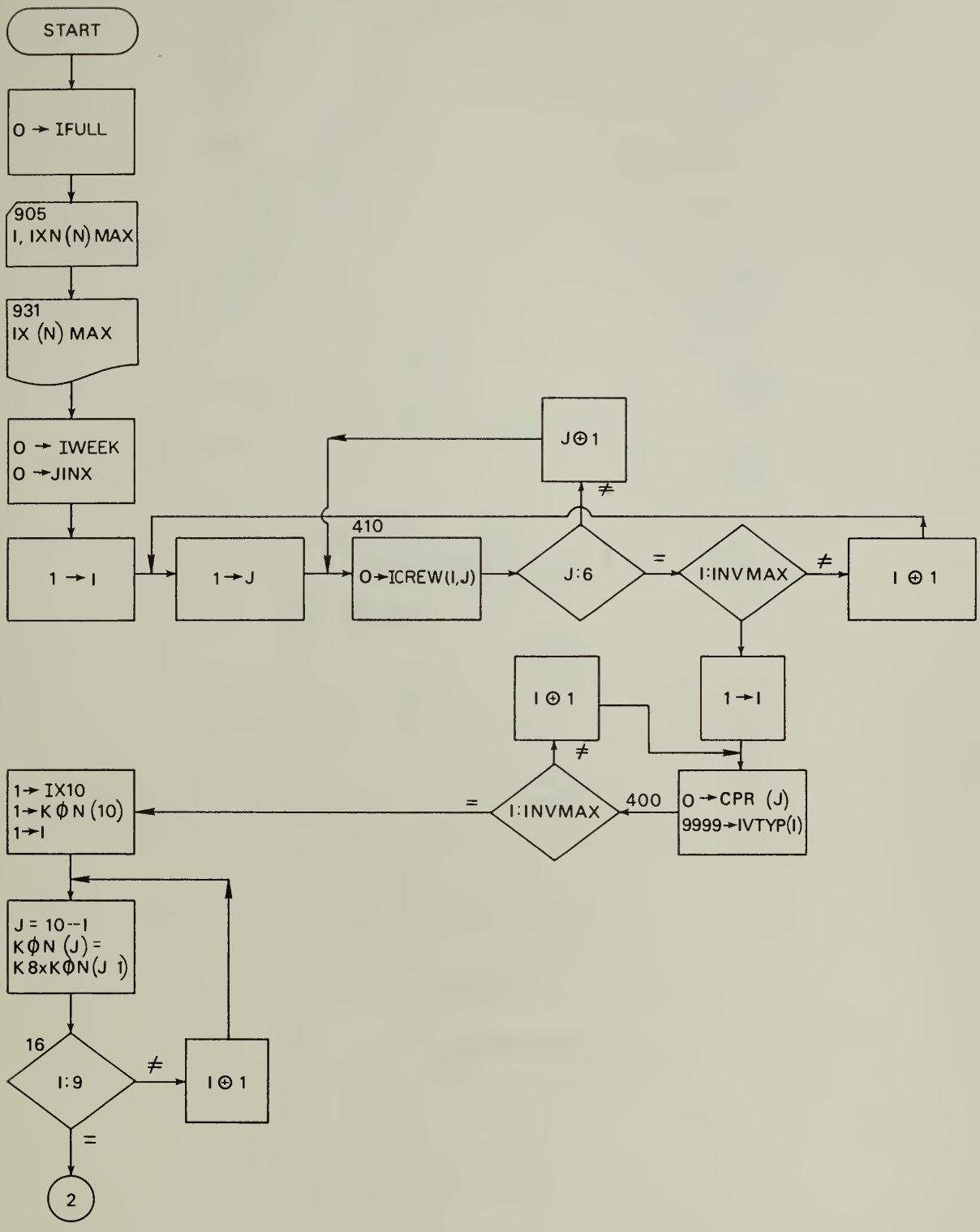


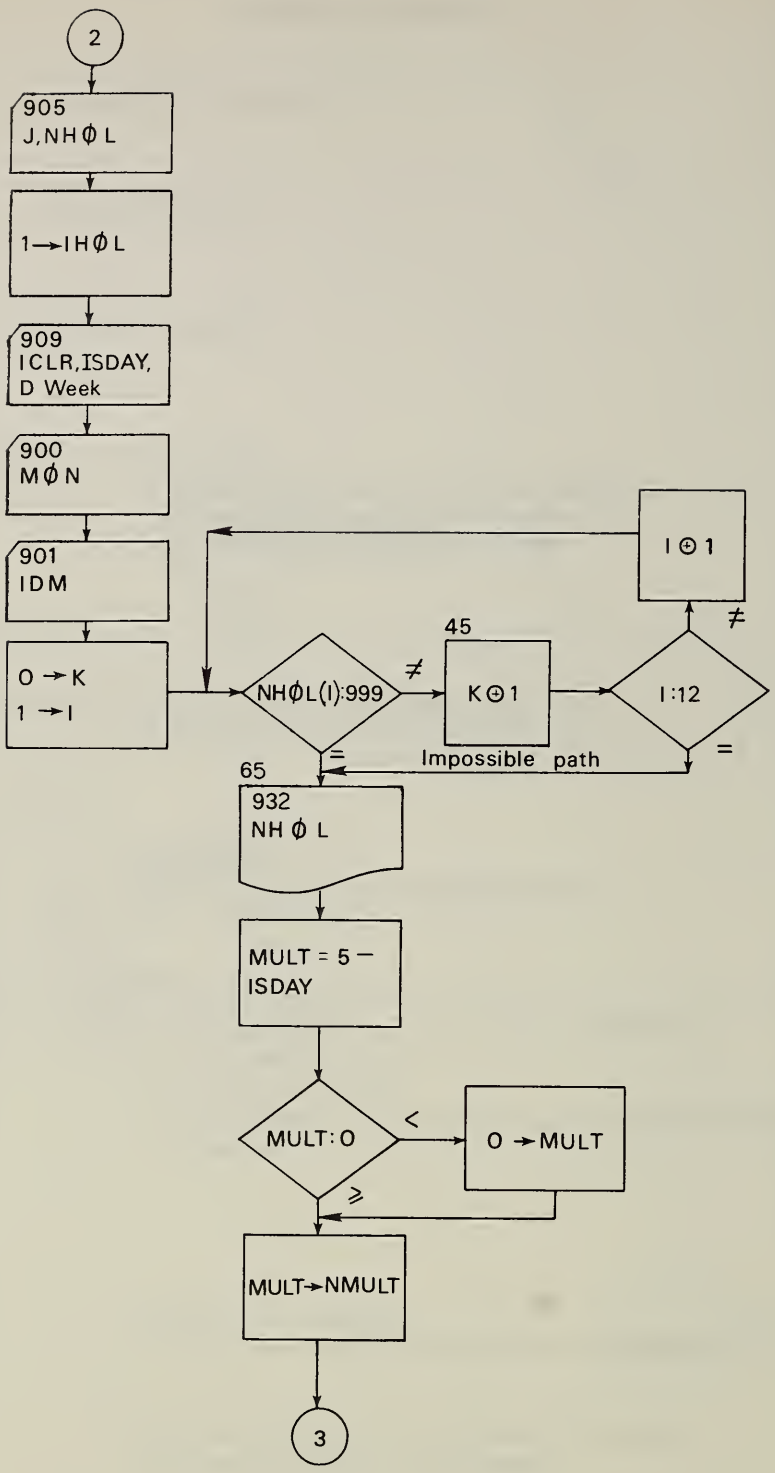
Computation Box – begins with program statement A
I is replaced by I + I
B is replaced by C×D
E is calculated; relation is too long to fit into box and is given in text
F replaces G

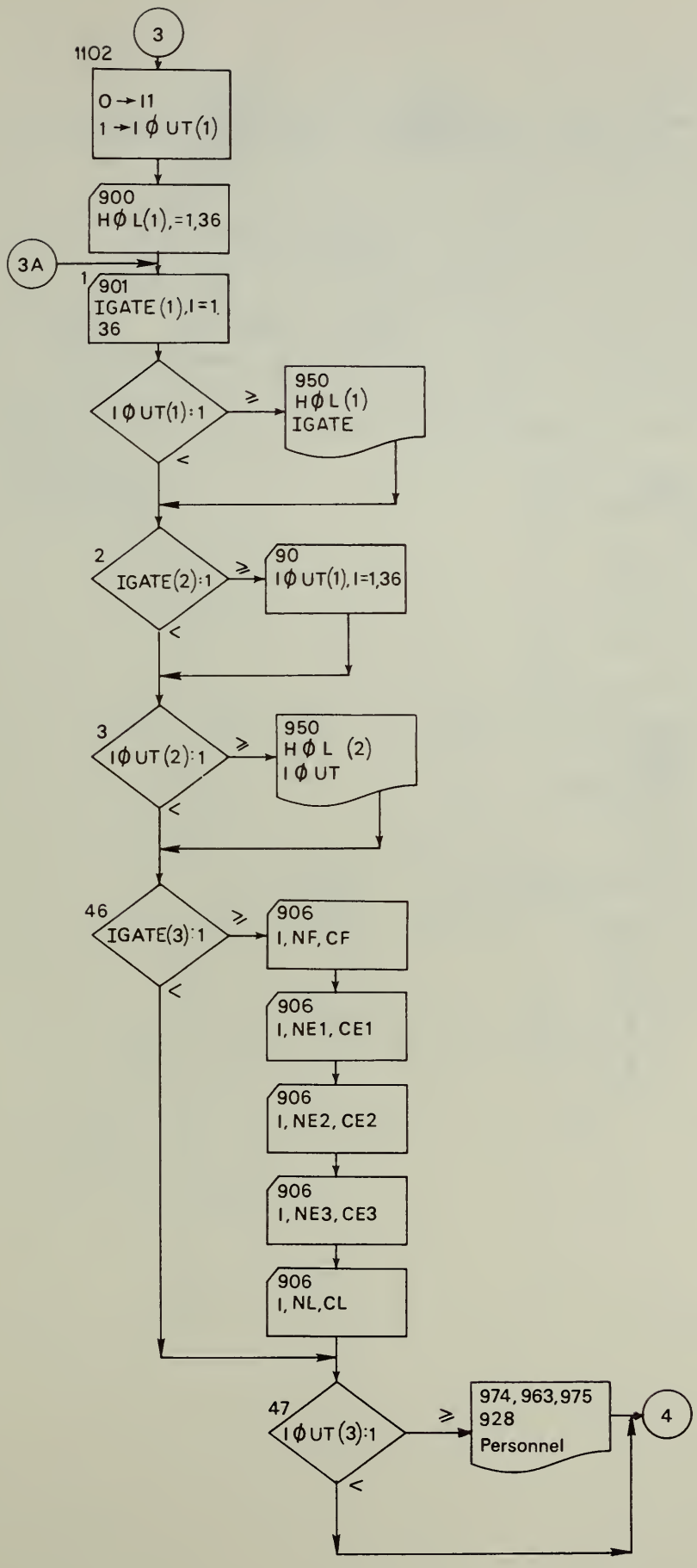


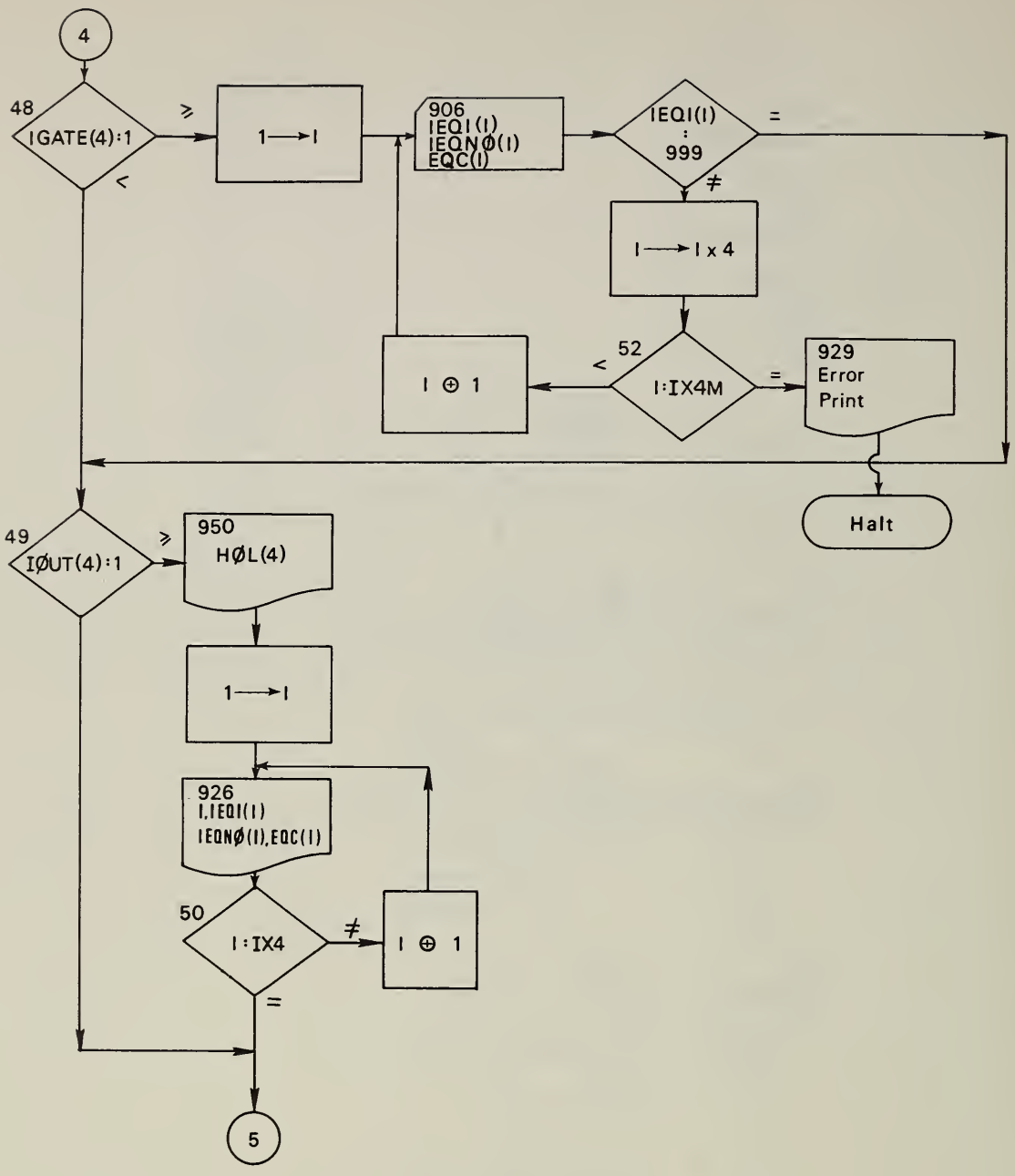
Subroutine call indication
Subroutine A is entered and control is returned to A_1

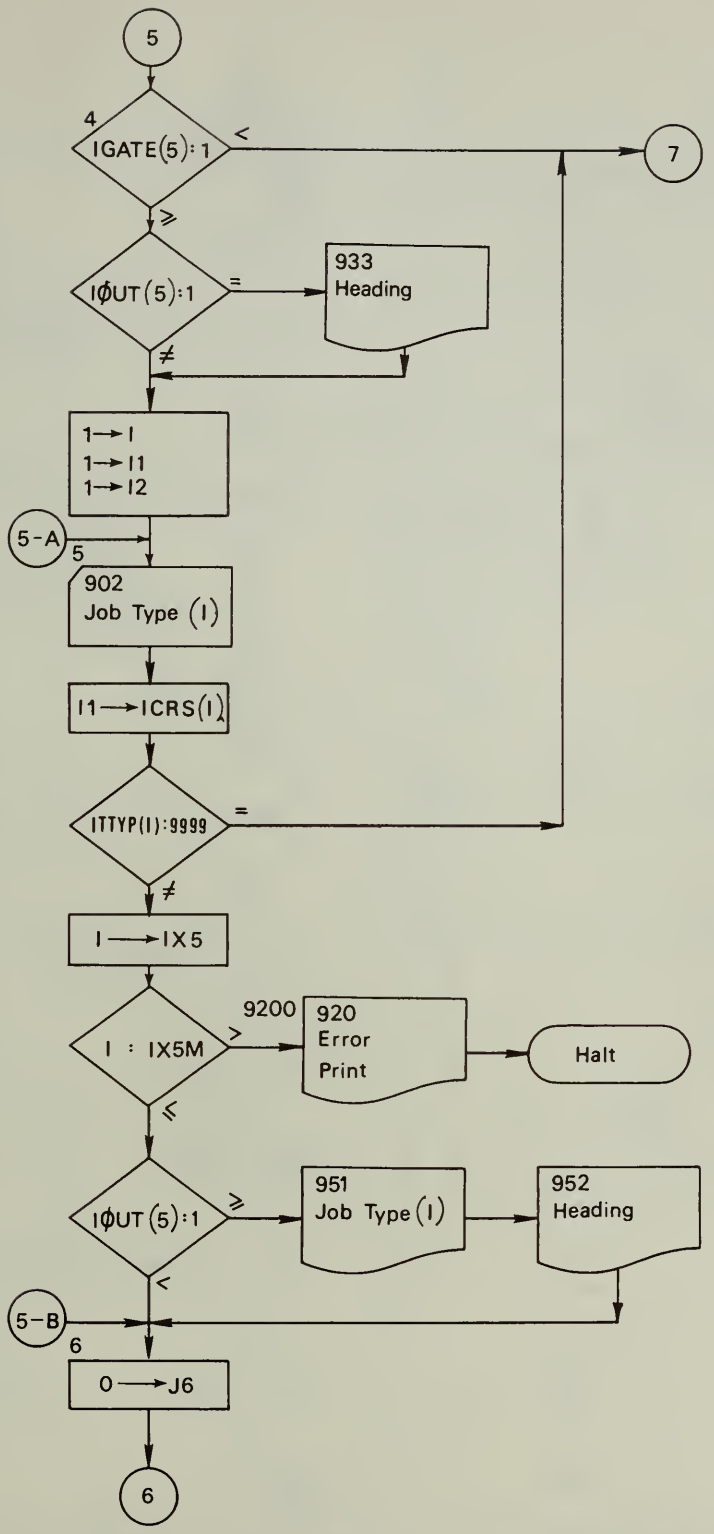
Variables beginning with A–H and Ø–Z are real;
those beginning with I–N are integer

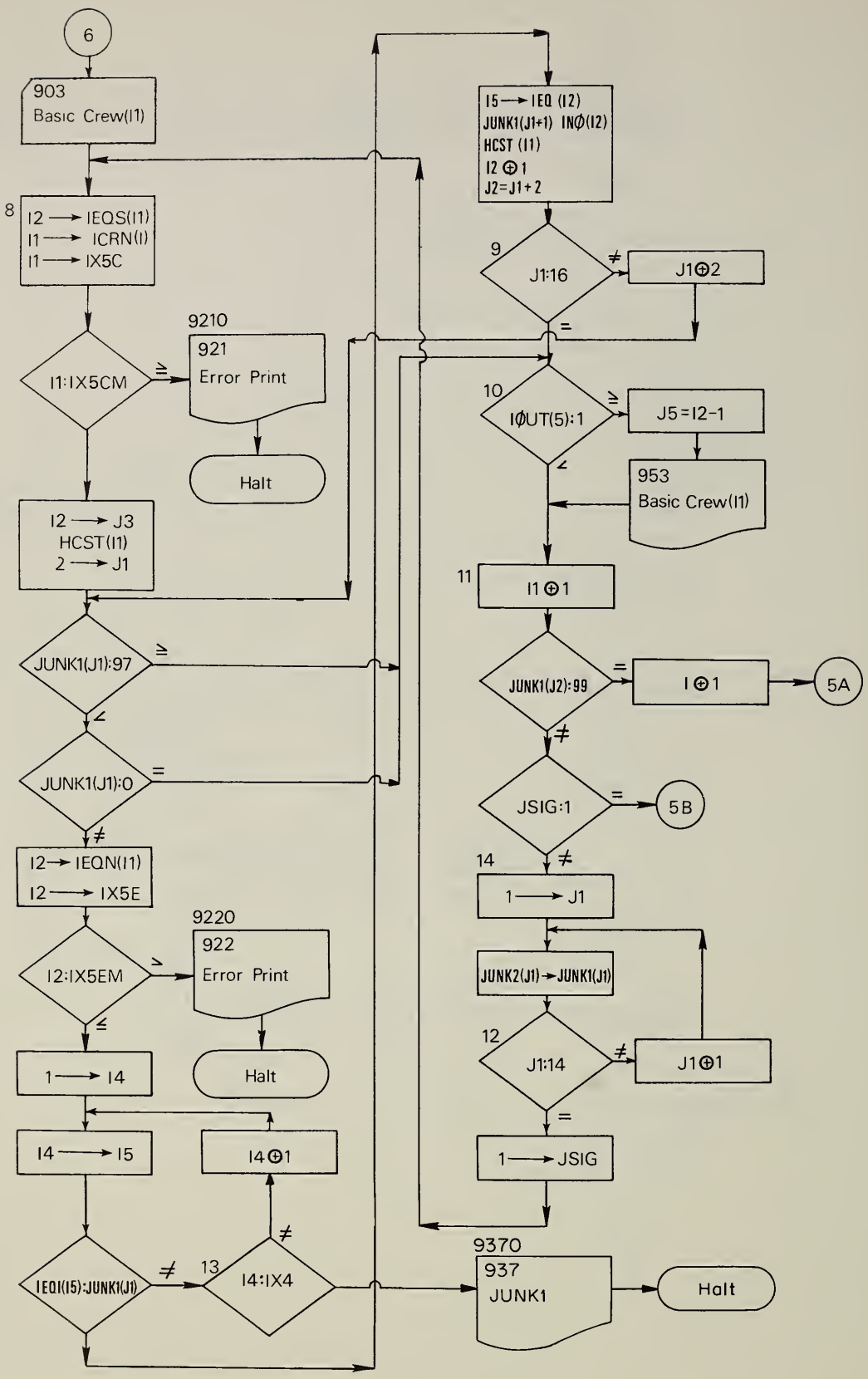

START
0 → IFULL
905
I, IXN(N) MAX
931
IX (N) MAX
0 → IWEEK
0 → JINX
1 → I
1 → J
410
0 → ICREW(I,J)
J:6
=
J⊕1
≠
I:INVMAX
≠
I ⊕ 1
1 → I
I ⊕ 1
≠
=
I:INVMAX
400
0 → CPR (J)
9999 → IVTYP(I)
1 → IX10
1 → KØN (10)
1 → I
J = 10 -- I
KØN (J) =
K8 x KØN (J 1)
16
I:9
≠
I ⊕ 1
=
2

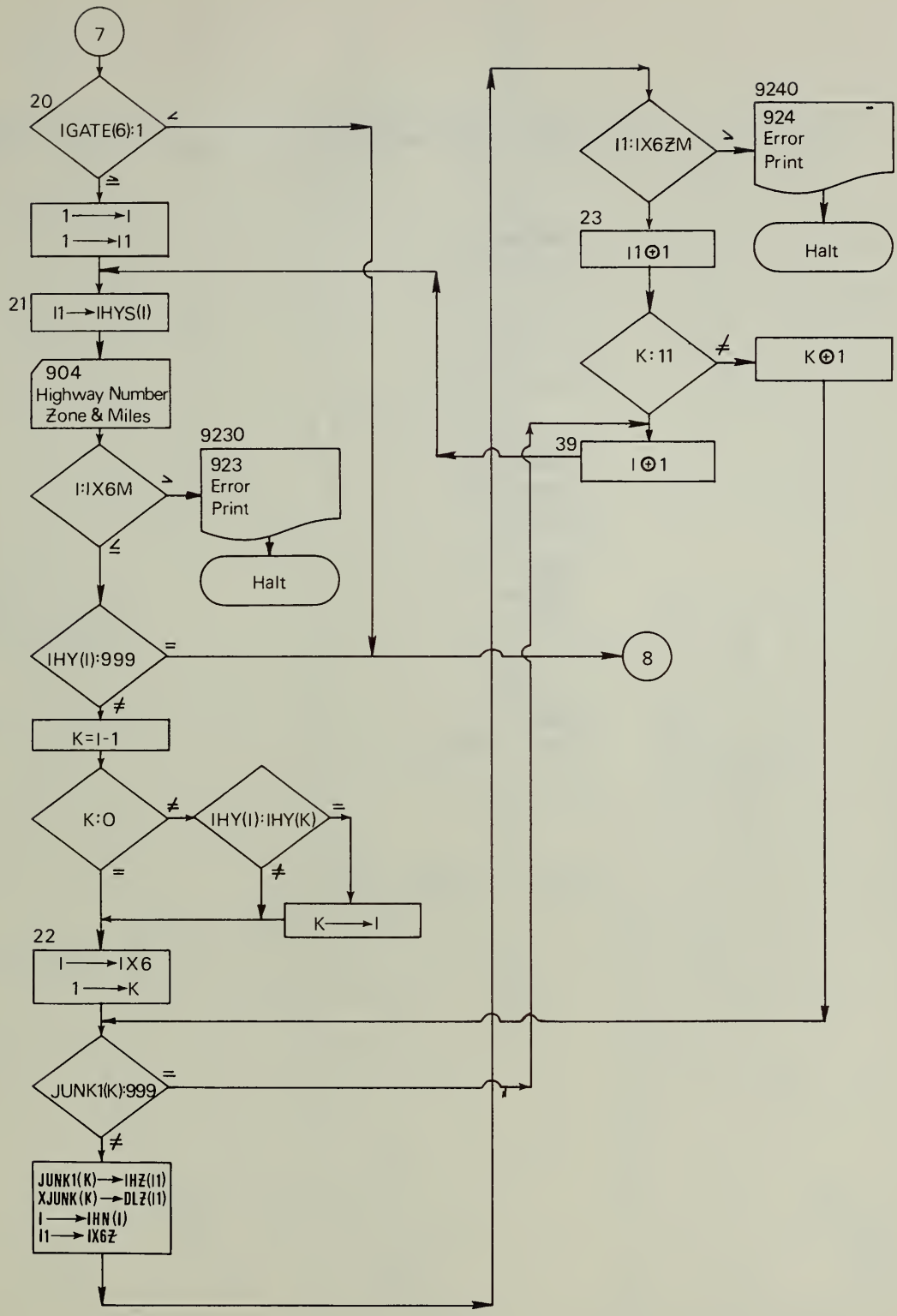

2
905
J,NHØL
1→IHØL
909
ICLR,ISDAY,
D Week
900
MØN
901
IDM
0 →K
1 →I
NHØL(I):999
≠
45
K⊕1
I:12
≠
=
I⊕1
=
Impossible path
65
932
NHØL
MULT = 5 −
ISDAY
MULT:0
<
0 →MULT
≥
MULT→NMULT
3

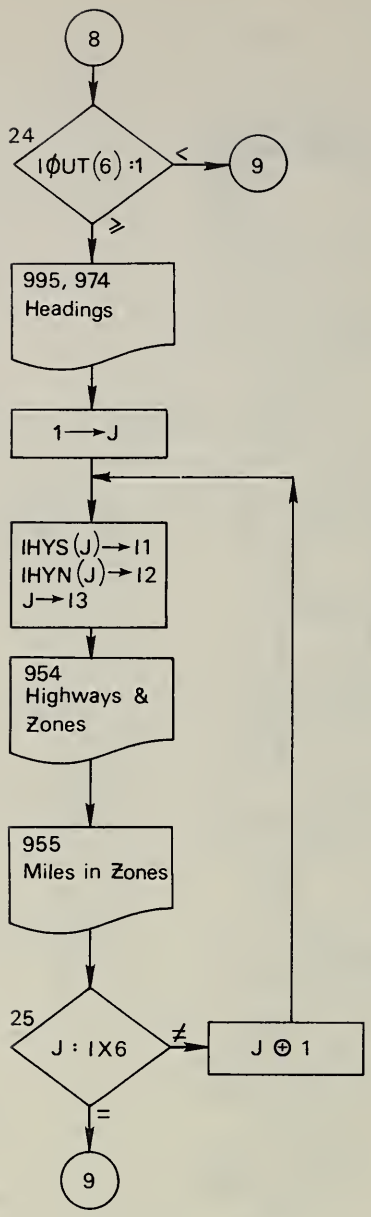

3
1102
0 → I1
1 → IØUT(1)
900
HØL(1),=1,36
3A
1
901
IGATE(1),I=1,36
IØUT(1):1
≥
950
HØL(1)
IGATE
<
2
IGATE(2):1
≥
90
IØUT(1),I=1,36
<
3
IØUT(2):1
≥
950
HØL (2)
IØUT
<
46
IGATE(3):1
≥
906
I, NF, CF
906
I, NE1, CE1
906
I, NE2, CE2
906
I, NE3, CE3
906
I, NL, CL
<
47
IØUT(3):1
≥
974, 963, 975
928
Personnel
4
<

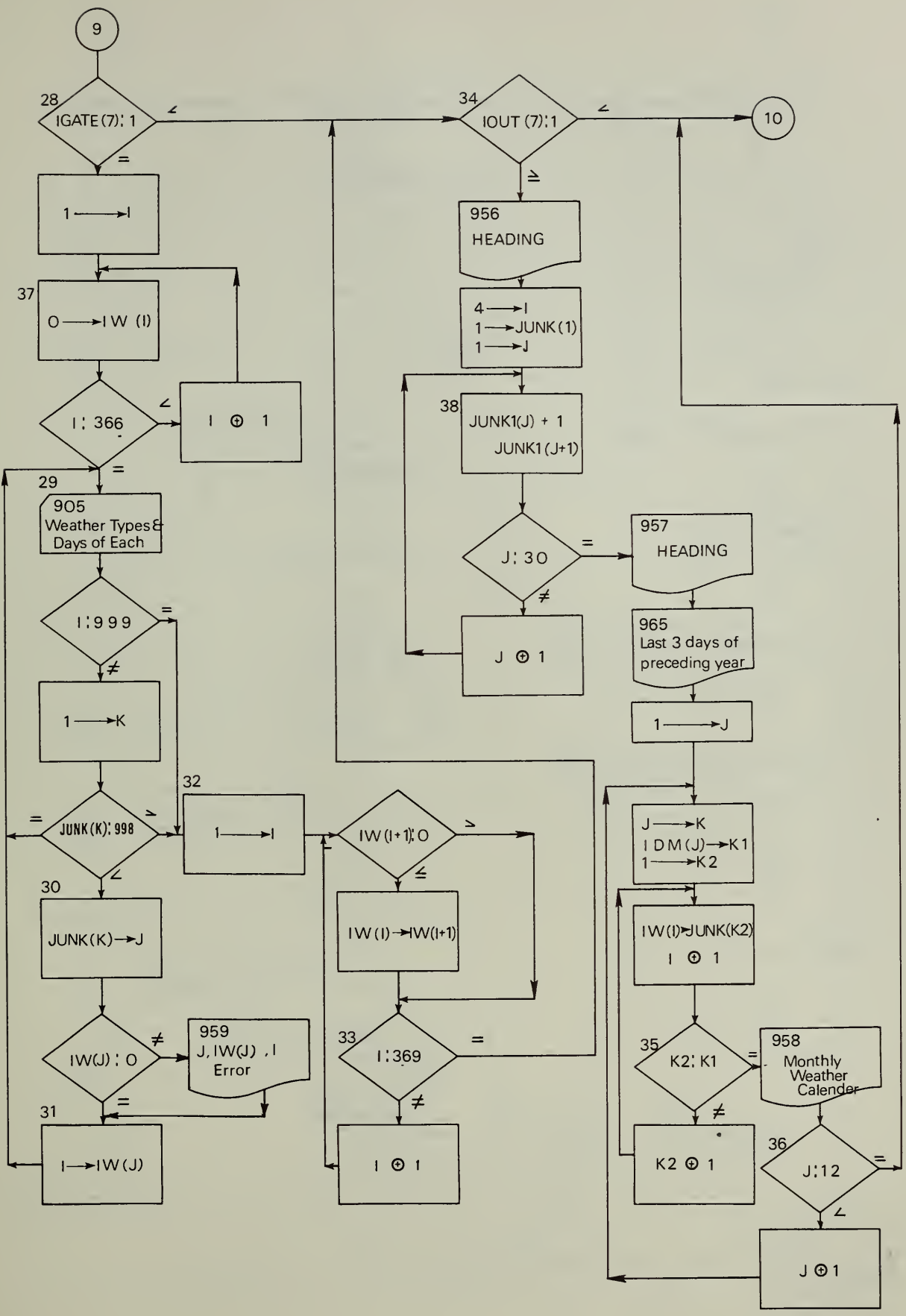

4
48
IGATE(4):1
≥
<
1 → I
906
IEQI(I)
IEQNØ(I)
EQC(I)
IEQI(I)
:
999
=
≠
I → I x 4
52
I:IX4M
<
=
I ⊕ 1
929
Error
Print
Halt
49
IØUT(4):1
≥
950
HØL(4)
1 → I
926
I,IEQI(I)
IEQNØ(I),EQC(I)
50
I:IX4
≠
I ⊕ 1
=
5

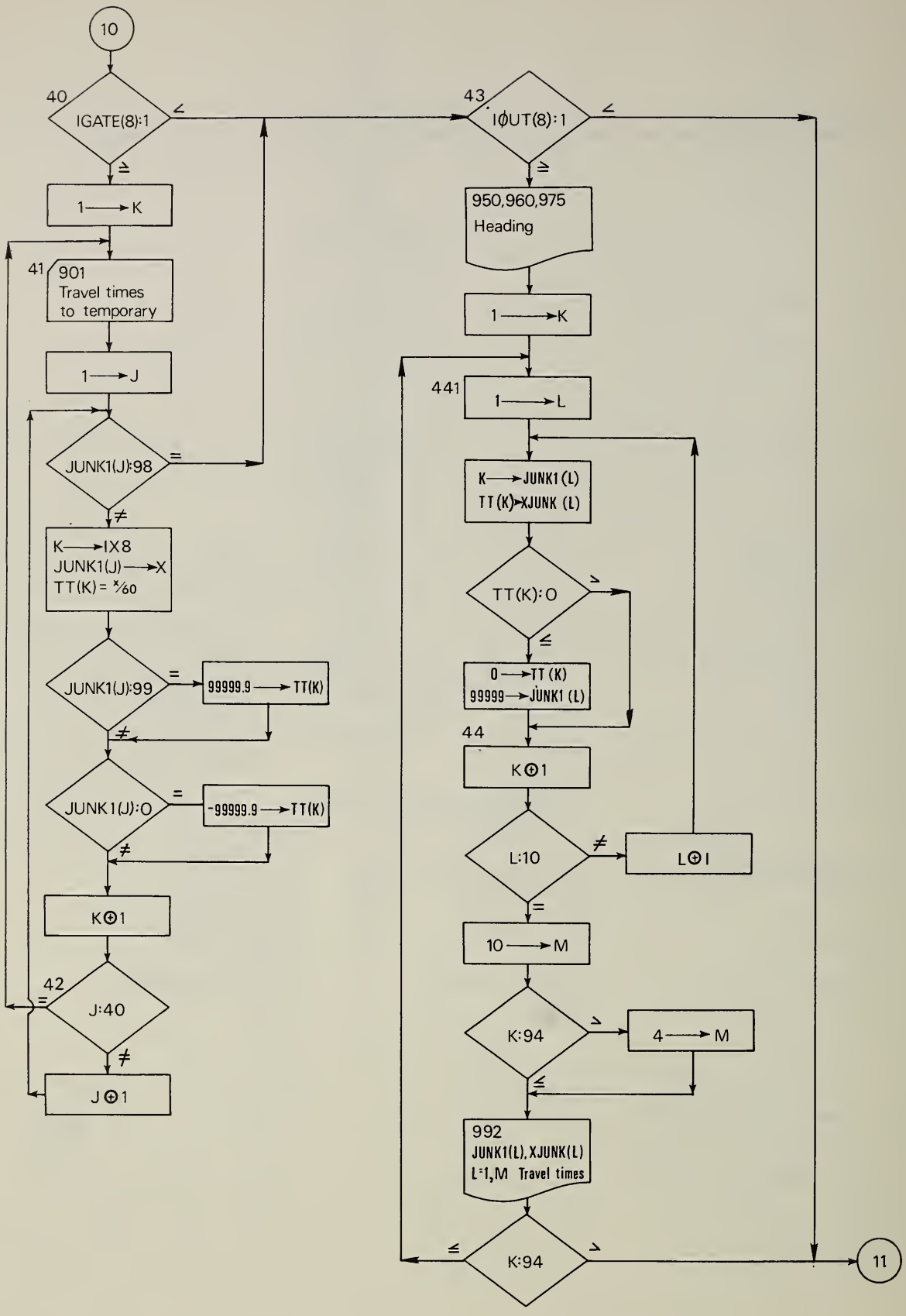

5
4
IGATE(5):1
<
7
≥
IΦUT(5):1
=
933
Heading
≠
1→I
1→I1
1→I2
5-A
5
902
Job Type (I)
I1→ICRS(I)
ITTYP(I):9999
=
≠
I→IX5
I : IX5M
>
9200
920
Error
Print
Halt
≤
IΦUT(5):1
≥
951
Job Type (I)
952
Heading
<
5-B
6
0→J6
6

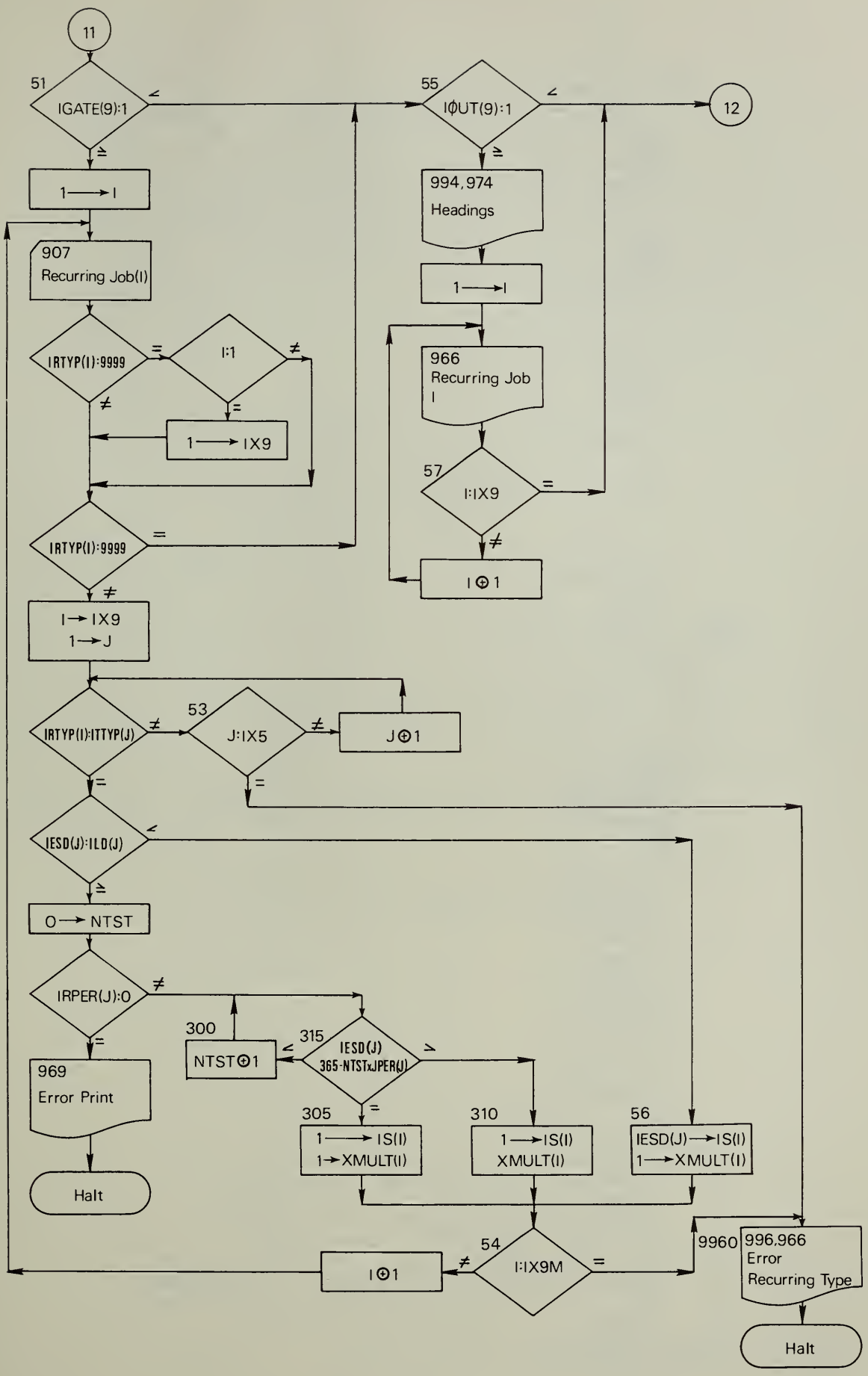

6
903
Basic Crew(I1)
8
I2 → IEQS(I1)
I1 → ICRN(I)
I1 → IX5C
I1:IX5CM
≥
9210
921
Error Print
Halt
I2 → J3
HCST(I1)
2 → J1
JUNK1(J1):97
≥
JUNK1(J1):0
=
≠
I2 → IEQN(I1)
I2 → IX5E
I2:IX5EM
≥
9220
922
Error Print
Halt
≤
1 → I4
I4 → I5
I4⊕1
IEQI(I5):JUNK1(J1)
≠
13
I4:IX4
≠
I5 → IEQ (I2)
JUNK1(J1+1) INØ(I2)
HCST (I1)
I2 ⊕ 1
J2=J1+2
9
J1:16
≠
J1⊕2
=
10
IØUT(5):1
≥
J5=I2-1
953
Basic Crew(I1)
11
I1⊕1
JUNK1(J2):99
=
I⊕1
5A
≠
JSIG:1
=
5B
14
≠
1 → J1
JUNK2(J1) → JUNK1(J1)
12
J1:14
≠
J1⊕1
=
1 → JSIG
9370
937
JUNK1
Halt

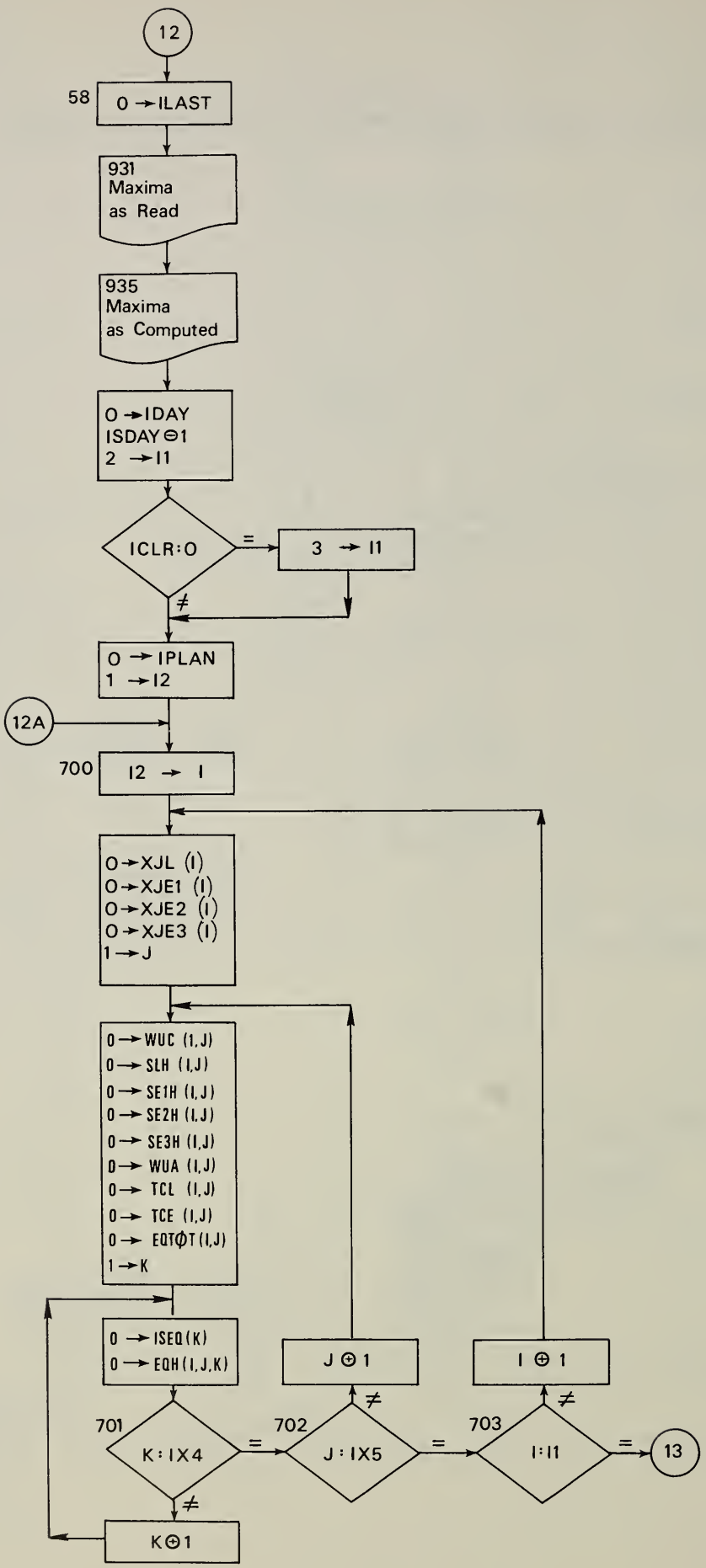

7
20
IGATE(6):1
≤
≥
1 → I
1 → I1
21
I1 → IHYS(I)
904
Highway Number
Zone & Miles
I:IX6M
>
9230
923
Error
Print
Halt
≤
IHY(I):999
=
8
≠
K=I-1
K:0
≠
IHY(I):IHY(K)
=
≠
=
K → I
22
I → IX6
1 → K
JUNK1(K):999
=
≠
JUNK1(K) → IHZ(I1)
XJUNK(K) → DLZ(I1)
I → IHN(I)
I1 → IX6Z
I1:IX6ZM
>
9240
924
Error
Print
Halt
23
I1⊕1
K:11
≠
K⊕1
39
I⊕1

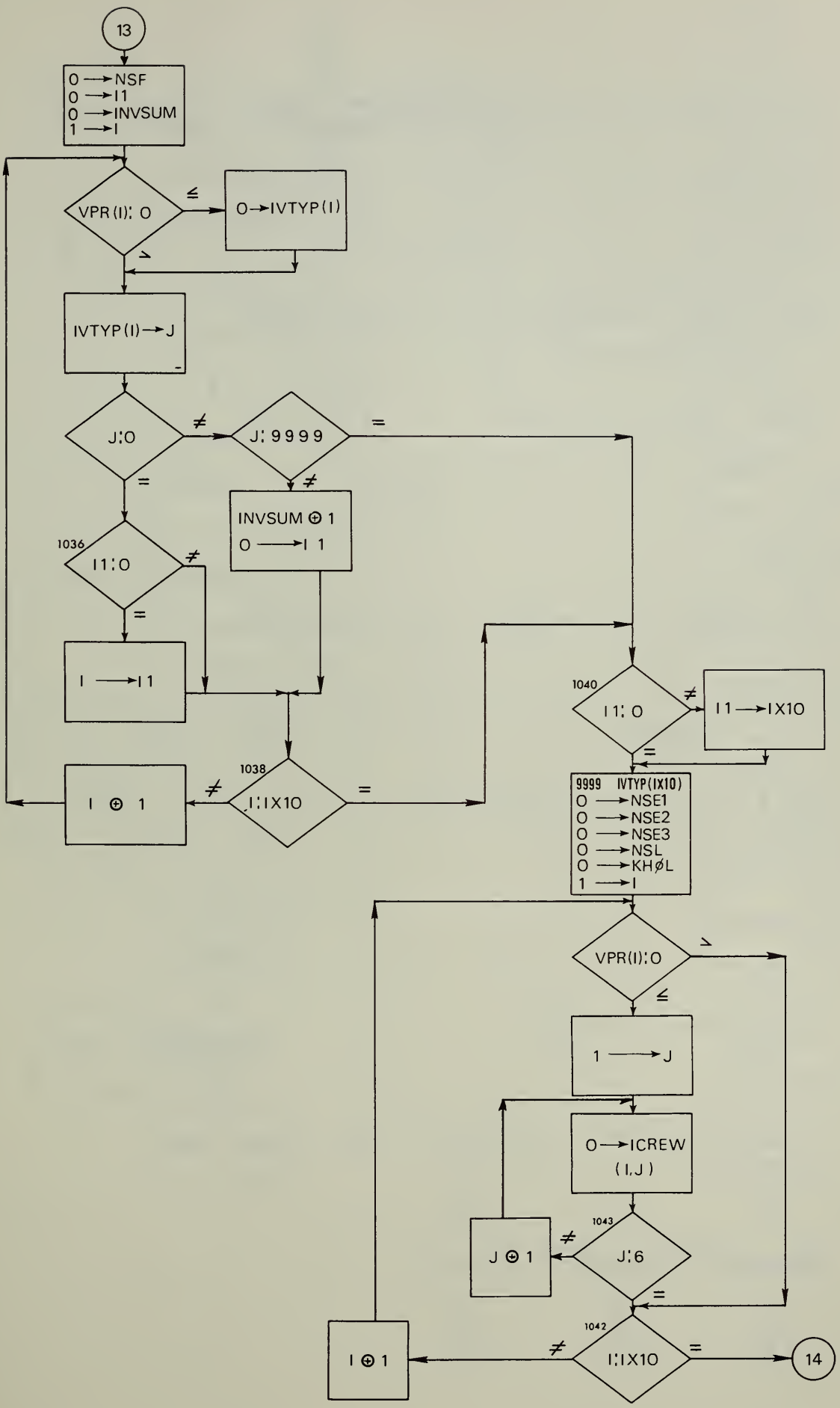

8
24
IØUT(6) :1
<
9
≥
995, 974
Headings
1 → J
IHYS(J) → I1
IHYN(J) → I2
J → I3
954
Highways &
Zones
955
Miles in Zones
25
J : IX6
≠
J ⊕ 1
=
9

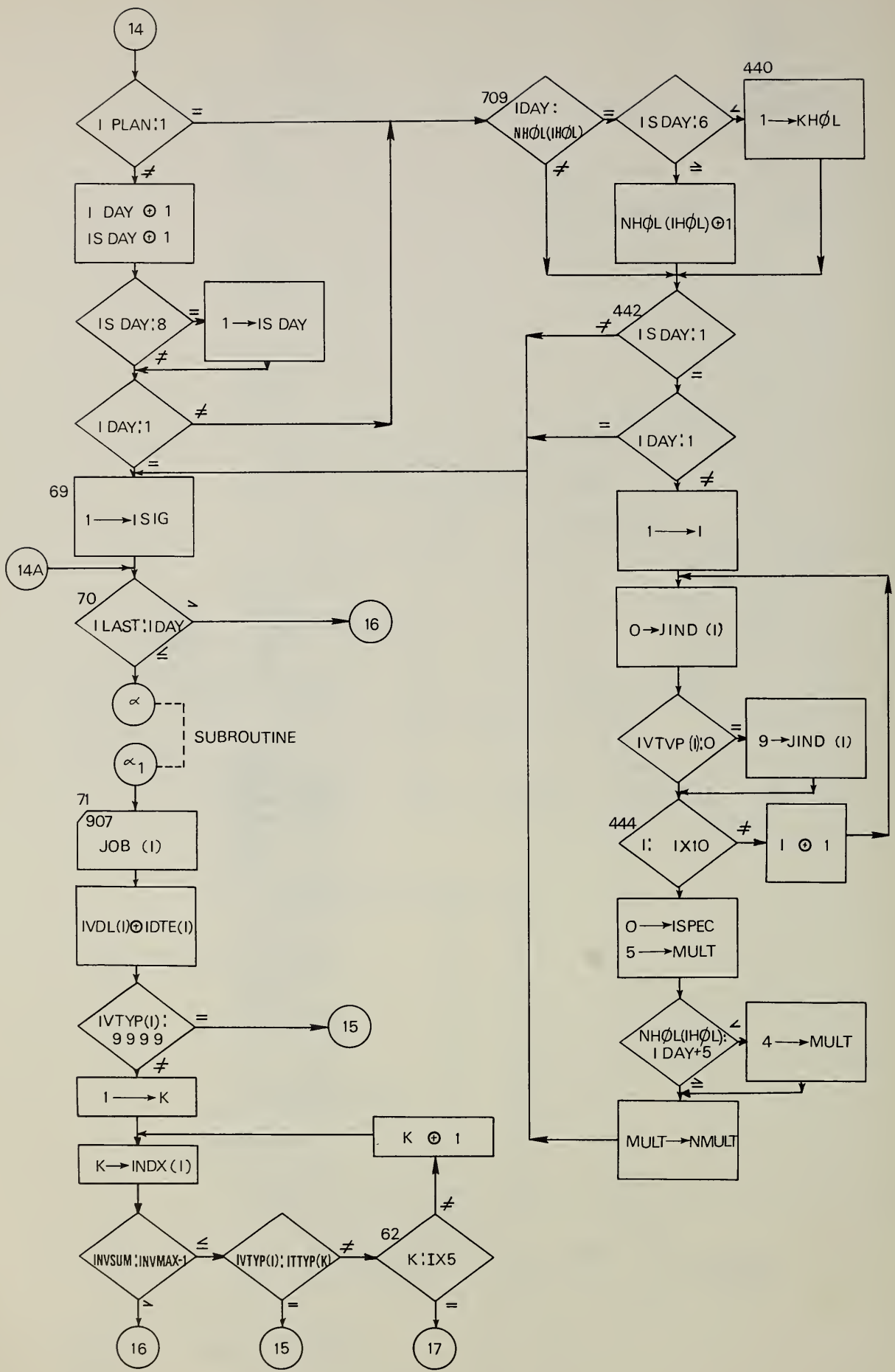

9
28
IGATE(7) : 1
=
1 → I
37
0 → IW (I)
I : 366
I ⊕ 1
=
29
905
Weather Types &
Days of Each
I : 999
=
≠
1 → K
JUNK(K) : 998
=
>
<
30
JUNK(K) → J
IW(J) : 0
≠
959
J, IW(J) , I
Error
=
31
I → IW(J)
32
1 → I
IW(I+1) : 0
>
≤
IW(I) → IW(I+1)
33
I : 369
=
≠
I ⊕ 1
34
IOUT (7) : 1
<
≥
10
956
HEADING
4 → I
1 → JUNK(1)
1 → J
38
JUNK1(J) + 1
JUNK1(J+1)
J : 30
=
≠
J ⊕ 1
957
HEADING
965
Last 3 days of
preceding year
1 → J
J → K
I D M (J) → K1
1 → K2
IW(I) → JUNK(K2)
I ⊕ 1
35
K2 : K1
=
≠
K2 ⊕ 1
958
Monthly
Weather
Calender
36
J : 12
=
<
J ⊕ 1

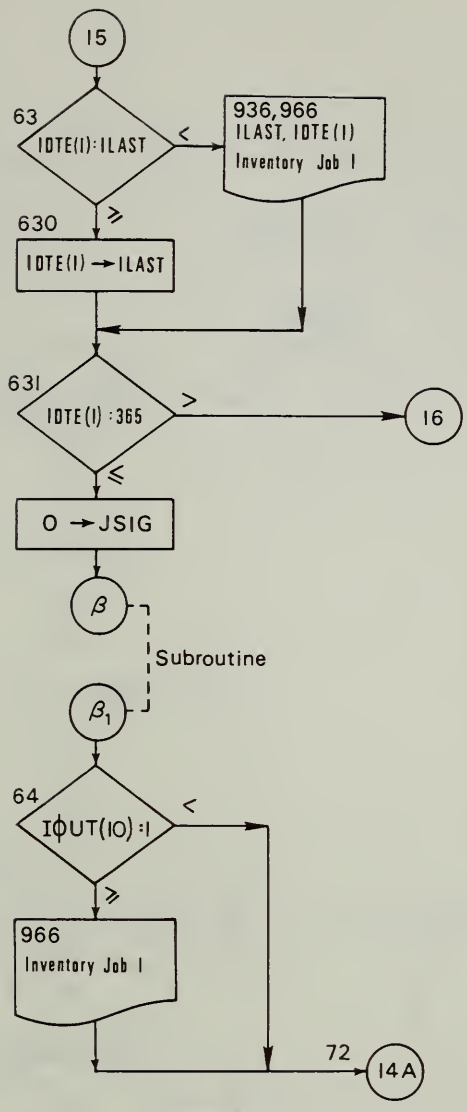

10
40
IGATE(8):1
1 → K
41
901
Travel times
to temporary
1 → J
JUNK1(J):98
K → IX8
JUNK1(J) → X
TT(K) = %0
JUNK1(J):99
99999.9 → TT(K)
JUNK1(J):0
-99999.9 → TT(K)
K⊕1
42
J:40
J⊕1
43
IØUT(8):1
950,960,975
Heading
1 → K
441
1 → L
K → JUNK1(L)
TT(K) → XJUNK(L)
TT(K):0
0 → TT(K)
99999 → JUNK1(L)
44
K⊕1
L:10
L⊕1
10 → M
K:94
4 → M
992
JUNK1(L), XJUNK(L)
L=1,M Travel times
K:94
11

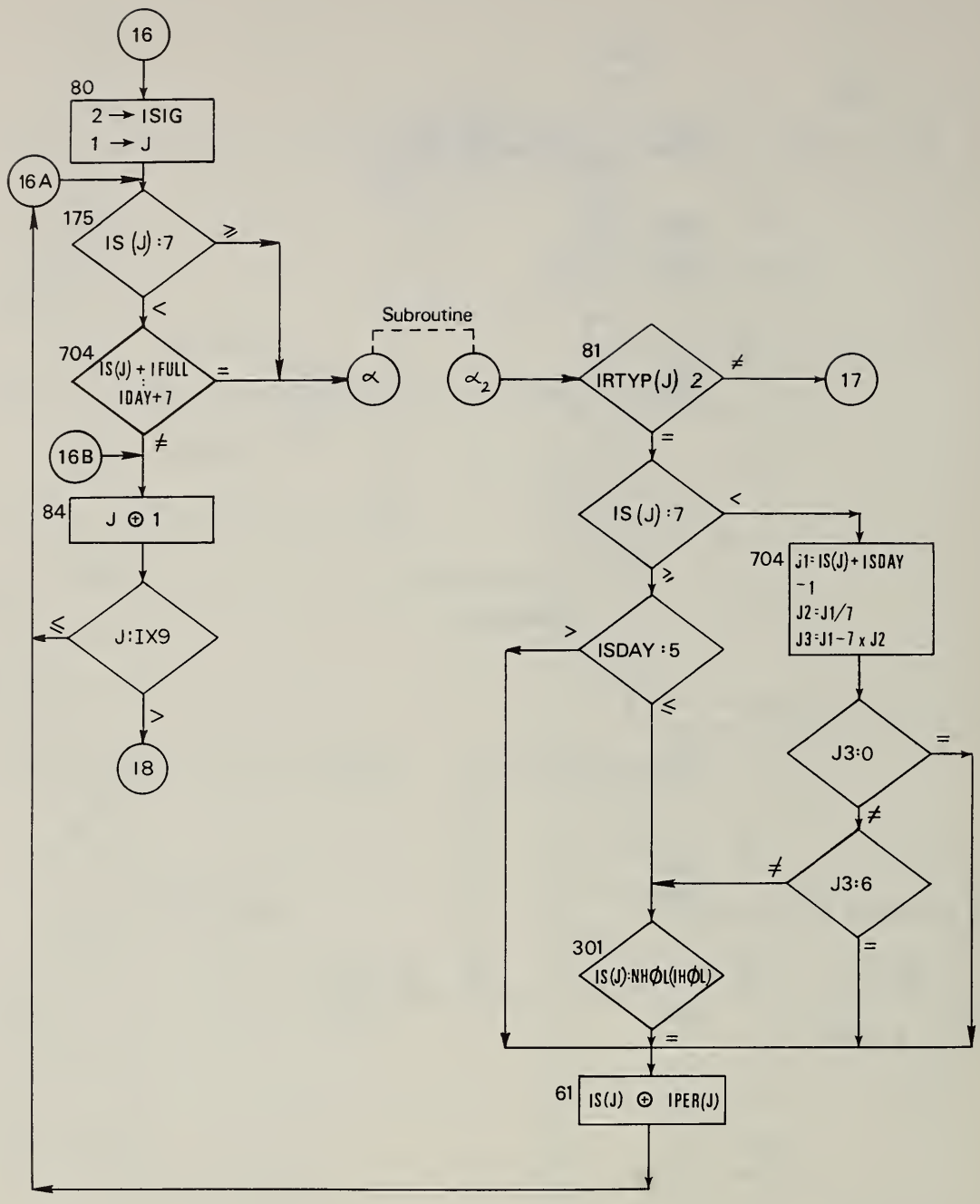

11
51
IGATE(9):1
1 → I
907
Recurring Job(I)
IRTYP(I):9999
I:1
1 → IX9
IRTYP(I):9999
I → IX9
1 → J
IRTYP(I):ITTYP(J)
53
J:IX5
J⊕1
IESD(J):ILD(J)
0 → NTST
IRPER(J):0
969
Error Print
Halt
300
NTST⊕1
315
IESD(J)
365-NTSTxJPER(J)
305
1 → IS(I)
1 → XMULT(I)
310
1 → IS(I)
XMULT(I)
56
IESD(J) → IS(I)
1 → XMULT(I)
54
I:IX9M
I⊕1
55
IΦUT(9):1
12
994,974
Headings
1 → I
966
Recurring Job
I
57
I:IX9
I⊕1
9960
996,966
Error
Recurring Type
Halt

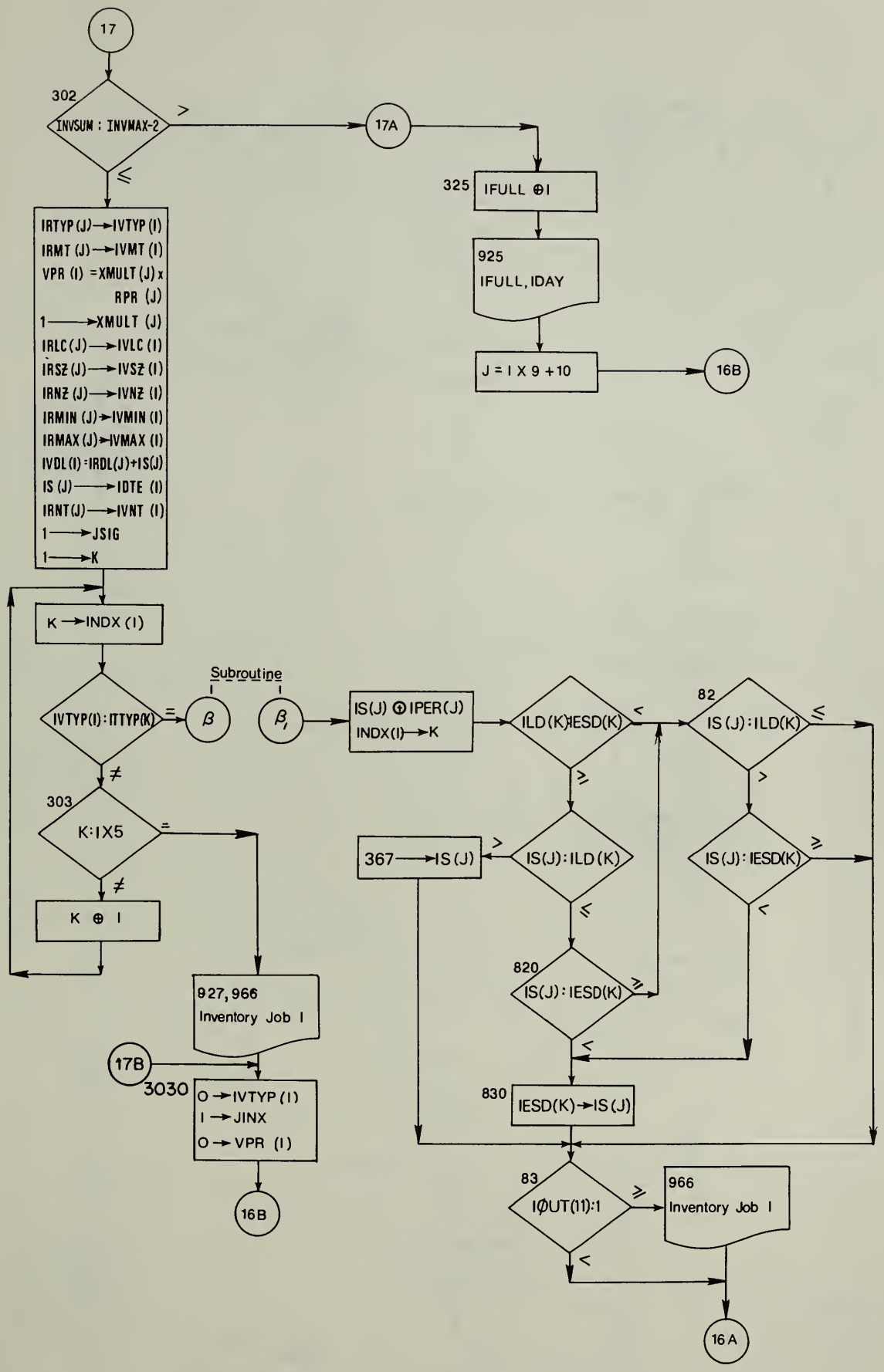

12
58
0 → ILAST
931
Maxima
as Read
935
Maxima
as Computed
0 → IDAY
ISDAY ⊖ 1
2 → I1
ICLR : 0
=
3 → I1
≠
0 → IPLAN
1 → I2
12A
700
I2 → I
0 → XJL (I)
0 → XJE1 (I)
0 → XJE2 (I)
0 → XJE3 (I)
1 → J
0 → WUC (I, J)
0 → SLH (I, J)
0 → SE1H (I, J)
0 → SE2H (I, J)
0 → SE3H (I, J)
0 → WUA (I, J)
0 → TCL (I, J)
0 → TCE (I, J)
0 → EQTΦT (I, J)
1 → K
0 → ISEQ (K)
0 → EQH (I, J, K)
J ⊕ 1
I ⊕ 1
≠
≠
701
K : IX4
=
702
J : IX5
=
703
I : I1
=
13
≠
K ⊕ 1

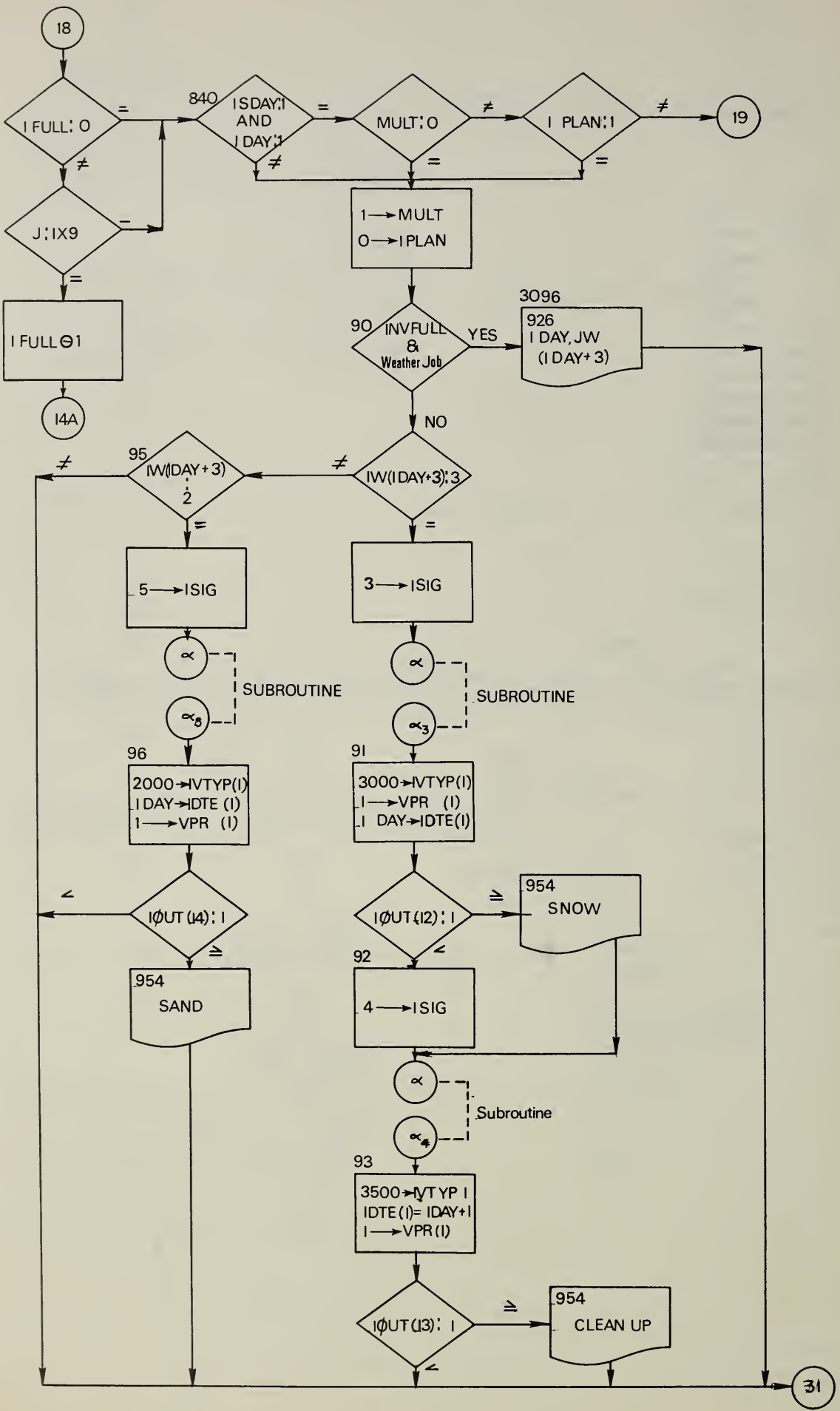

13
0 → NSF
0 → I1
0 → INVSUM
1 → I
VPR(I): 0
≤
0 → IVTYP(I)
>
IVTYP(I) → J
J: 0
≠
J: 9999
=
=
≠
INVSUM ⊕ 1
0 → I 1
1036
I1: 0
≠
=
I → I1
1040
I1: 0
≠
I1 → IX10
=
1038
I: IX10
=
≠
I ⊕ 1
9999 IVTYP(IX10)
0 → NSE1
0 → NSE2
0 → NSE3
0 → NSL
0 → KHØL
1 → I
VPR(I): 0
>
≤
1 → J
0 → ICREW
(I,J)
1043
J: 6
≠
J ⊕ 1
=
1042
I: IX10
≠
=
I ⊕ 1
14

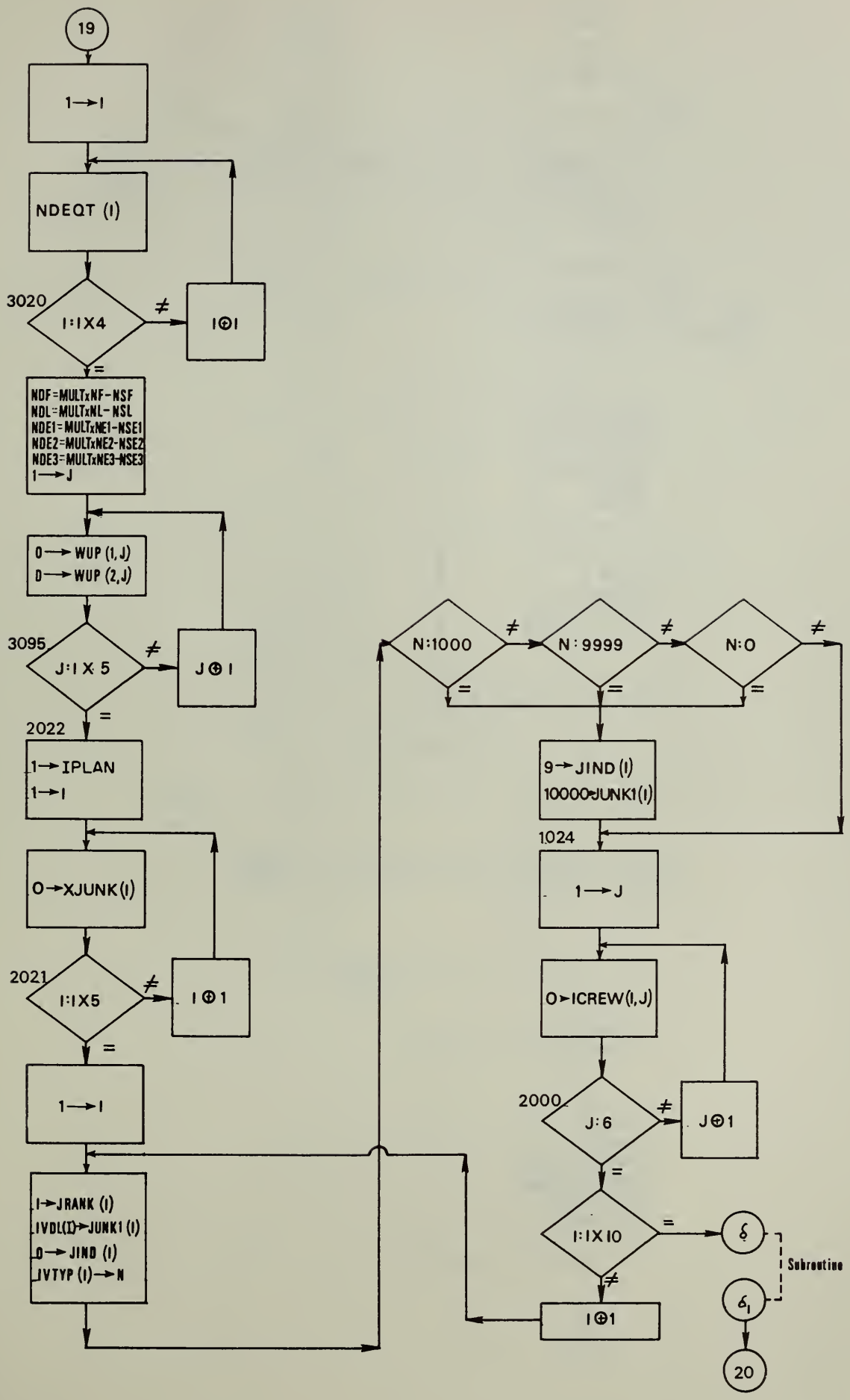

14
I PLAN:1
=
≠
I DAY ⊕ 1
IS DAY ⊕ 1
IS DAY:8
=
1→IS DAY
≠
I DAY:1
≠
=
69
1→ISIG
14A
70
I LAST:IDAY
>
16
≤
∝
SUBROUTINE
∝1
71
907
JOB (I)
IVDL(I)⊕IDTE(I)
IVTYP(I):9999
=
15
≠
1→K
K→INDX(I)
INVSUM:INVMAX-1
≤
IVTYP(I):ITTYP(K)
≠
62
K:IX5
≠
=
=
16
15
17
K ⊕ 1
709
IDAY:NHØL(IHØL)
=
≠
IS DAY:6
≥
<
440
1→KHØL
NHØL(IHØL)⊕1
442
IS DAY:1
≠
=
I DAY:1
=
≠
1→I
O→JIND (I)
IVTVP (I):O
=
9→JIND (I)
444
I:IX10
≠
I ⊕ 1
O→ISPEC
5→MULT
NHØL(IHØL):I DAY+5
<
≥
4→MULT
MULT→NMULT

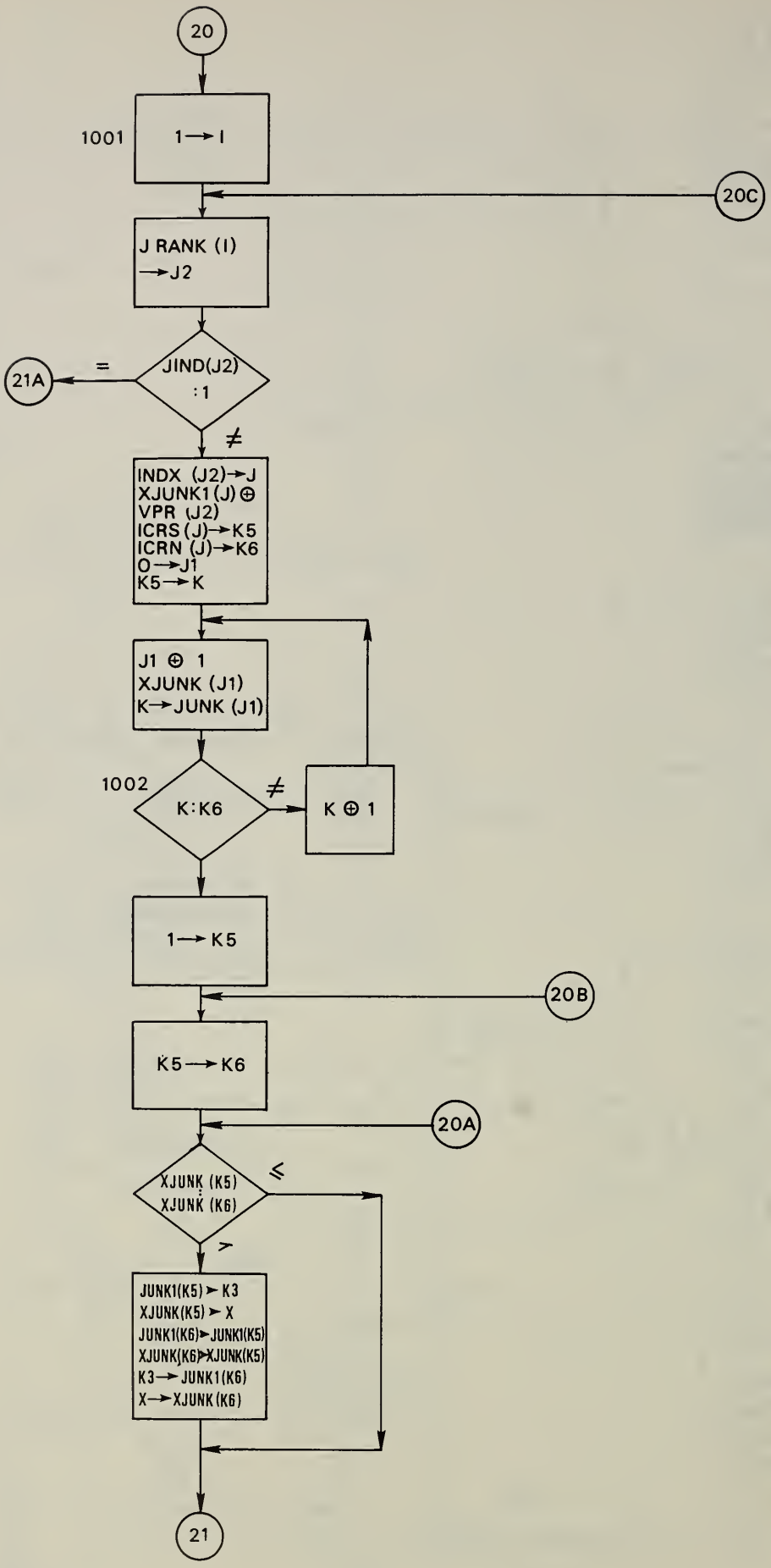

15
63
IDTE(I):ILAST
<
936,966
ILAST, IDTE(I)
Inventory Job I
≥
630
IDTE(I) → ILAST
631
IDTE(I):365
>
16
≤
0 → JSIG
β
Subroutine
β1
64
IΦUT(10):1
<
≥
966
Inventory Job I
72
14A

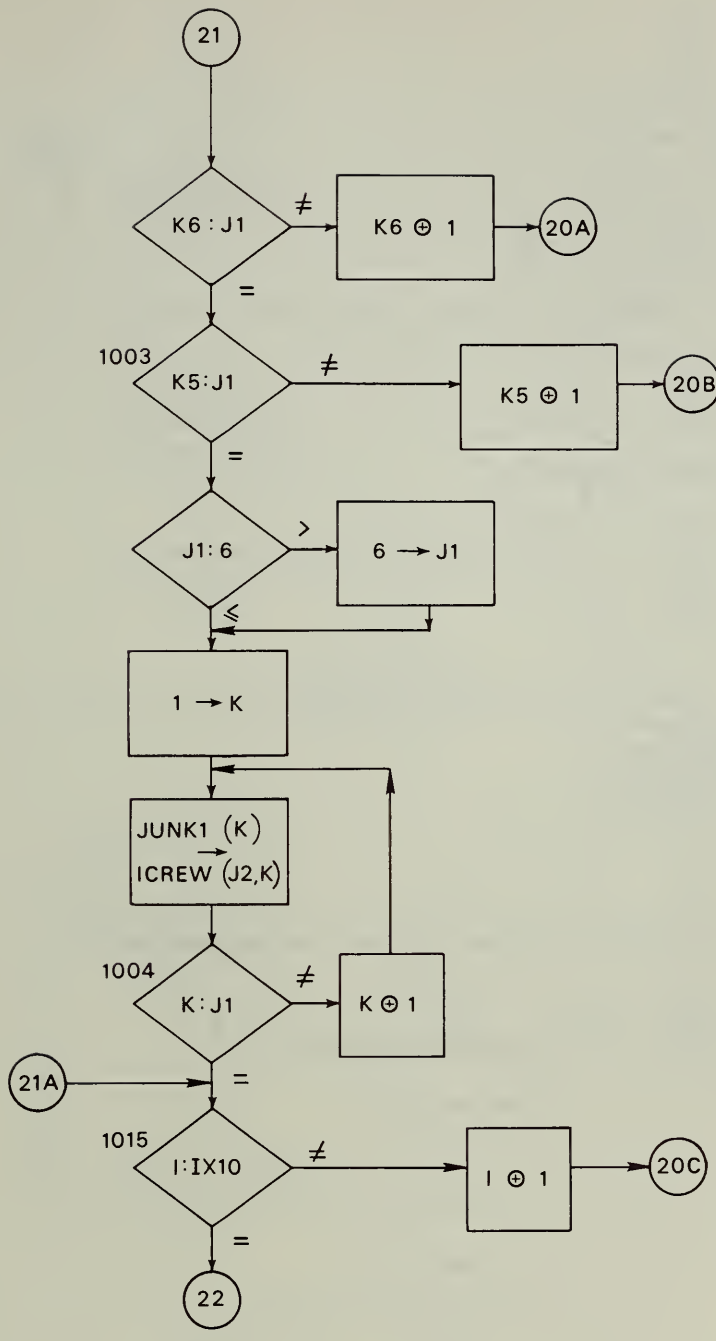

16
80
2 → ISIG
1 → J
16A
175
IS (J) : 7
≥
<
704
IS(J) + IFULL
IDAY+7
=
≠
16B
84
J ⊕ 1
J : IX9
≤
>
18
Subroutine
∝
∝2
81
IRTYP(J) 2
≠
=
17
IS (J) : 7
<
≥
704
J1 = IS(J) + ISDAY
−1
J2 = J1/7
J3 = J1 − 7 x J2
ISDAY : 5
>
≤
J3 : 0
=
≠
J3 : 6
≠
=
301
IS(J) : NHØL(IHØL)
=
61
IS(J) ⊕ IPER(J)

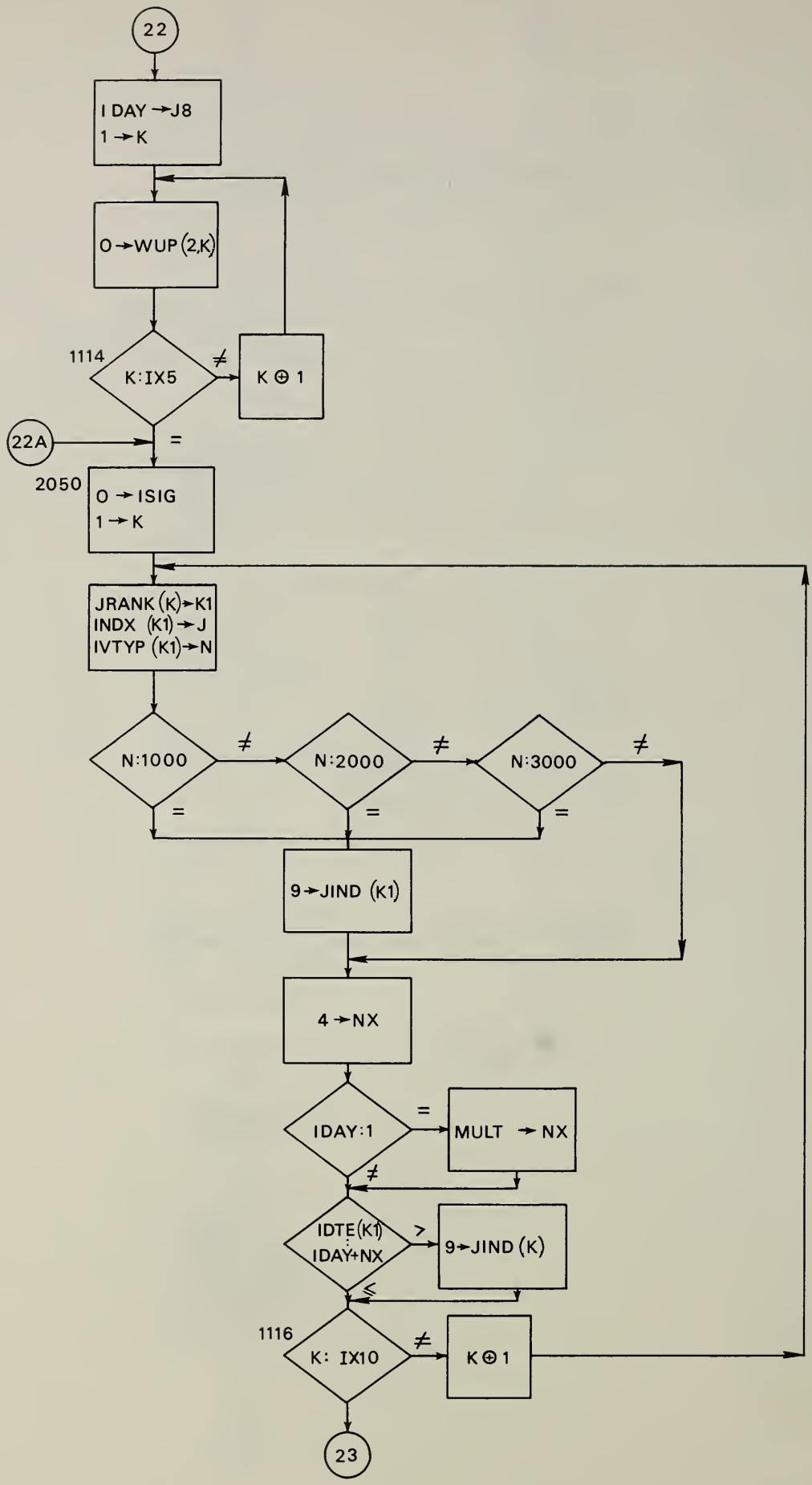

17
302
INVSUM : INVMAX-2
>
17A
325
IFULL ⊕1
925
IFULL, IDAY
J = I X 9 +10
16B
≤
IRTYP (J) → IVTYP (I)
IRMT (J) → IVMT (I)
VPR (I) = XMULT (J) x RPR (J)
1 → XMULT (J)
IRLC (J) → IVLC (I)
IRSZ (J) → IVSZ (I)
IRNZ (J) → IVNZ (I)
IRMIN (J) → IVMIN (I)
IRMAX (J) → IVMAX (I)
IVDL (I) = IRDL (J) + IS (J)
IS (J) → IDTE (I)
IRNT (J) → IVNT (I)
1 → JSIG
1 → K
K → INDX (I)
Subroutine
IVTYP (I) : ITTYP (K)
=
β
β'
IS (J) ⊕ IPER (J)
INDX (I) → K
ILD (K) : IESD (K)
<
82
IS (J) : ILD (K)
≤
≥
>
≠
303
K : I X 5
=
≠
K ⊕ 1
367 → IS (J)
>
IS (J) : ILD (K)
IS (J) : IESD (K)
≥
≤
<
820
IS (J) : IESD (K)
≥
<
927, 966
Inventory Job I
17B
3030
0 → IVTYP (I)
I → JINX
0 → VPR (I)
16B
830
IESD (K) → IS (J)
83
IØUT (11) : 1
≥
966
Inventory Job I
<
16A

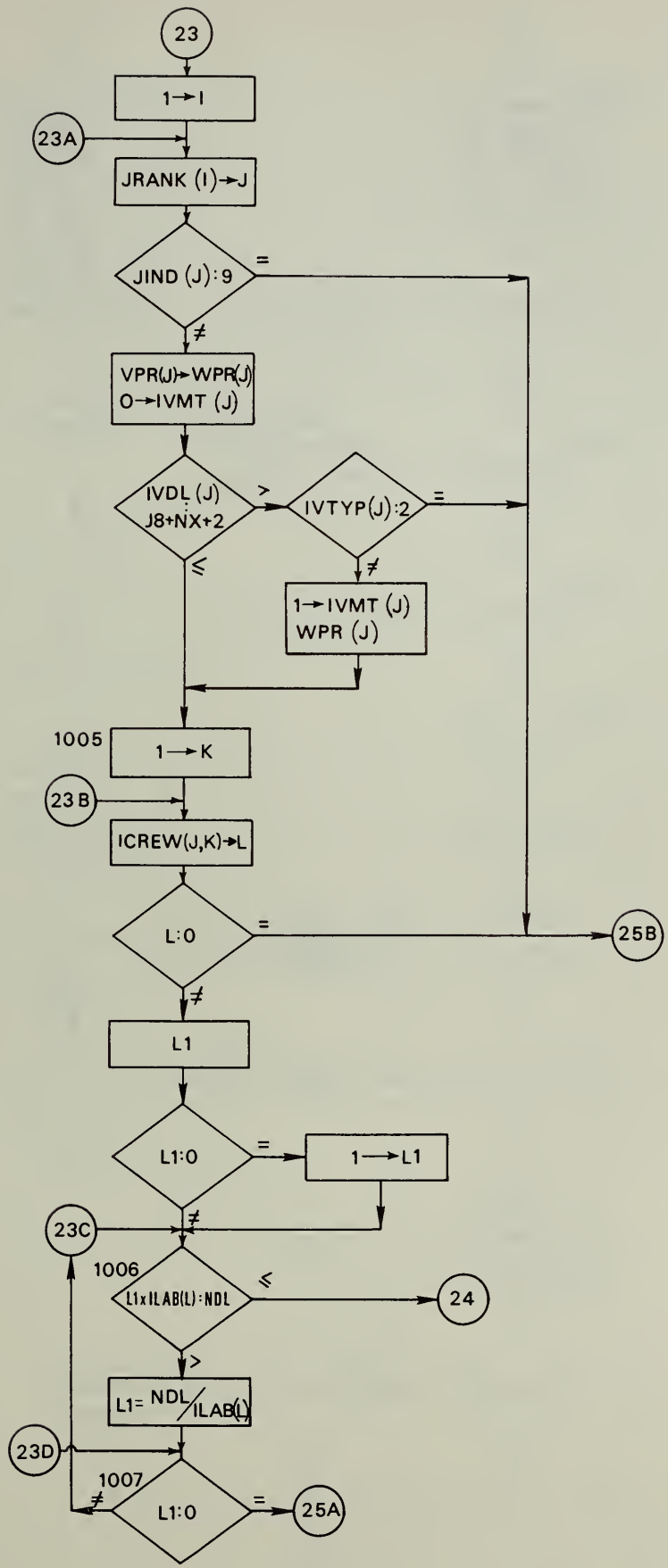

18
I FULL : 0
=
≠
840
I SDAY : 1
AND
I DAY : 1
=
≠
MULT : 0
≠
=
I PLAN : 1
≠
=
19
J : IX9
=
1 → MULT
0 → I PLAN
I FULL ⊖ 1
14A
90
INVFULL
&
Weather Job
YES
3096
926
I DAY, JW
(I DAY + 3)
NO
95
IW(IDAY + 3)
2
≠
=
IW(I DAY+3) : 3
≠
=
5 → ISIG
3 → ISIG
∝
∝5
SUBROUTINE
∝
∝3
SUBROUTINE
96
2000 → IVTYP(I)
I DAY → IDTE (I)
1 → VPR (I)
91
3000 → IVTYP(I)
1 → VPR (I)
I DAY → IDTE(I)
IØUT (14) : 1
≠
≧
954
SAND
IØUT (12) : 1
≧
≠
954
SNOW
92
4 → ISIG
∝
∝4
Subroutine
93
3500 → IVTYP I
IDTE (I) = IDAY+1
1 → VPR (I)
IØUT (13) : 1
≧
≠
954
CLEAN UP
31

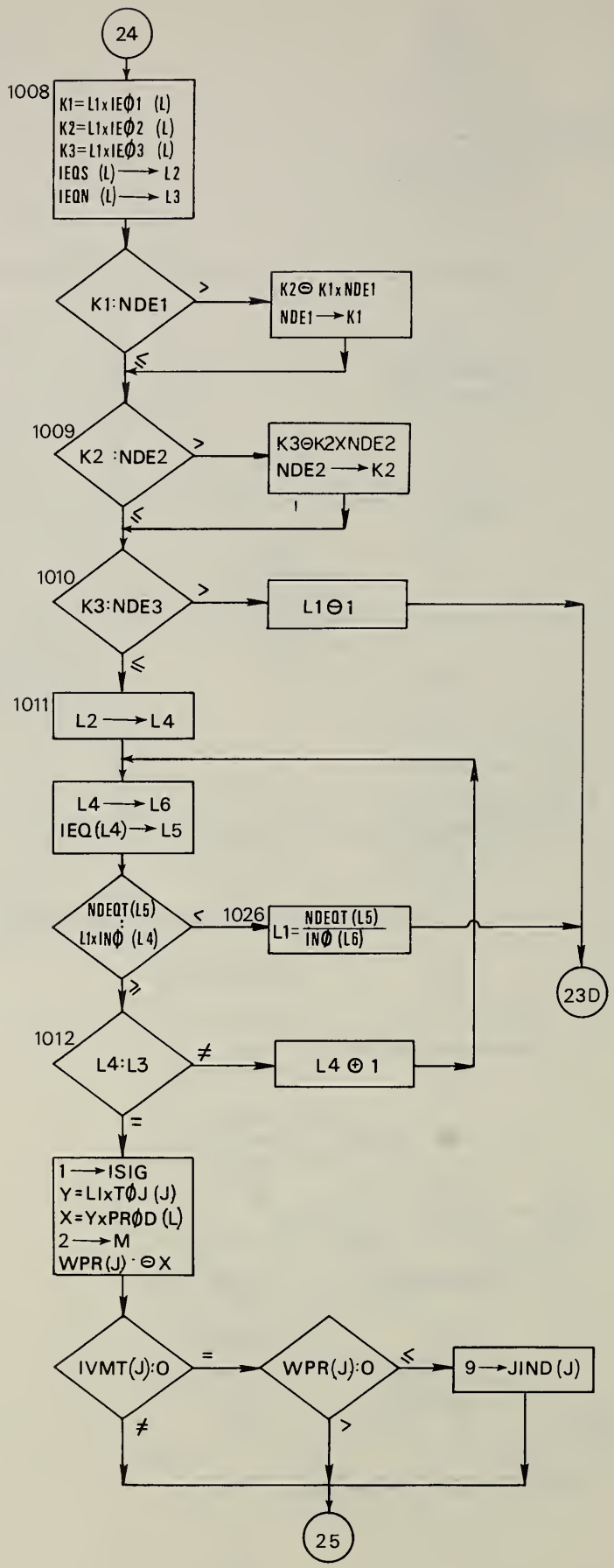

19
1→I
NDEQT (I)
3020
I:IX4
≠
I⊕I
=
NDF=MULTxNF-NSF
NDL=MULTxNL-NSL
NDE1=MULTxNE1-NSE1
NDE2=MULTxNE2-NSE2
NDE3=MULTxNE3-NSE3
1→J
0→WUP (1,J)
0→WUP (2,J)
3095
J:IX5
≠
J⊕I
=
2022
1→IPLAN
1→I
0→XJUNK(I)
2021
I:IX5
≠
I⊕1
=
1→I
I→JRANK (I)
IVDL(I)→JUNK1 (I)
0→JIND (I)
JVTYP (I)→N
N:1000
≠
N:9999
≠
N:0
≠
=
=
=
9→JIND (I)
10000→JUNK1(I)
1024
1→J
0→ICREW(I,J)
2000
J:6
≠
J⊕1
=
I:IX10
=
6
Subroutine
≠
I⊕1
6₁
20

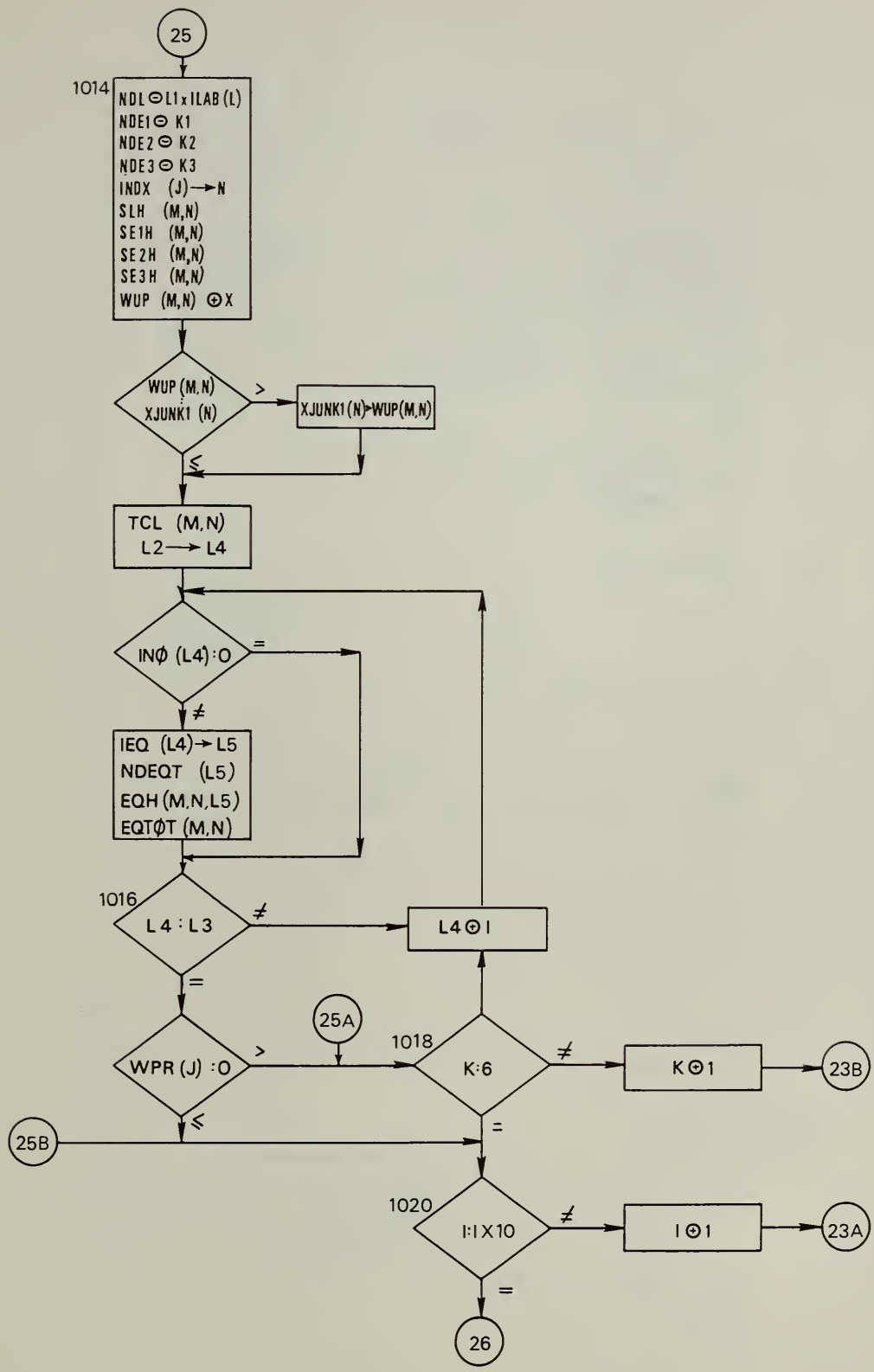

20
1001
1 → I
20C
J RANK (I)
→ J2
21A
=
JIND(J2)
: 1
≠
INDX (J2) → J
XJUNK1 (J) ⊕
VPR (J2)
ICRS (J) → K5
ICRN (J) → K6
0 → J1
K5 → K
J1 ⊕ 1
XJUNK (J1)
K → JUNK (J1)
1002
K : K6
≠
K ⊕ 1
1 → K5
20B
K5 → K6
20A
XJUNK (K5)
XJUNK (K6)
≤
>
JUNK1(K5) → K3
XJUNK(K5) → X
JUNK1(K6) → JUNK1(K5)
XJUNK(K6) → XJUNK(K5)
K3 → JUNK1(K6)
X → XJUNK(K6)
21

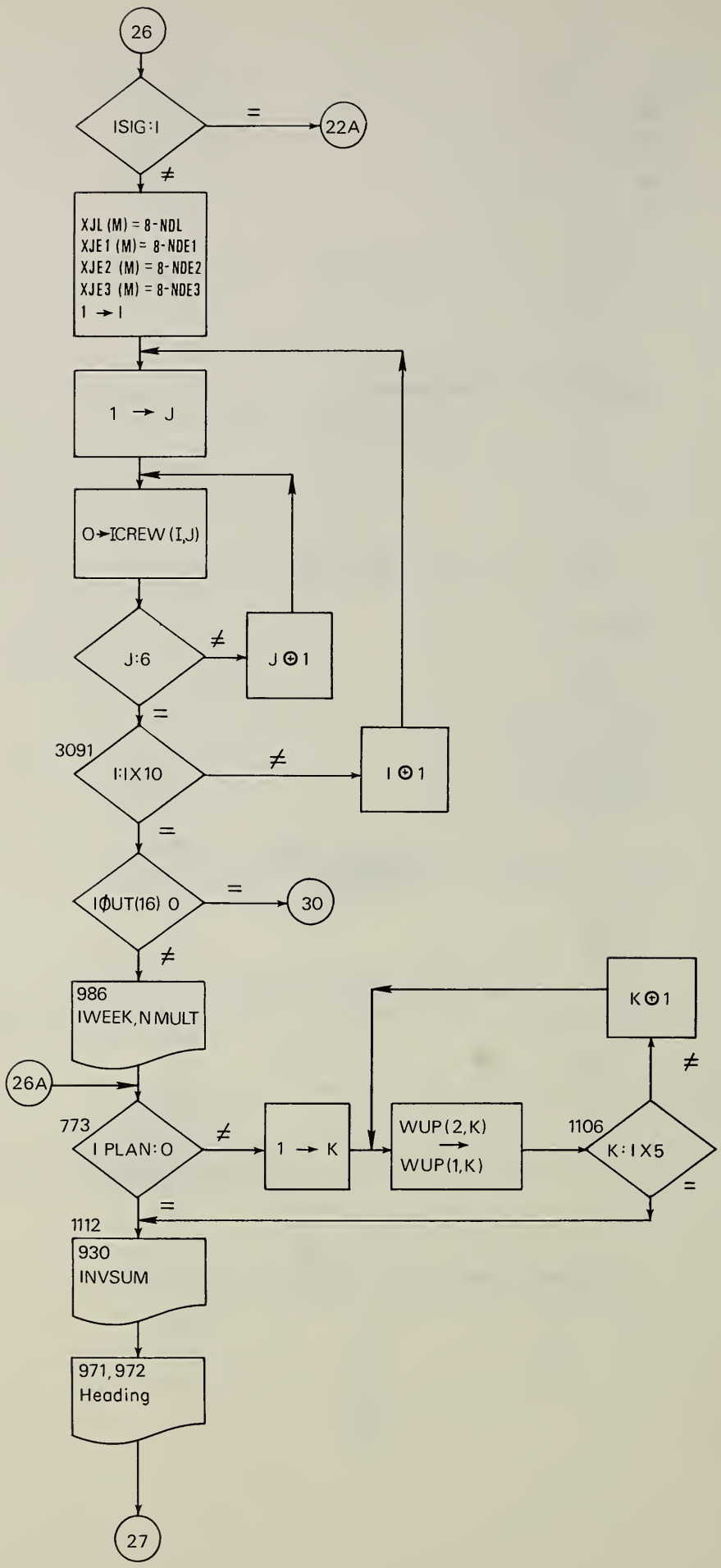

21
K6 : J1
≠
K6 ⊕ 1
20A
=
1003
K5:J1
≠
K5 ⊕ 1
20B
=
J1: 6
>
6 → J1
≤
1 → K
JUNK1 (K)
→
ICREW (J2,K)
1004
K:J1
≠
K ⊕ 1
21A
=
1015
I:IX10
≠
I ⊕ 1
20C
=
22

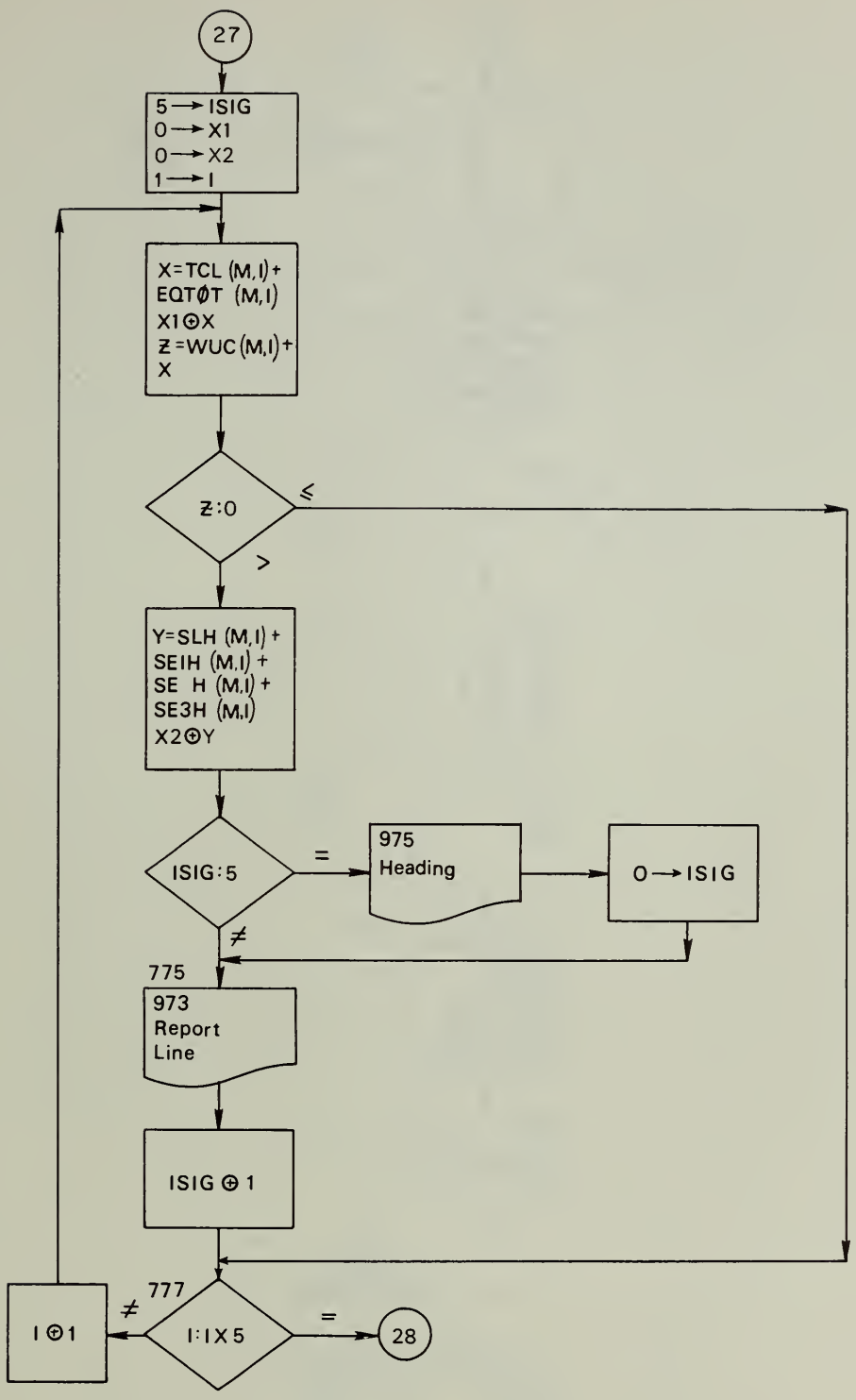

22
I DAY → J8
1 → K
0 → WUP (2,K)
1114
K:IX5
≠
K ⊕ 1
22A
=
2050
0 → ISIG
1 → K
JRANK (K) → K1
INDX (K1) → J
IVTYP (K1) → N
N:1000
≠
N:2000
≠
N:3000
≠
=
=
=
9 → JIND (K1)
4 → NX
IDAY:1
=
MULT → NX
≠
IDTE(K1)
IDAY+NX
>
9 → JIND (K)
≤
1116
K: IX10
≠
K ⊕ 1
23

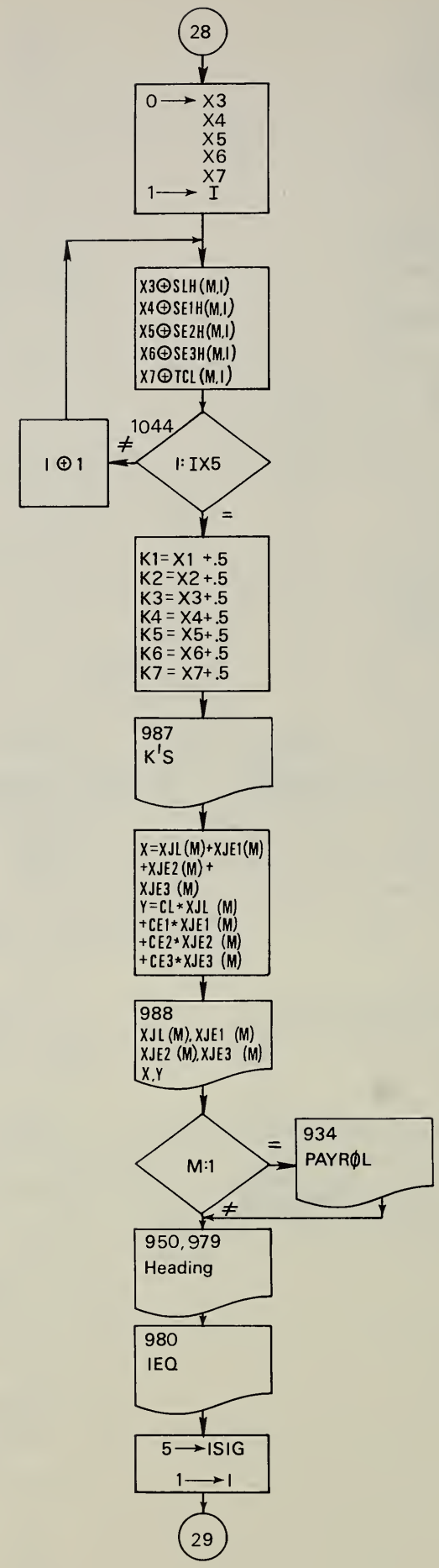

23
1→I
23A
JRANK (I)→J
JIND (J):9
=
≠
VPR(J)→WPR(J)
0→IVMT (J)
IVDL (J)
J8+NX+2
>
IVTYP(J):2
=
≤
≠
1→IVMT (J)
WPR (J)
1005
1→K
23B
ICREW(J,K)→L
L:0
=
25B
≠
L1
L1:0
=
1→L1
23C
≠
1006
L1xILAB(L):NDL
≤
24
>
L1= NDL/ILAB(L)
23D
1007
≠
L1:0
=
25A

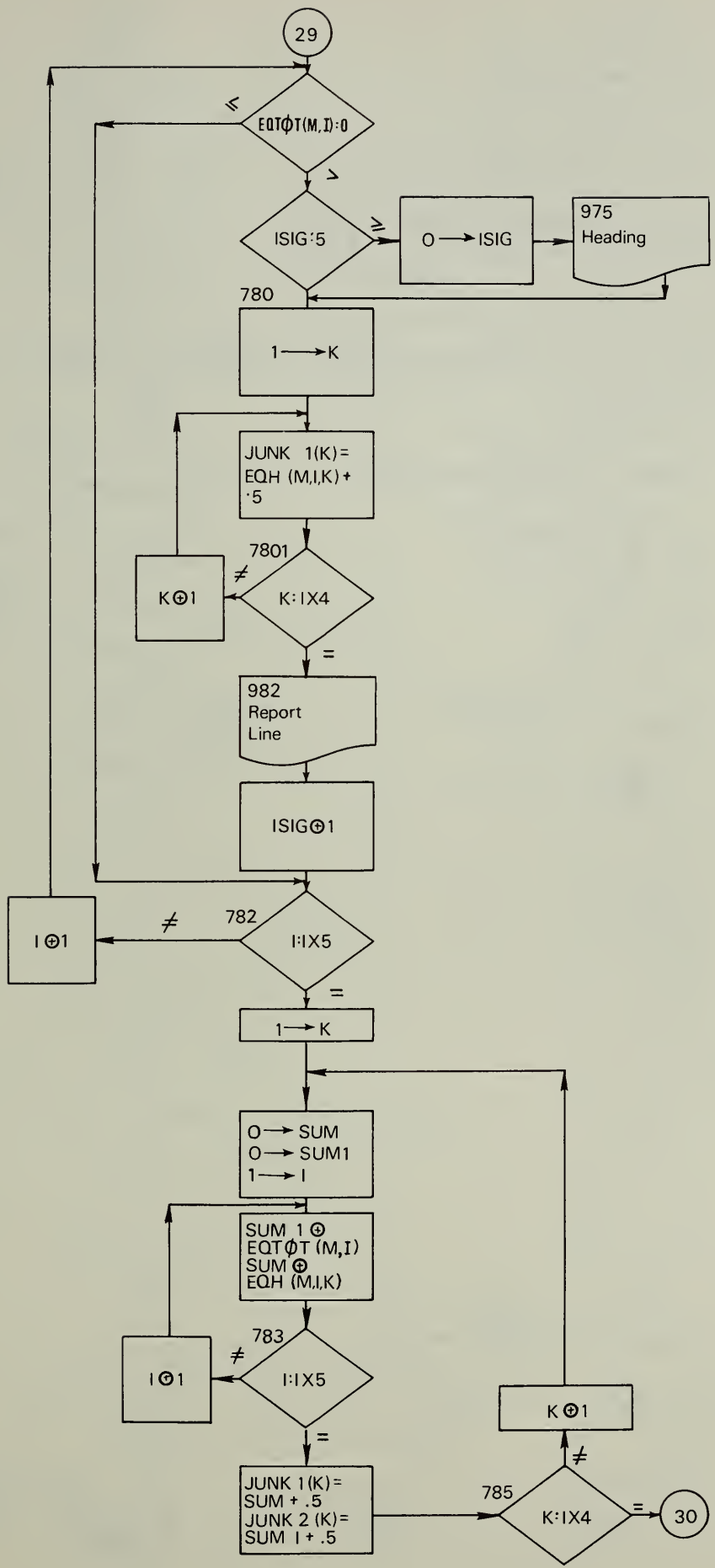

24
1008
K1=L1xIEØ1 (L)
K2=L1xIEØ2 (L)
K3=L1xIEØ3 (L)
IEQS (L) → L2
IEQN (L) → L3
K1:NDE1
>
K2⊖K1xNDE1
NDE1 → K1
≤
1009
K2 :NDE2
>
K3⊖K2XNDE2
NDE2 → K2
≤
1010
K3:NDE3
>
L1⊖1
≤
1011
L2 → L4
L4 → L6
IEQ(L4) → L5
NDEQT(L5)
L1xINØ (L4)
<
1026
L1= NDEQT(L5) / INØ (L6)
23D
≥
1012
L4:L3
≠
L4 ⊕ 1
=
1 → ISIG
Y=L1xTØJ (J)
X=YxPRØD (L)
2 → M
WPR(J) ⊖X
IVMT(J):0
=
WPR(J):0
≤
9 → JIND (J)
≠
>
25

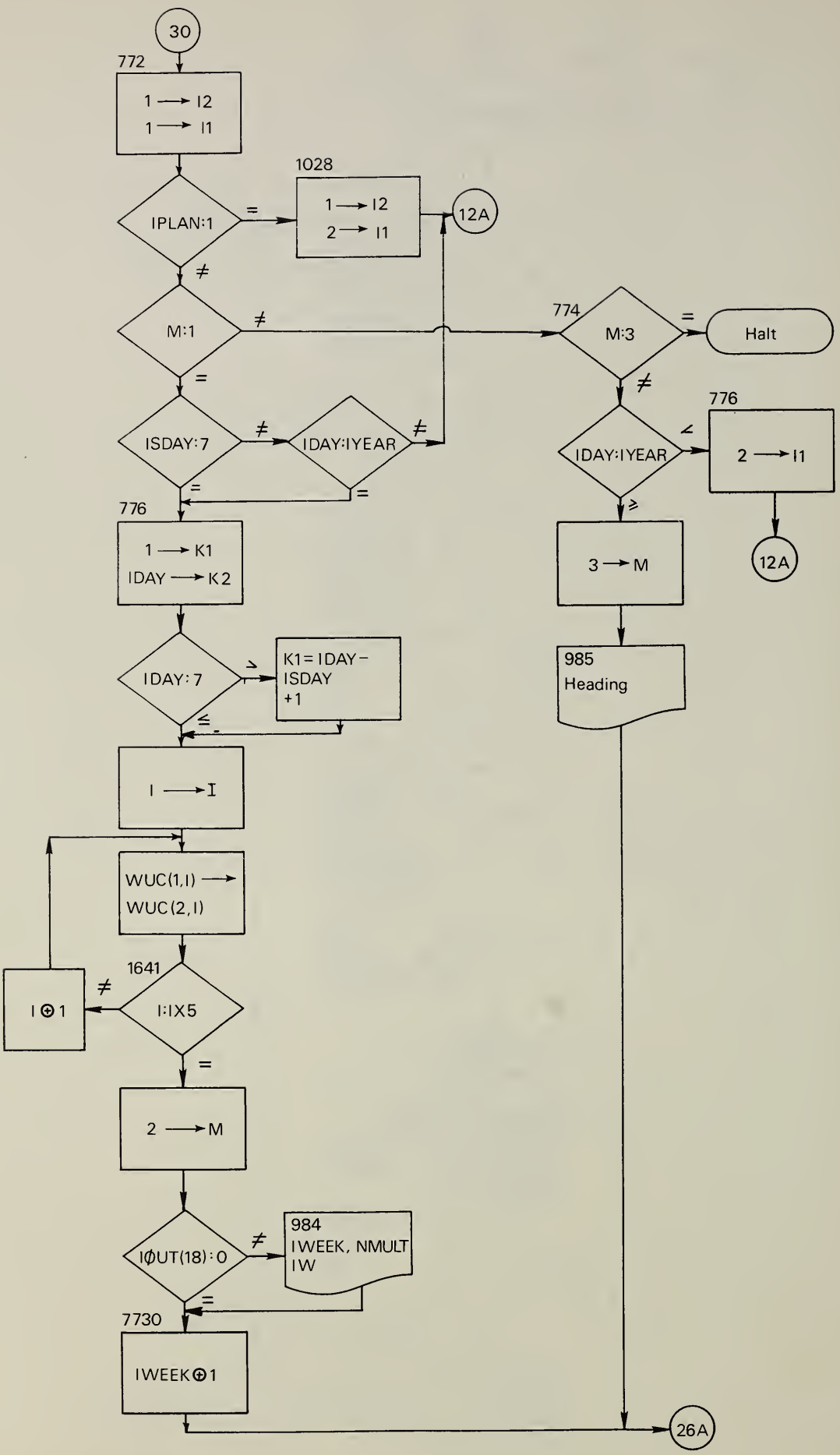

25
1014
NDL ⊖ L1 x ILAB (L)
NDE1 ⊖ K1
NDE2 ⊖ K2
NDE3 ⊖ K3
INDX (J) → N
SLH (M,N)
SE1H (M,N)
SE2H (M,N)
SE3H (M,N)
WUP (M,N) ⊕ X
WUP (M,N) : XJUNK1 (N)
>
XJUNK1 (N) → WUP (M,N)
≤
TCL (M,N)
L2 → L4
INØ (L4) : 0
=
≠
IEQ (L4) → L5
NDEQT (L5)
EQH (M,N,L5)
EQTØT (M,N)
1016
L4 : L3
≠
L4 ⊕ 1
=
25A
WPR (J) : 0
>
1018
K : 6
≠
K ⊕ 1
23B
≤
25B
=
1020
I : 1 X 10
≠
I ⊕ 1
23A
=
26

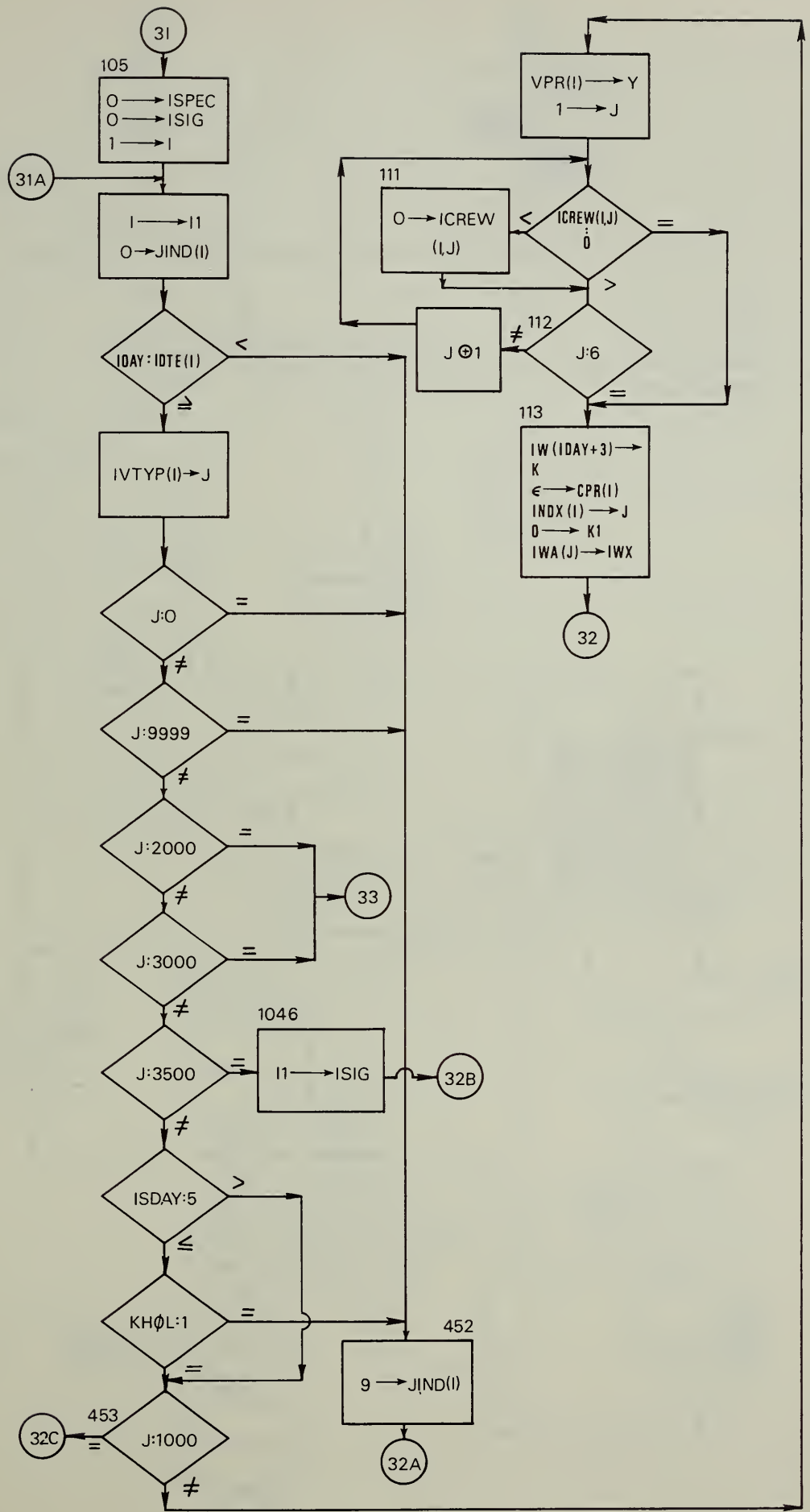

26
ISIG:I
=
22A
≠
XJL (M) = 8-NDL
XJE1 (M) = 8-NDE1
XJE2 (M) = 8-NDE2
XJE3 (M) = 8-NDE3
1 → I
1 → J
O→ICREW (I,J)
J:6
≠
J ⊕ 1
=
3091
I:IX10
≠
I ⊕ 1
=
IØUT(16) 0
=
30
≠
986
IWEEK, N MULT
26A
773
I PLAN:O
≠
1 → K
WUP(2,K)
→
WUP(1,K)
1106
K:IX5
K ⊕ 1
≠
=
=
1112
930
INVSUM
971, 972
Heading
27

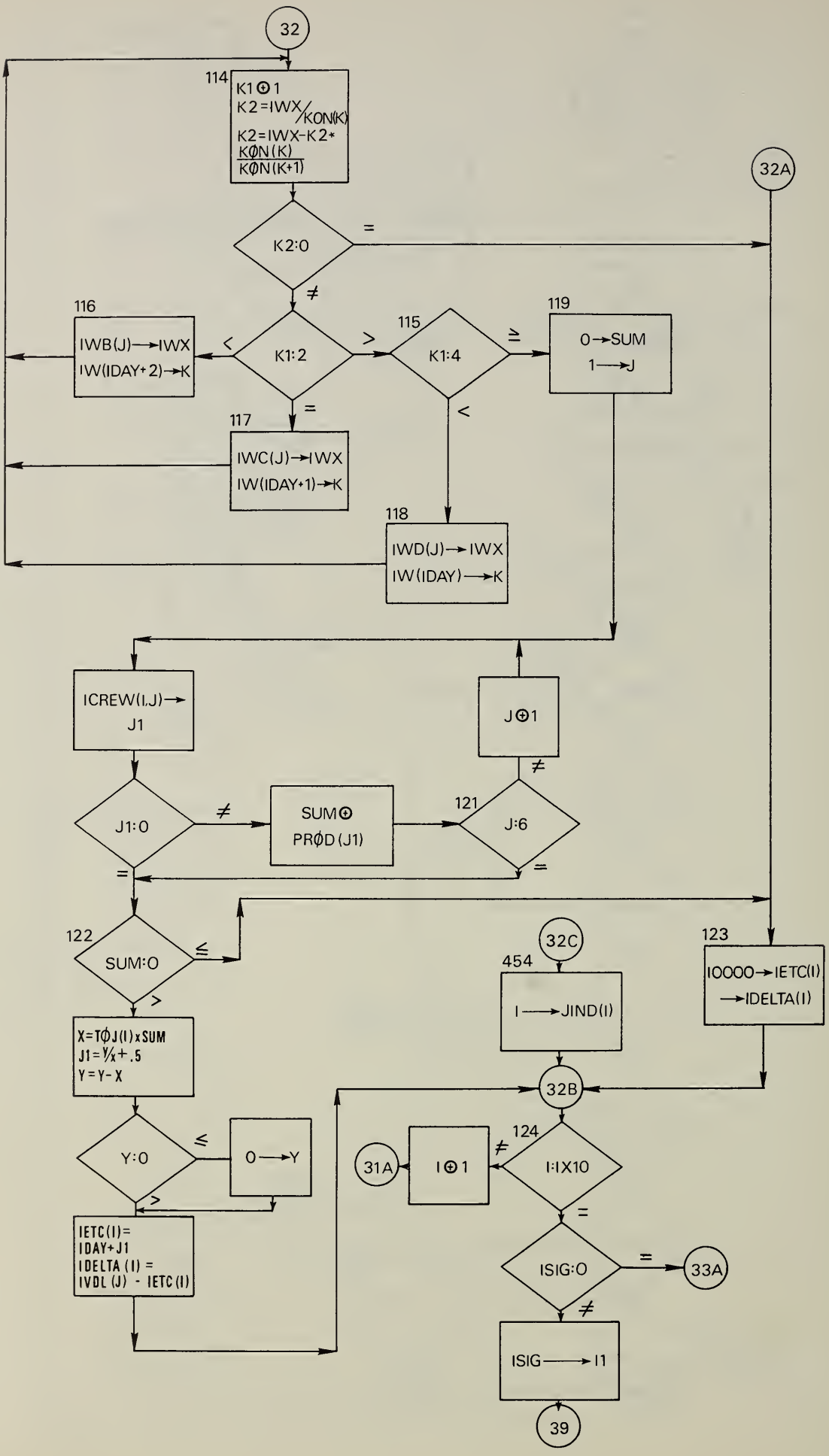

27
5 → ISIG
0 → X1
0 → X2
1 → I
X=TCL (M,I)+
EQTØT (M,I)
X1⊕X
Z=WUC(M,I)+
X
Z:0
≤
>
Y=SLH (M,I)+
SEIH (M,I)+
SE H (M,I)+
SE3H (M,I)
X2⊕Y
ISIG:5
=
975
Heading
0 → ISIG
≠
775
973
Report
Line
ISIG ⊕ 1
777
I:IX5
=
28
≠
I⊕1

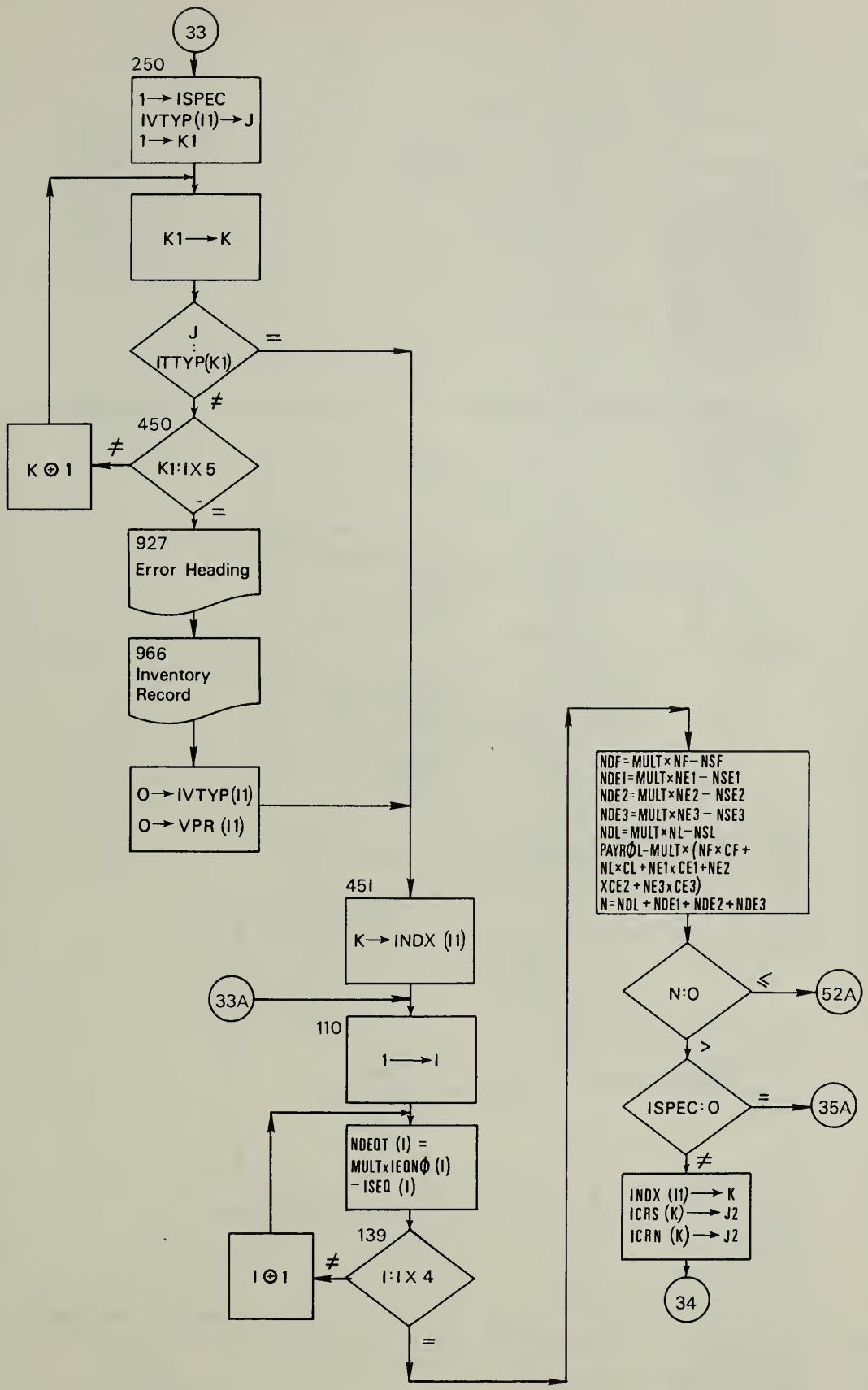

28
0 → X3
X4
X5
X6
X7
1 → I
X3⊕SLH(M,I)
X4⊕SE1H(M,I)
X5⊕SE2H(M,I)
X6⊕SE3H(M,I)
X7⊕TCL(M,I)
1044
≠
I⊕1
I:IX5
=
K1=X1 +.5
K2=X2+.5
K3=X3+.5
K4=X4+.5
K5=X5+.5
K6=X6+.5
K7=X7+.5
987
K'S
X=XJL(M)+XJE1(M)
+XJE2(M)+
XJE3 (M)
Y=CL*XJL (M)
+CE1*XJE1 (M)
+CE2*XJE2 (M)
+CE3*XJE3 (M)
988
XJL(M), XJE1 (M)
XJE2 (M), XJE3 (M)
X,Y
M:1
=
934
PAYRØL
≠
950, 979
Heading
980
IEQ
5 → ISIG
1 → I
29

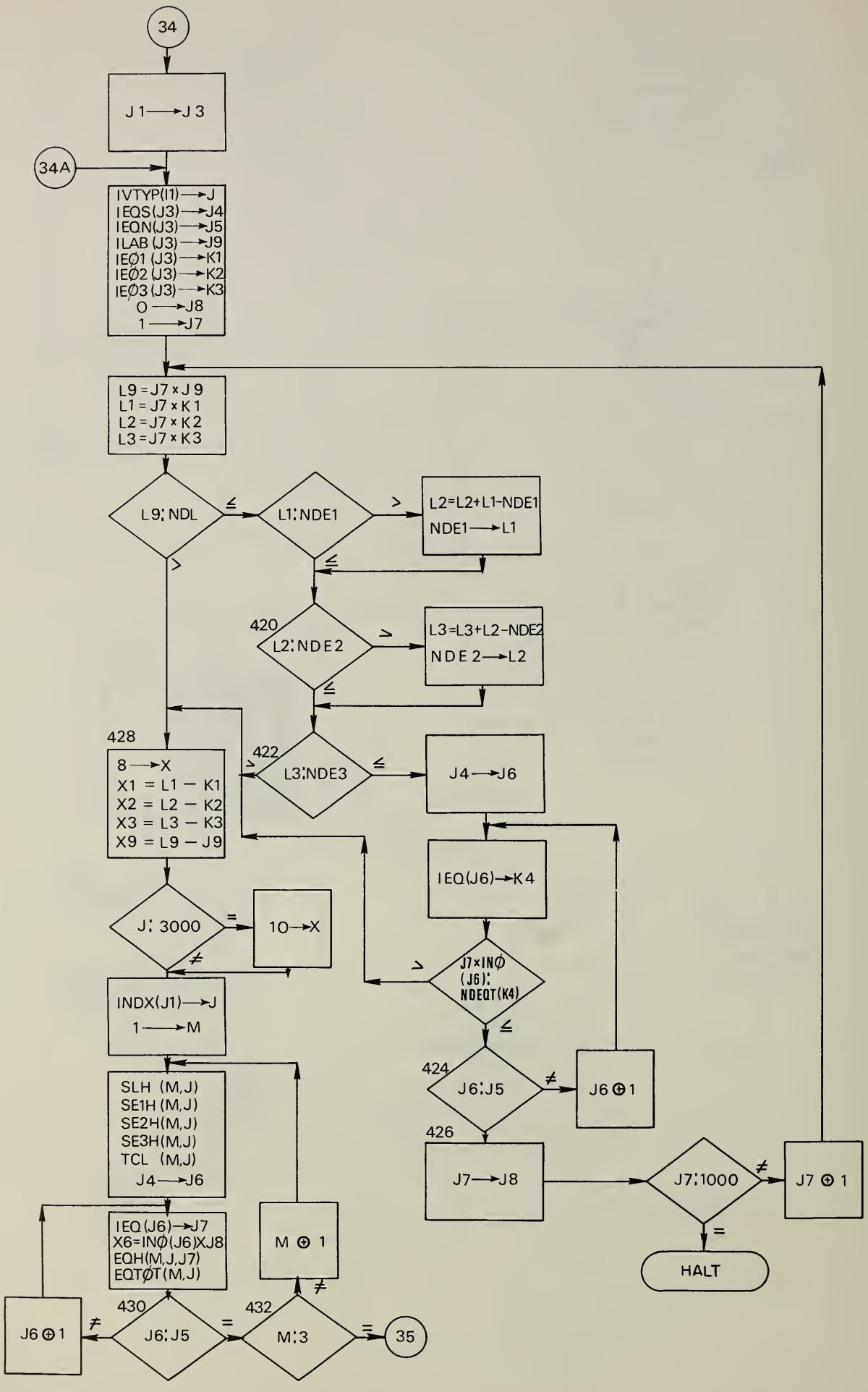

29
EQTΦT(M,I):0
≤
>
ISIG:5
≥
0 → ISIG
975
Heading
780
1 → K
JUNK 1(K) =
EQH (M,I,K) +
·5
7801
K:IX4
≠
K⊕1
=
982
Report
Line
ISIG⊕1
I⊕1
≠
782
I:IX5
=
1 → K
0 → SUM
0 → SUM1
1 → I
SUM 1 ⊕
EQTΦT (M,I)
SUM ⊕
EQH (M,I,K)
783
I:IX5
≠
I⊕1
=
JUNK 1(K) =
SUM + .5
JUNK 2 (K) =
SUM I + .5
K⊕1
≠
785
K:IX4
=
30

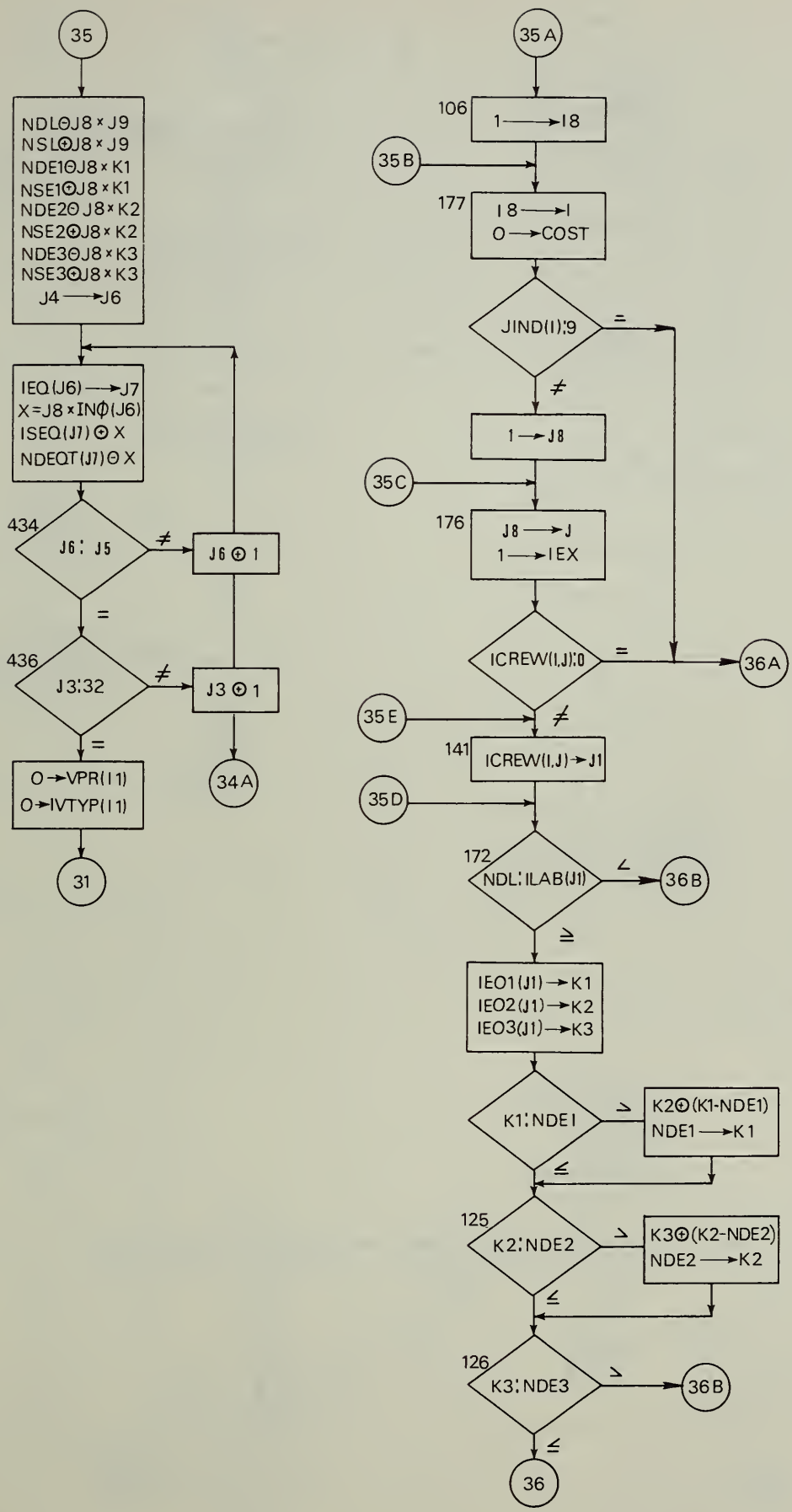

30
772
1 → I2
1 → I1
IPLAN:1
=
1028
1 → I2
2 → I1
12A
≠
M:1
≠
=
774
M:3
=
Halt
≠
ISDAY:7
≠
IDAY:IYEAR
≠
=
=
776
IDAY:IYEAR
<
2 → I1
12A
≥
776
1 → K1
IDAY → K2
3 → M
IDAY:7
>
K1 = IDAY − ISDAY +1
≤
985
Heading
I → I
WUC(1,I) →
WUC(2,I)
1641
I ⊕ 1
≠
I:IX5
=
2 → M
IØUT(18):0
≠
984
IWEEK, NMULT
IW
=
7730
IWEEK ⊕ 1
26A

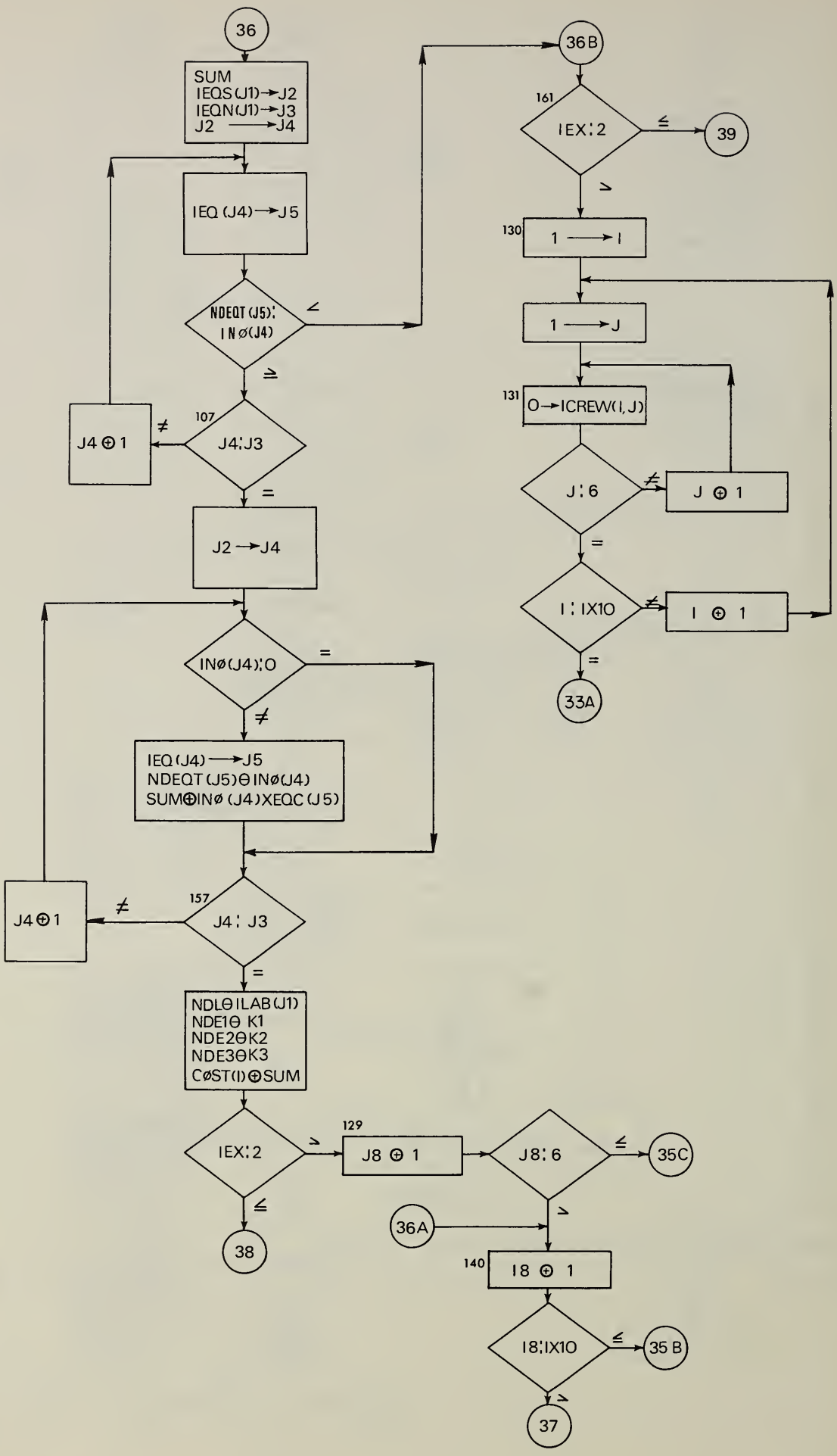

31
105
0 → ISPEC
0 → ISIG
1 → I
31A
I → I1
0 → JIND(I)
IDAY : IDTE(I)
<
≥
IVTYP(I) → J
J:0
=
≠
J:9999
=
≠
J:2000
=
33
≠
J:3000
=
≠
1046
J:3500
=
I1 → ISIG
32B
≠
ISDAY:5
>
≤
KHØL:1
=
=
453
32C
=
J:1000
≠
452
9 → JIND(I)
32A
VPR(I) → Y
1 → J
111
0 → ICREW (I,J)
ICREW(I,J) : 0
<
=
>
J ⊕ 1
≠
112
J:6
=
113
IW(IDAY+3) → K
∈ → CPR(I)
INDX(I) → J
0 → K1
IWA(J) → IWX
32

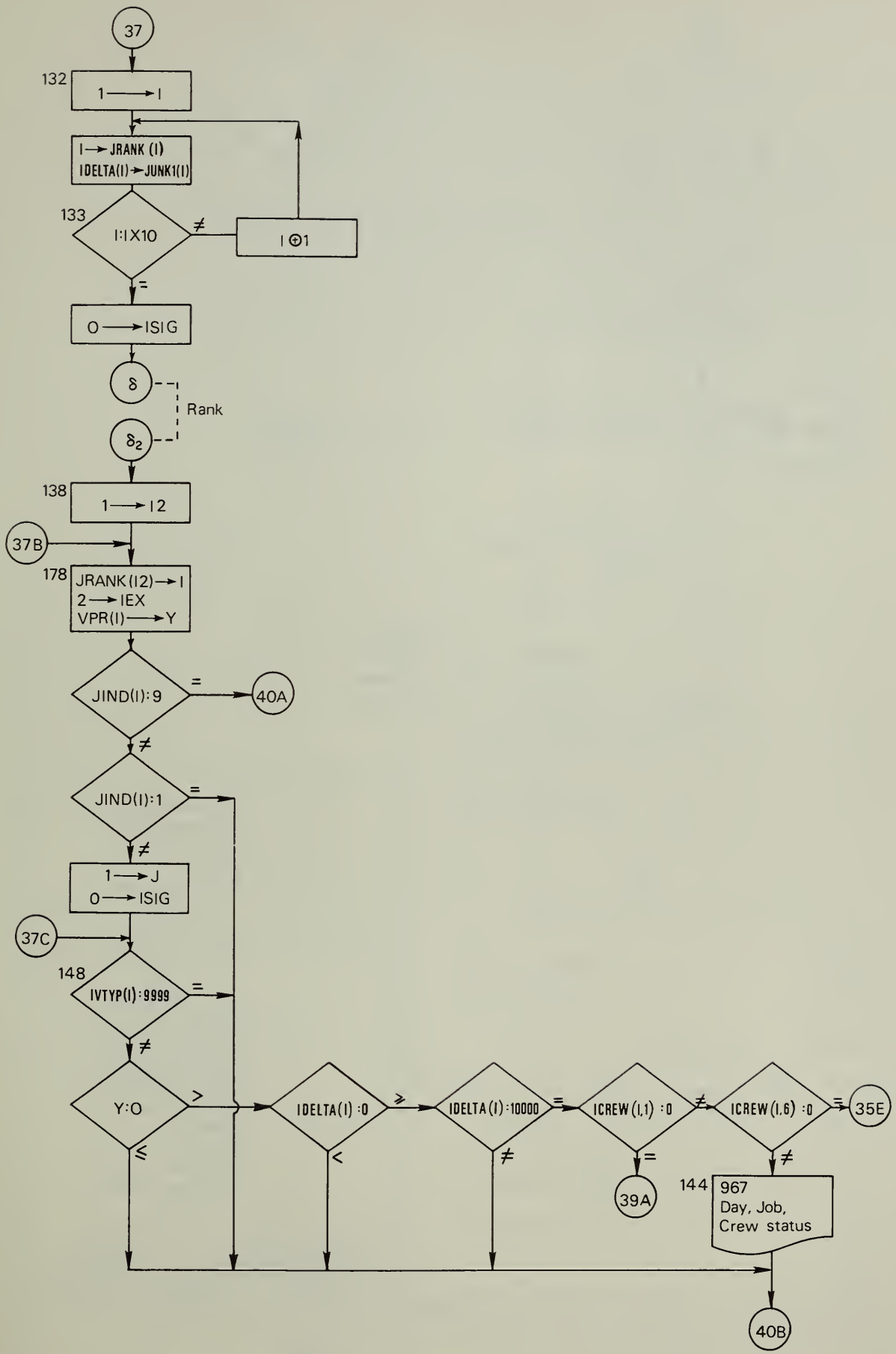

32
114
K1⊕1
K2=IWX/KON(K)
K2=IWX-K2*
KØN(K)/KØN(K+1)
K2:0
=
≠
32A
116
IWB(J)→IWX
IW(IDAY+2)→K
<
K1:2
>
115
K1:4
≥
119
0→SUM
1→J
=
117
IWC(J)→IWX
IW(IDAY+1)→K
<
118
IWD(J)→IWX
IW(IDAY)→K
ICREW(I,J)→J1
J⊕1
≠
J1:0
≠
SUM⊕PRØD(J1)
121
J:6
=
=
122
SUM:0
≤
>
X=TØJ(I)xSUM
J1=1/X+.5
Y=Y-X
32C
454
I→JIND(I)
123
10000→IETC(I)
→IDELTA(I)
32B
Y:0
≤
0→Y
>
IETC(I)=
IDAY+J1
IDELTA(I)=
IVDL(J)-IETC(I)
31A
I⊕1
≠
124
I:IX10
=
ISIG:0
=
33A
≠
ISIG→I1
39

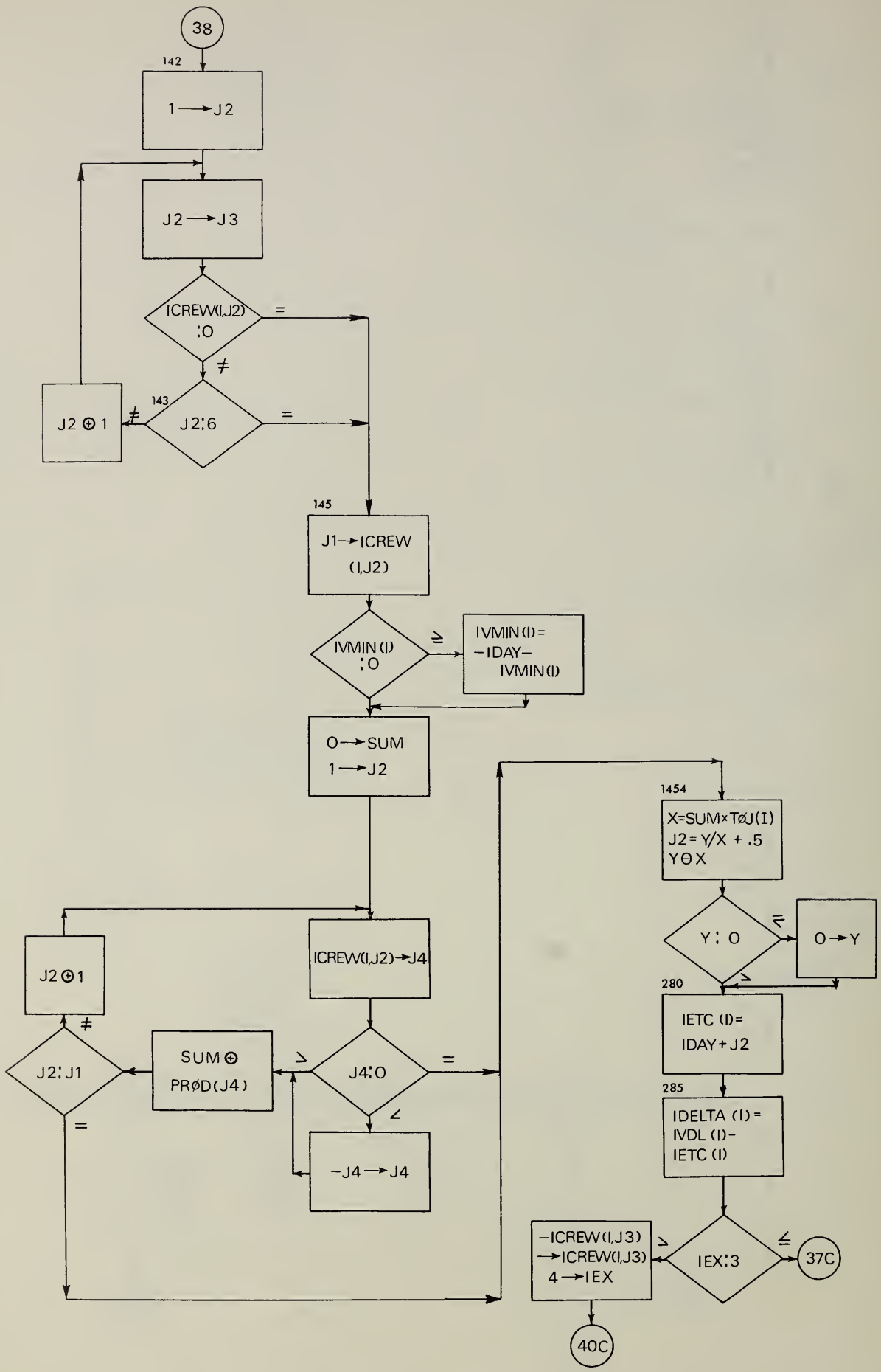

33
250
1→ISPEC
IVTYP(I1)→J
1→K1
K1→K
J
:
ITTYP(K1)
=
≠
450
K1:IX5
≠
K⊕1
=
927
Error Heading
966
Inventory
Record
0→IVTYP(I1)
0→VPR(I1)
451
K→INDX(I1)
33A
110
1→I
NDEQT(I) =
MULTxIEQNØ(I)
-ISEQ(I)
139
I:IX4
≠
I⊕1
=
NDF=MULTxNF-NSF
NDE1=MULTxNE1-NSE1
NDE2=MULTxNE2-NSE2
NDE3=MULTxNE3-NSE3
NDL=MULTxNL-NSL
PAYRØL-MULTx(NFxCF+
NLxCL+NE1xCE1+NE2
XCE2+NE3xCE3)
N=NDL+NDE1+NDE2+NDE3
N:0
≤
52A
>
ISPEC:0
=
35A
≠
INDX(I1)→K
ICRS(K)→J2
ICRN(K)→J2
34

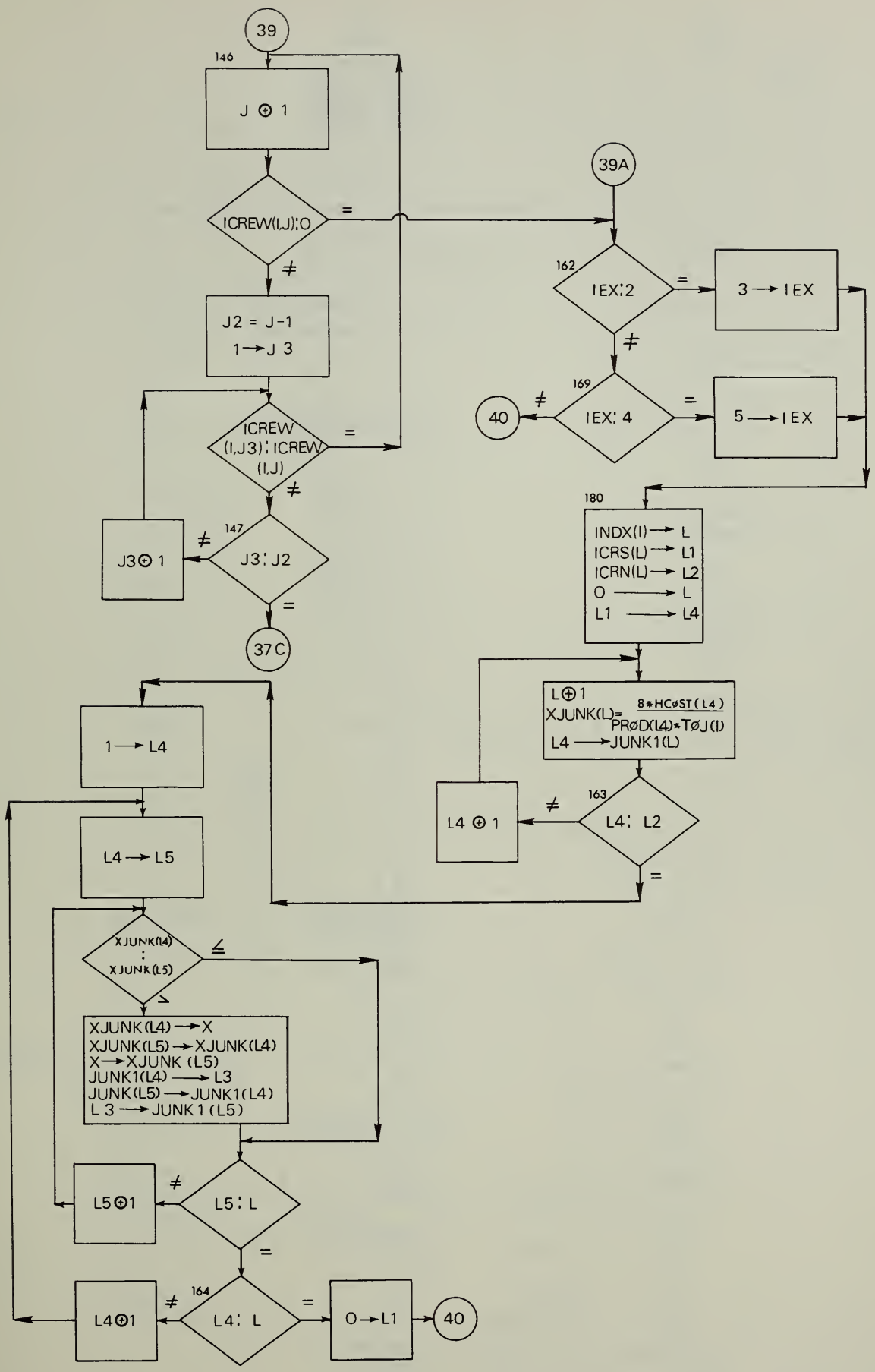

34
J 1 → J 3
34A
IVTYP(I1) → J
IEQS(J3) → J4
IEQN(J3) → J5
ILAB (J3) → J9
IEØ1 (J3) → K1
IEØ2 (J3) → K2
IEØ3 (J3) → K3
O → J8
1 → J7
L9 = J7 × J 9
L1 = J7 × K 1
L2 = J7 × K 2
L3 = J7 × K 3
L9 : NDL
≤
L1 : NDE1
>
L2=L2+L1-NDE1
NDE1 → L1
>
≤
420
L2 : NDE 2
>
L3=L3+L2-NDE2
NDE 2 → L2
≤
428
8 → X
X1 = L1 − K1
X2 = L2 − K2
X3 = L3 − K3
X9 = L9 − J9
422
>
L3 : NDE3
≤
J4 → J6
IEQ(J6) → K4
J : 3000
=
10 → X
≠
>
J7×INØ (J6) : NDEQT(K4)
≤
INDX(J1) → J
1 → M
424
J6 : J5
≠
J6 ⊕ 1
SLH (M,J)
SE1H (M,J)
SE2H(M,J)
SE3H(M,J)
TCL (M,J)
J4 → J6
426
J7 → J8
J7 : 1000
≠
J7 ⊕ 1
=
HALT
IEQ (J6) → J7
X6=INØ(J6)XJ8
EQH(M,J,J7)
EQTØT(M,J)
M ⊕ 1
≠
J6 ⊕ 1
≠
430
J6 : J5
=
432
M : 3
=
35

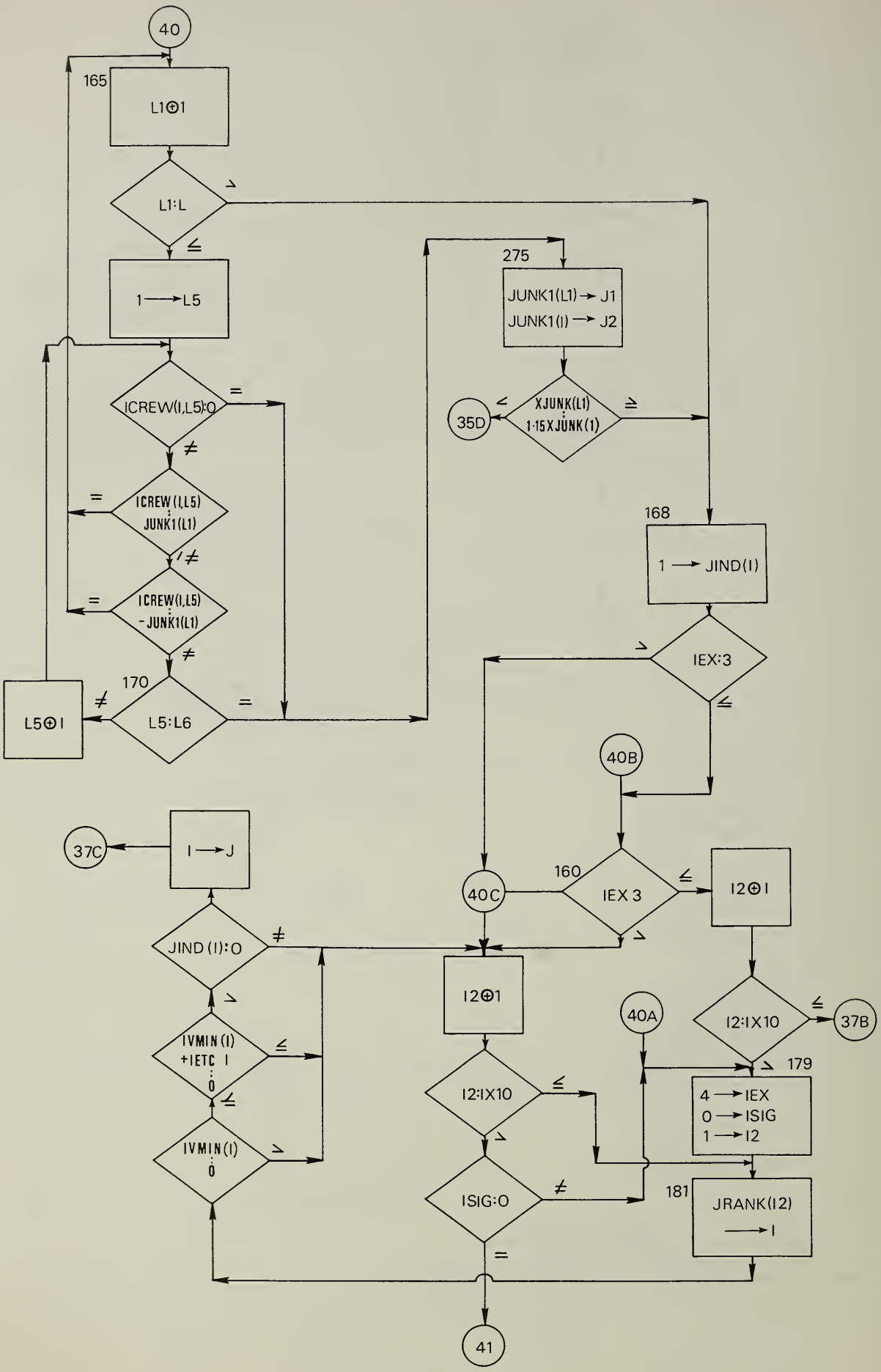

35
NDL⊖J8 × J9
NSL⊕J8 × J9
NDE1⊖J8 × K1
NSE1⊕J8 × K1
NDE2⊖J8 × K2
NSE2⊕J8 × K2
NDE3⊖J8 × K3
NSE3⊕J8 × K3
J4 → J6
IEQ(J6) → J7
X = J8 × INϕ(J6)
ISEQ(J7) ⊙ X
NDEQT(J7) ⊖ X
434
J6 : J5
≠
J6 ⊕ 1
=
436
J3 : 32
≠
J3 ⊕ 1
=
O → VPR(11)
O → IVTYP(11)
31
34A
35A
106
1 → I8
35B
177
I8 → I
O → COST
JIND(I) : 9
=
≠
1 → J8
35C
176
J8 → J
1 → IEX
ICREW(I,J) : 0
=
36A
35E
≠
141
ICREW(I,J) → J1
35D
172
NDL : ILAB(J1)
<
36B
≥
IEO1(J1) → K1
IEO2(J1) → K2
IEO3(J1) → K3
K1 : NDE1
>
K2⊕(K1-NDE1)
NDE1 → K1
≤
125
K2 : NDE2
>
K3⊕(K2-NDE2)
NDE2 → K2
≤
126
K3 : NDE3
>
36B
≤
36

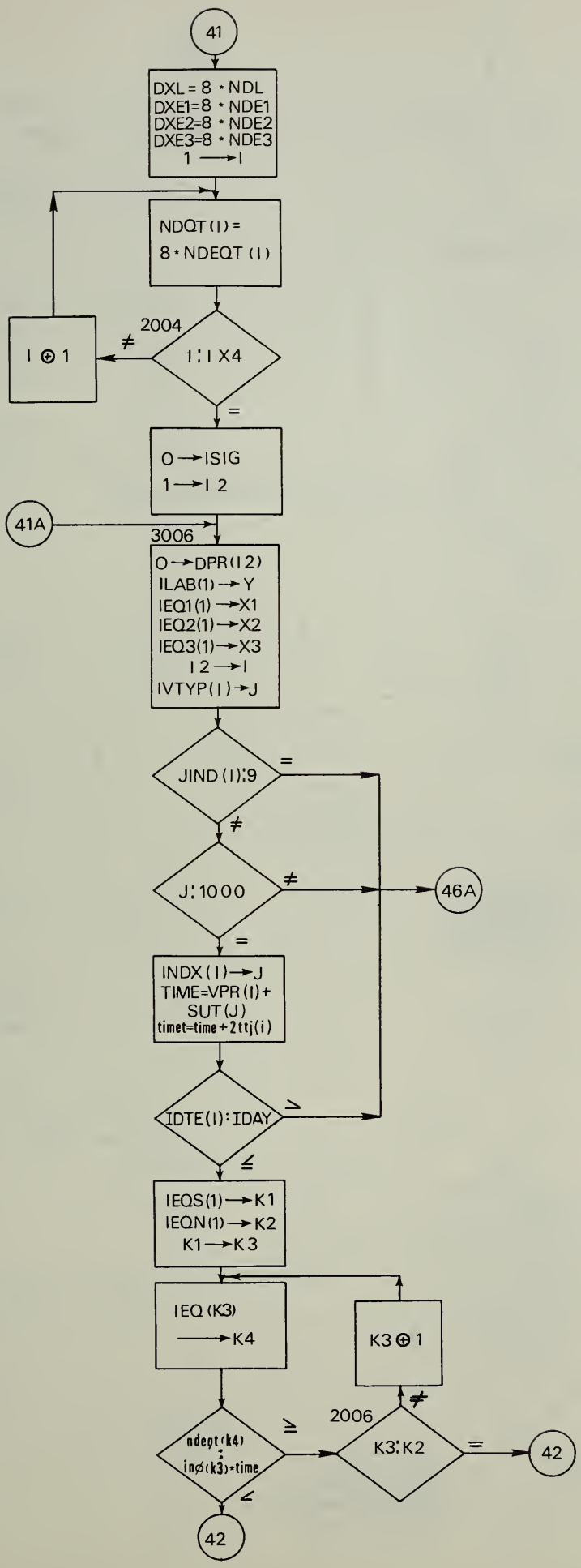

36
SUM
IEQS(J1)→J2
IEQN(J1)→J3
J2 → J4
IEQ(J4)→J5
NDEQT(J5);INØ(J4)
<
≥
107
J4;J3
≠
J4⊕1
=
J2→J4
INØ(J4);0
=
≠
IEQ(J4)→J5
NDEQT(J5)ΘINØ(J4)
SUMΘINØ(J4)XEQC(J5)
157
J4;J3
≠
J4⊕1
=
NDLΘILAB(J1)
NDE1Θ K1
NDE2ΘK2
NDE3ΘK3
CØST(I)ΘSUM
IEX;2
>
129
J8⊕1
J8;6
≤
35C
≤
38
36A
>
140
I8⊕1
I8;IX10
≤
35B
>
37
36B
161
IEX;2
≤
39
>
130
1→I
1→J
131
0→ICREW(I,J)
J;6
≠
J⊕1
=
I;IX10
≠
I⊕1
=
33A

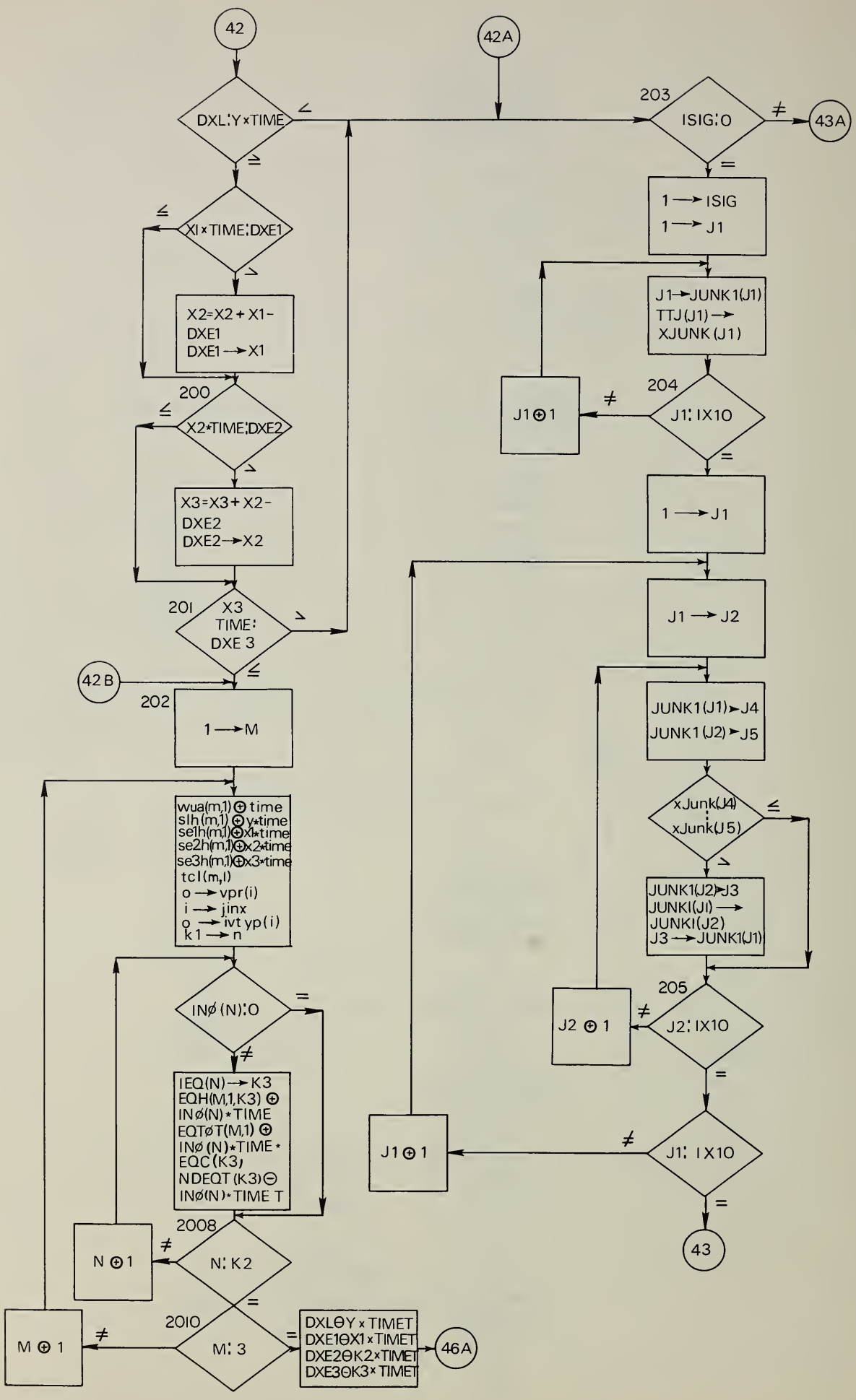

37
132
1 → I
I → JRANK (I)
IDELTA(I) → JUNK1(I)
133
I:IX10
≠
I ⊕1
=
0 → ISIG
δ
Rank
δ2
138
1 → I2
37B
178
JRANK(I2) → I
2 → IEX
VPR(I) → Y
JIND(I):9
=
40A
≠
JIND(I):1
=
≠
1 → J
0 → ISIG
37C
148
IVTYP(I):9999
=
≠
Y:O
>
≤
IDELTA(I):0
≥
<
IDELTA(I):10000
=
≠
ICREW(I,1):0
≠
=
39A
ICREW(I,6):0
=
35E
≠
144
967
Day, Job,
Crew status
40B

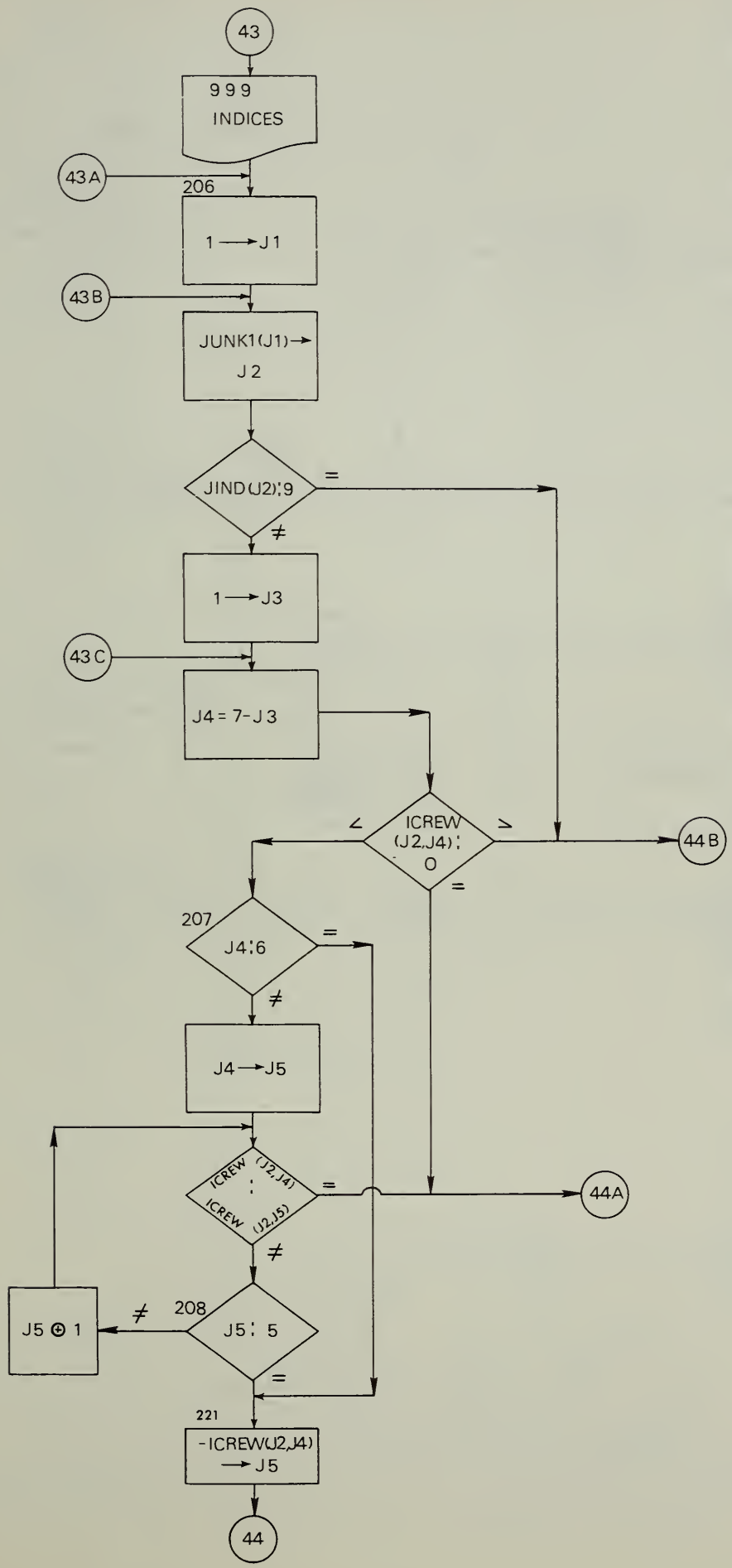

38
142
1 → J2
J2 → J3
ICREW(I,J2) :0
=
≠
143
J2 :6
≠
J2 ⊕ 1
=
145
J1 → ICREW (I,J2)
IVMIN (I) :0
≥
IVMIN (I) = −IDAY− IVMIN (I)
0 → SUM
1 → J2
ICREW(I,J2) → J4
J4 :0
=
>
<
−J4 → J4
SUM ⊕ PRØD(J4)
J2 :J1
≠
=
J2 ⊕ 1
1454
X=SUM×TØJ(I)
J2 = Y/X + .5
Y Θ X
Y : 0
≤
0 → Y
>
280
IETC (I) = IDAY + J2
285
IDELTA (I) = IVDL (I) − IETC (I)
IEX :3
≤
>
−ICREW(I,J3) → ICREW(I,J3)
4 → IEX
37C
40C

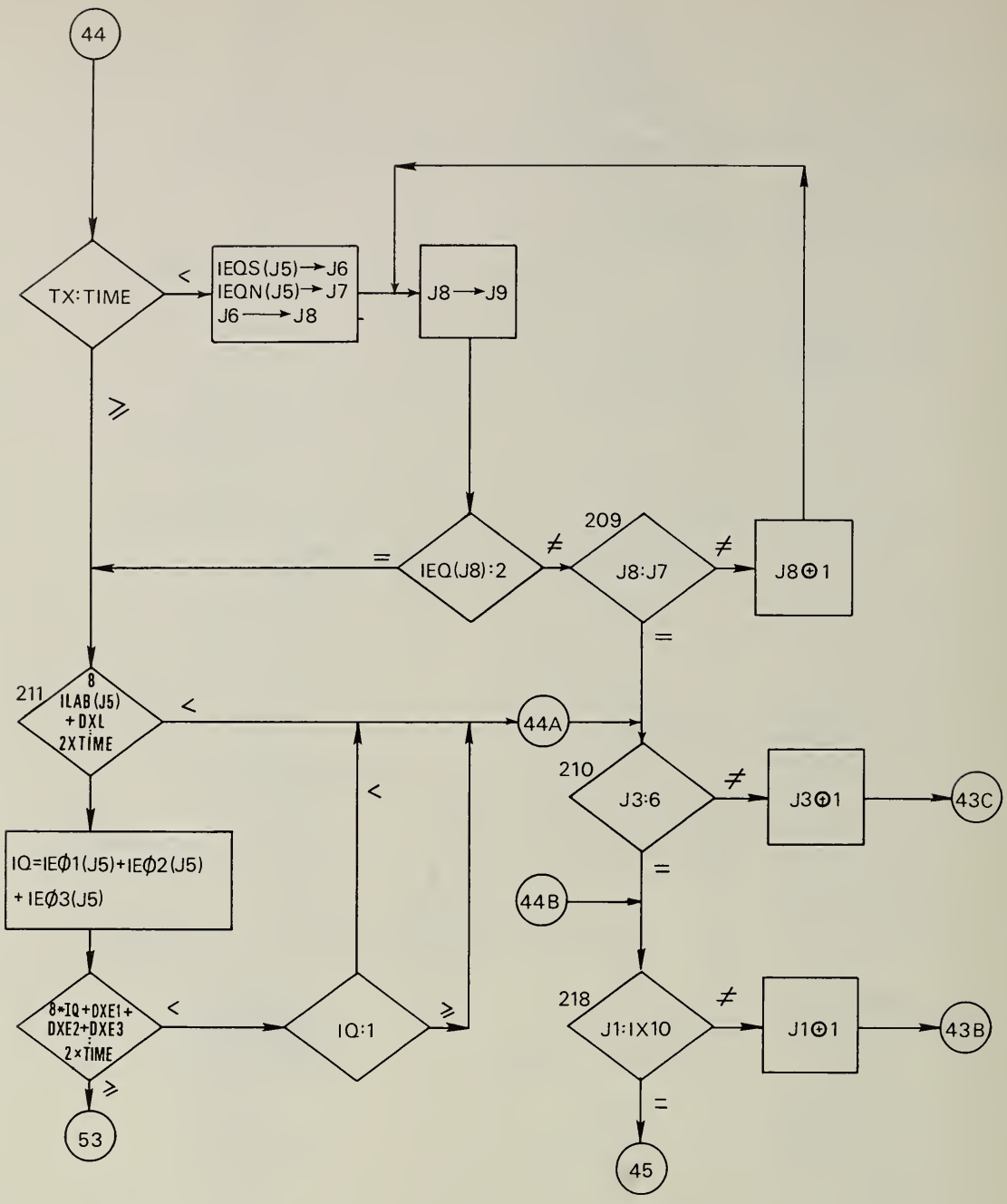

39
146
J ⊕ 1
ICREW(I,J):0
=
≠
J2 = J-1
1→J 3
ICREW (I,J3):ICREW (I,J)
=
≠
147
J3:J2
≠
J3⊕1
=
37C
39A
162
IEX:2
=
3→IEX
≠
169
IEX:4
=
5→IEX
≠
40
180
INDX(I)→L
ICRS(L)→L1
ICRN(L)→L2
0→L
L1→L4
L⊕1
XJUNK(L)= 8*HCØST(L4) / PRØD(L4)*TØJ(I)
L4→JUNK1(L)
163
L4:L2
≠
L4⊕1
=
1→L4
L4→L5
XJUNK(L4) : XJUNK(L5)
≤
≥
XJUNK(L4)→X
XJUNK(L5)→XJUNK(L4)
X→XJUNK(L5)
JUNK1(L4)→L3
JUNK(L5)→JUNK1(L4)
L3→JUNK1(L5)
L5⊕1
≠
L5:L
=
164
L4:L
≠
L4⊕1
=
0→L1
40

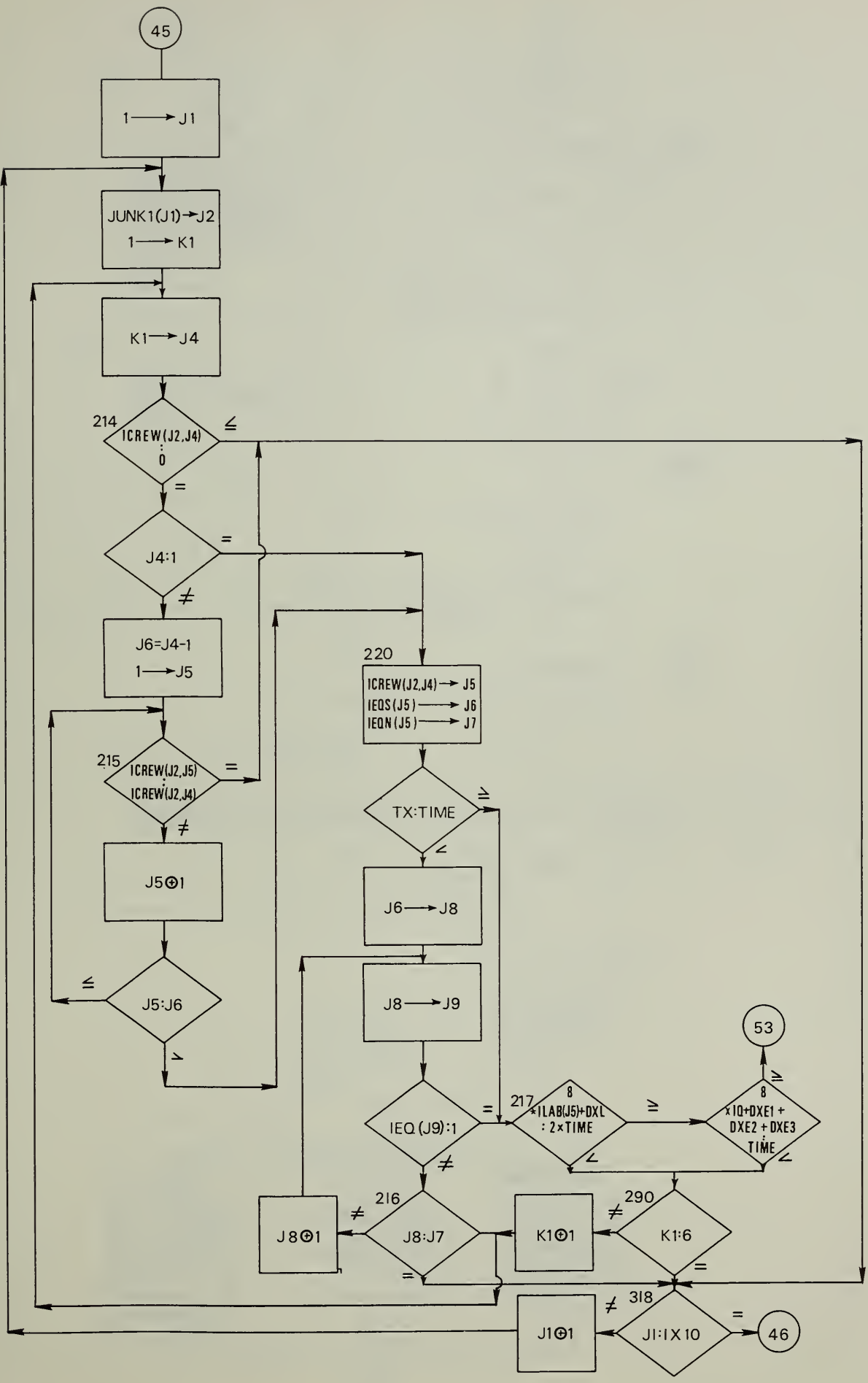

40
165
L1⊕1
L1:L
1 → L5
ICREW(I,L5):0
ICREW(I,L5) : JUNK1(L1)
ICREW(I,L5) - JUNK1(L1)
170
L5:L6
L5⊕1
275
JUNK1(L1) → J1
JUNK1(I) → J2
XJUNK(L1) 1·15 XJUNK(I)
35D
168
1 → JIND(I)
IEX:3
40B
160
IEX 3
40C
I2⊕1
37C
I → J
JIND(I):0
IVMIN(I) + IETC
IVMIN(I) : 0
I2⊕1
I2:IX10
40A
12:IX10
37B
179
4 → IEX
0 → ISIG
1 → I2
ISIG:0
181
JRANK(I2) → I
41

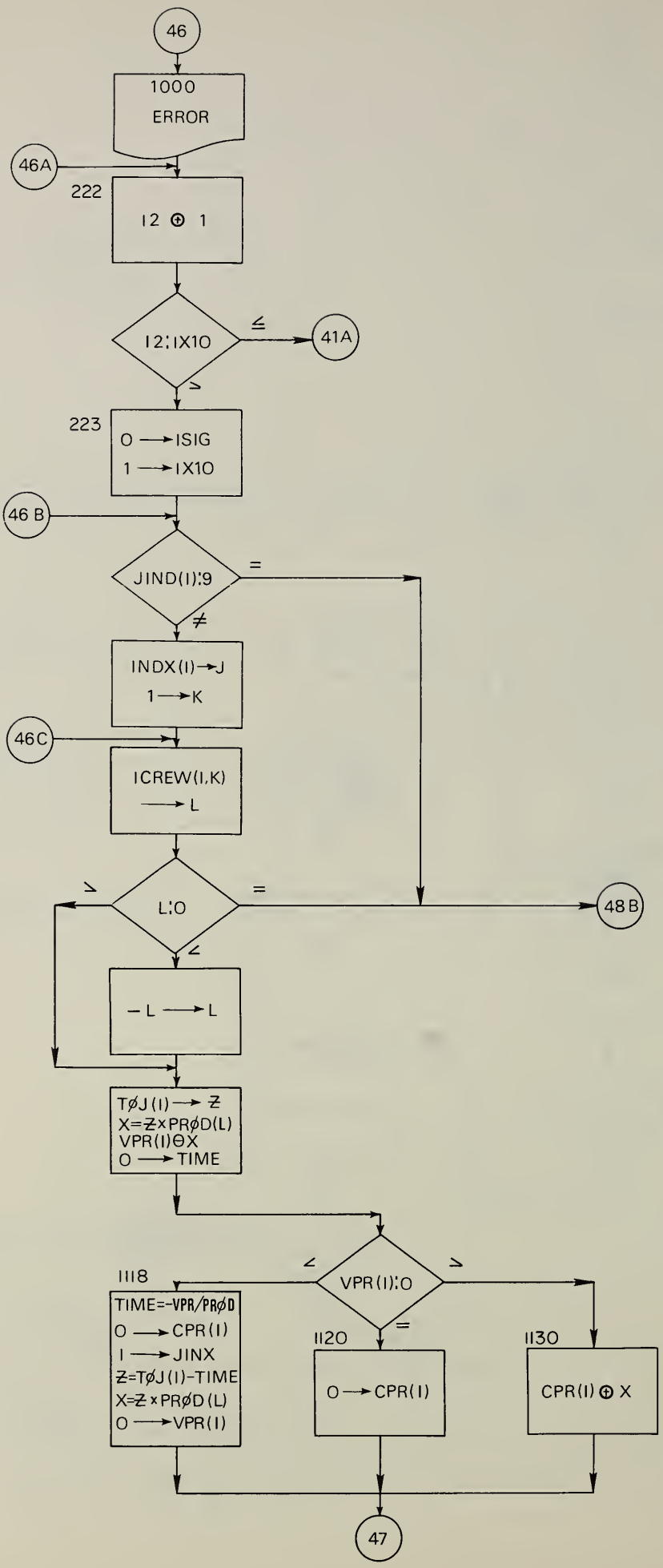

41
DXL = 8 * NDL
DXE1=8 * NDE1
DXE2=8 * NDE2
DXE3=8 * NDE3
1 → I
NDQT(I) =
8 * NDEQT(I)
2004
I ; I X4
≠
I ⊕ 1
=
0 → ISIG
1 → I 2
41A
3006
0 → DPR(I 2)
ILAB(1) → Y
IEQ1(1) → X1
IEQ2(1) → X2
IEQ3(1) → X3
I 2 → I
IVTYP(I) → J
JIND(I) ; 9
=
≠
J ; 1000
≠
46A
=
INDX(I) → J
TIME=VPR(I) +
SUT(J)
timet=time+2ttj(i)
IDTE(I) ; IDAY
≥
≤
IEQS(1) → K1
IEQN(1) → K2
K1 → K3
IEQ(K3)
→ K4
K3 ⊕ 1
≠
2006
ndegt(k4)
;
inø(k3)*time
≥
K3 ; K2
=
42
≤
42

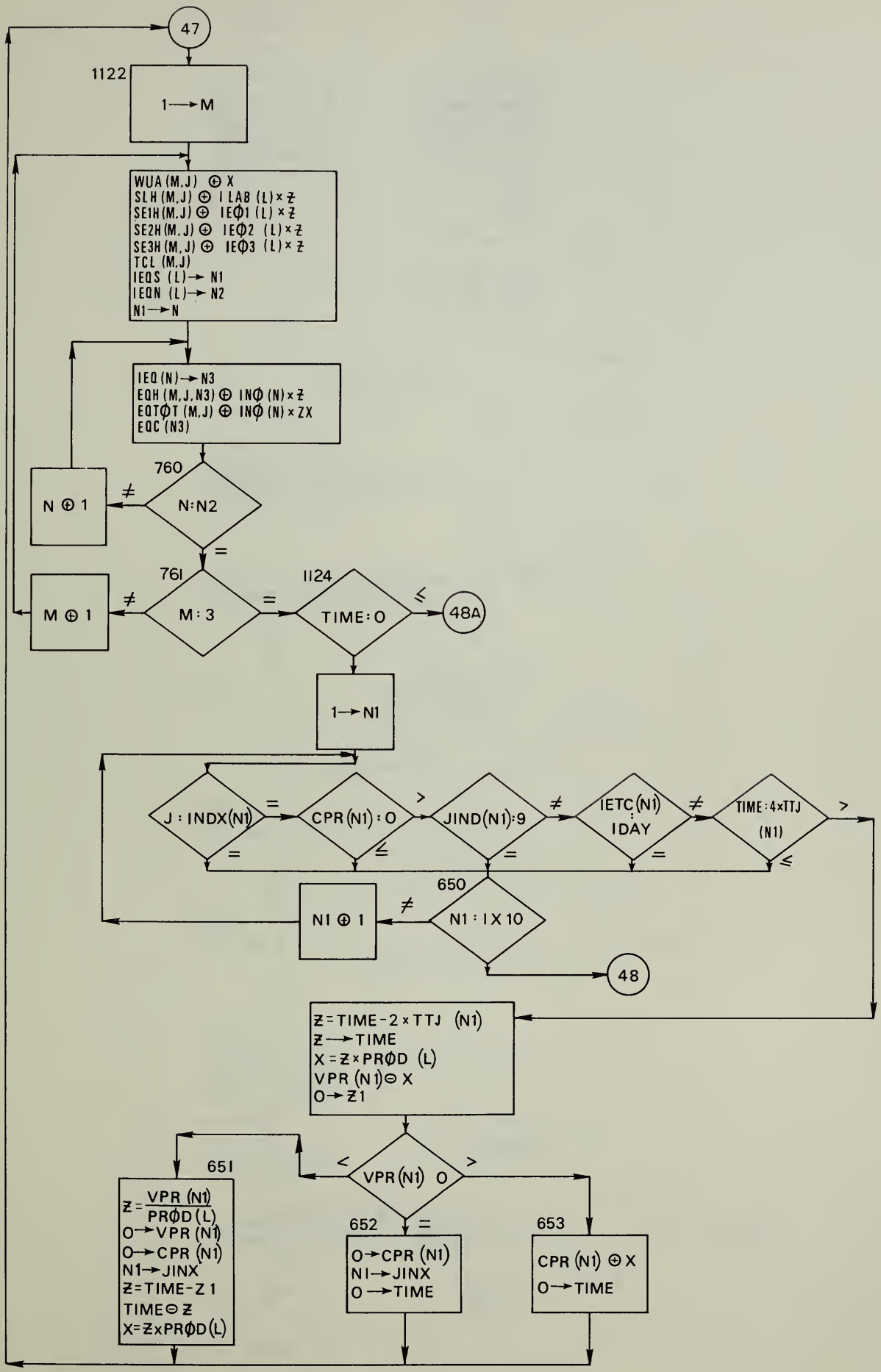

42
DXL:Y×TIME
≥
≤
XI×TIME:DXE1
≥
X2=X2+X1-DXE1
DXE1→X1
200
≤
X2*TIME:DXE2
≥
X3=X3+X2-DXE2
DXE2→X2
201
X3 TIME: DXE 3
≥
≤
42B
202
1→M
wua(m,1)⊕time
slh(m,1)⊕y*time
se1h(m,1)⊕x1*time
se2h(m,1)⊕x2*time
se3h(m,1)⊕x3*time
tcl(m,l)
o→vpr(i)
i→jinx
o→ivtyp(i)
k1→n
INØ(N):O
=
≠
IEQ(N)→K3
EQH(M,1,K3)⊕
INØ(N)*TIME
EQTØT(M,1)⊕
INØ(N)*TIME*
EQC(K3,
NDEQT(K3)⊖
INØ(N)*TIME T
2008
N⊕1
≠
N: K2
=
2010
M⊕1
≠
M: 3
=
DXLΘY×TIMET
DXE1ΘX1×TIMET
DXE2ΘK2×TIMET
DXE3ΘK3×TIMET
46A
42A
203
ISIG:O
≠
43A
=
1→ISIG
1→J1
J1→JUNK1(J1)
TTJ(J1)→XJUNK(J1)
204
J1⊕1
≠
J1: IX10
=
1→J1
J1→J2
JUNK1(J1)→J4
JUNK1(J2)→J5
xJunk(J4)
xJunk(J5)
≤
≥
JUNK1(J2)→J3
JUNKI(JI)→JUNKI(J2)
J3→JUNK1(J1)
205
J2⊕1
≠
J2: IX10
=
J1⊕1
≠
J1: IX10
=
43

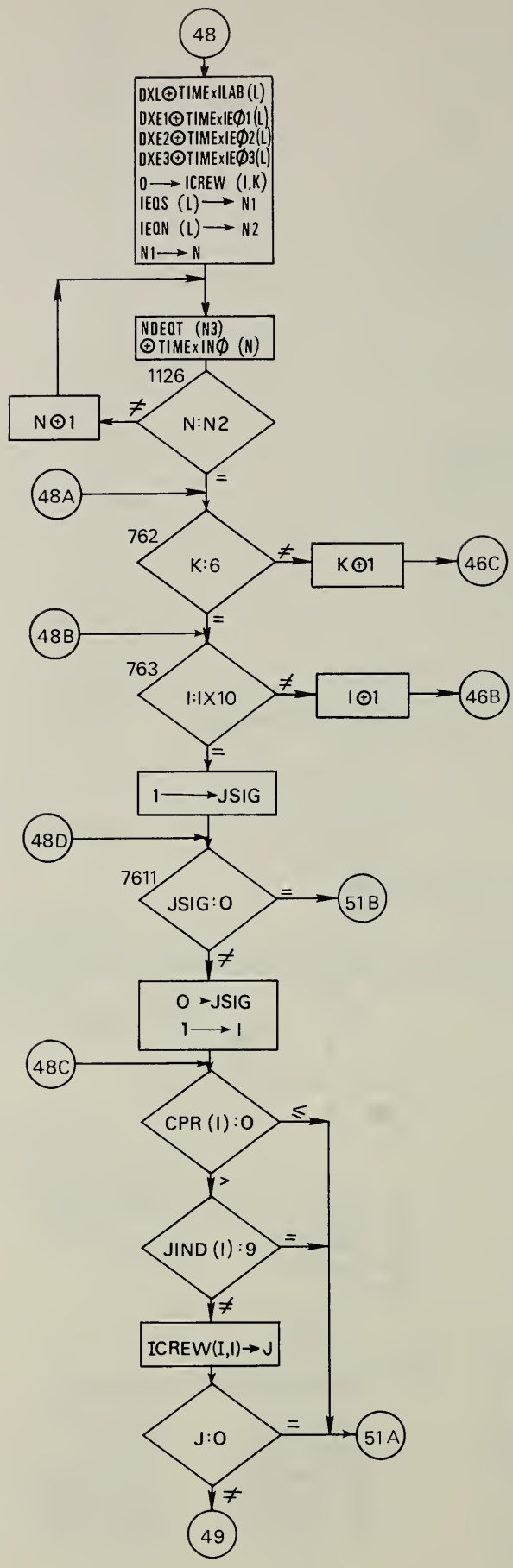

43
999
INDICES
43A
206
1 → J1
43B
JUNK1(J1) → J2
JIND(J2):9
=
≠
1 → J3
43C
J4 = 7-J3
<
ICREW (J2,J4) : 0
>
44B
=
207
J4:6
=
≠
J4 → J5
ICREW (J2,J4) : ICREW (J2,J5)
=
44A
≠
208
J5 ⊕ 1
≠
J5 : 5
=
221
-ICREW(J2,J4) → J5
44

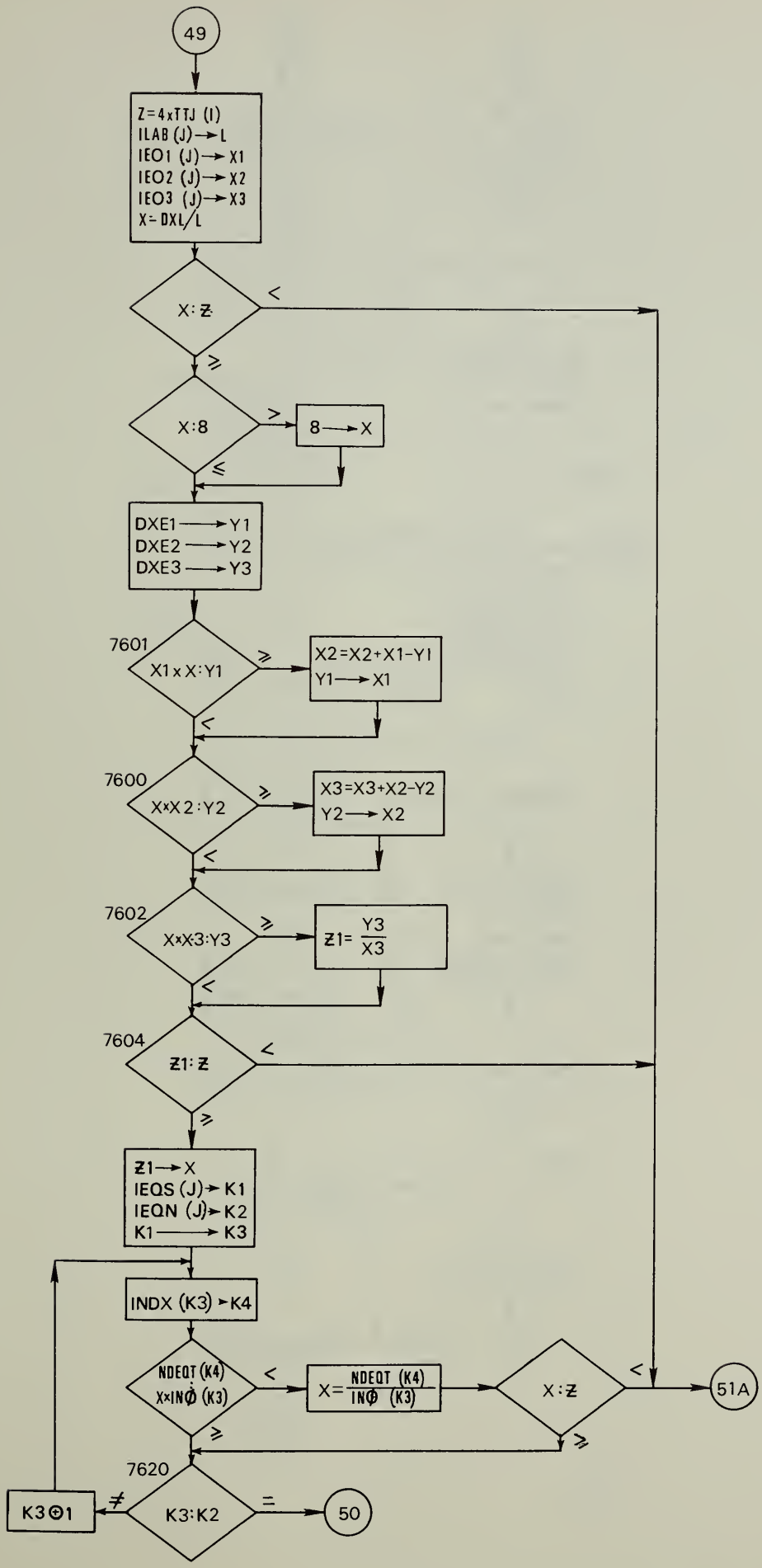

44
TX:TIME
<
IEQS(J5)→J6
IEQN(J5)→J7
J6→J8
J8→J9
≥
=
IEQ(J8):2
≠
209
J8:J7
≠
J8⊕1
=
211
8
ILAB(J5)
+DXL
2XTIME
<
44A
210
J3:6
≠
J3⊕1
43C
=
44B
IQ=IEØ1(J5)+IEØ2(J5)
+IEØ3(J5)
<
8*IQ+DXE1+
DXE2+DXE3
2×TIME
<
IQ:1
≥
≥
53
218
J1:IX10
≠
J1⊕1
43B
=
45

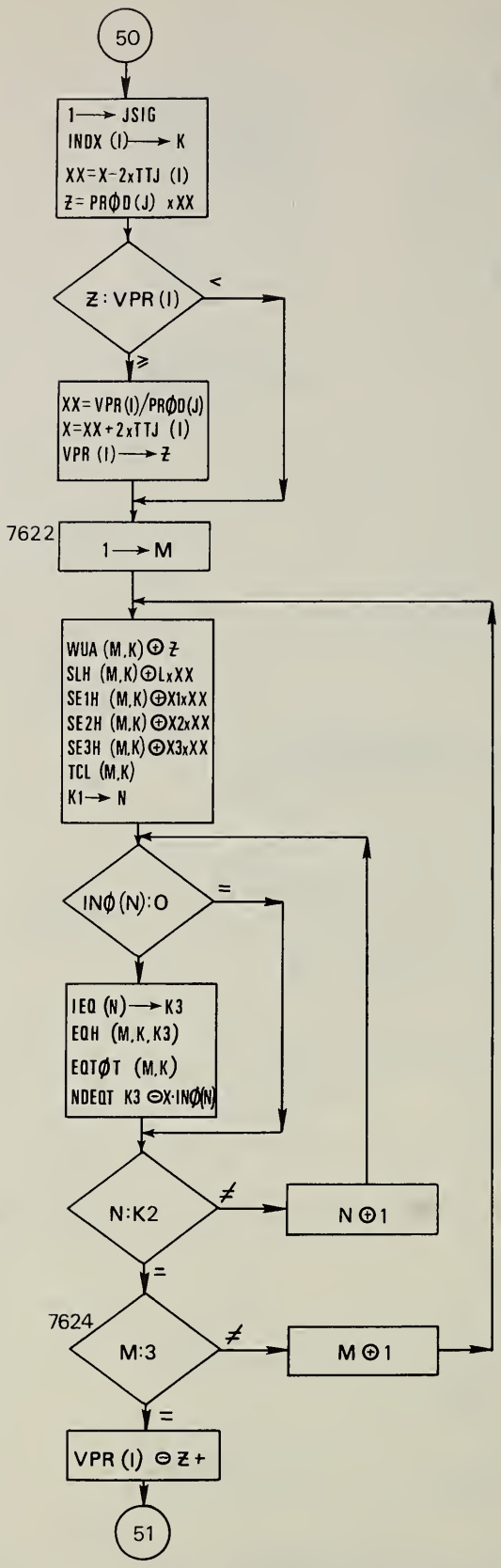

45
1 → J1
JUNK1(J1) → J2
1 → K1
K1 → J4
214
ICREW(J2,J4)
⋮
0
≤
=
J4:1
=
≠
J6=J4-1
1 → J5
215
ICREW(J2,J5)
⋮
ICREW(J2,J4)
=
≠
J5⊕1
≤
J5:J6
>
220
ICREW(J2,J4) → J5
IEOS(J5) → J6
IEQN(J5) → J7
TX:TIME
≥
<
J6 → J8
J8 → J9
IEQ(J9):1
=
≠
217
8
×ILAB(J5)+DXL
: 2×TIME
≥
8
×10+DXE1 +
DXE2 + DXE3
⋮
TIME
≥
<
53
J8⊕1
≠
216
J8:J7
=
K1⊕1
≠
290
K1:6
=
J1⊕1
≠
318
J1:1X10
=
46

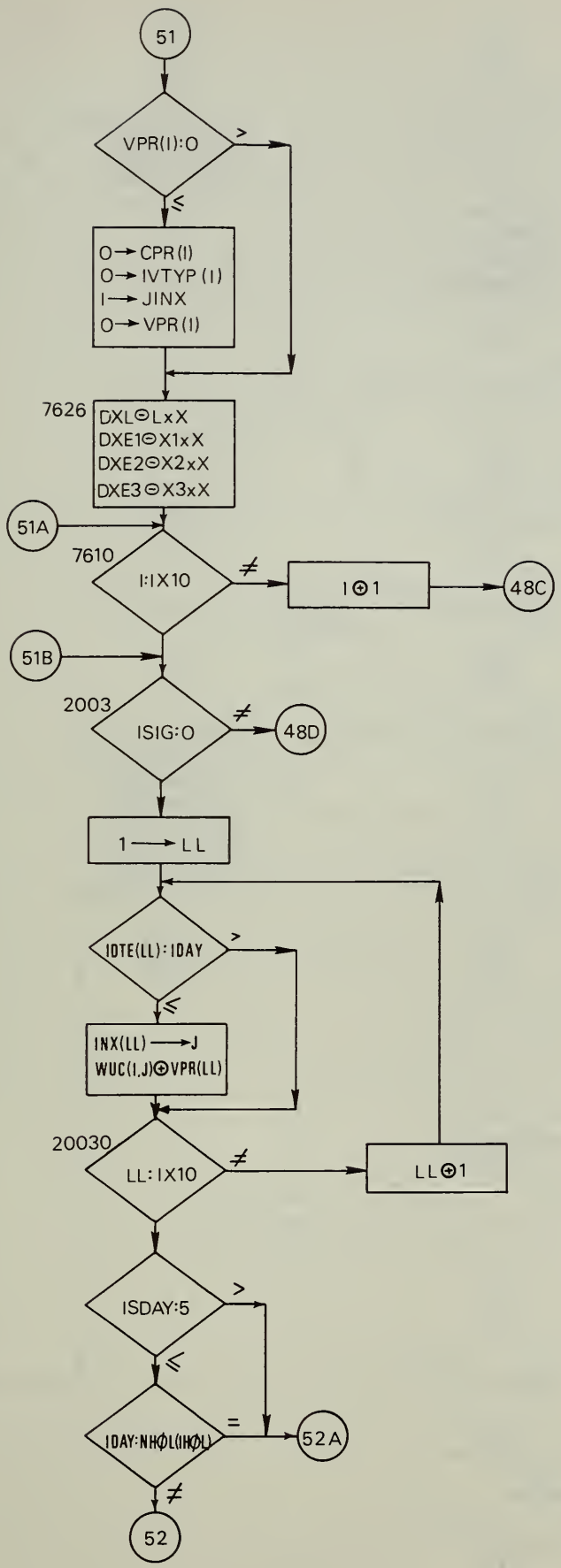

46
1000
ERROR
46A
222
I2 ⊕ 1
I2:IX10
≤
41A
>
223
0 → ISIG
1 → IX10
46 B
JIND(I):9
=
≠
INDX(I) → J
1 → K
46C
ICREW(I,K)
→ L
L:0
>
=
48 B
<
− L → L
TØJ(I) → Z
X=Z×PRØD(L)
VPR(I)ΘX
0 → TIME
VPR(I):0
<
>
=
1118
TIME=-VPR/PRØD
0 → CPR(I)
1 → JINX
Z=TØJ(I)-TIME
X=Z×PRØD(L)
0 → VPR(I)
1120
0 → CPR(I)
1130
CPR(I) ⊕ X
47

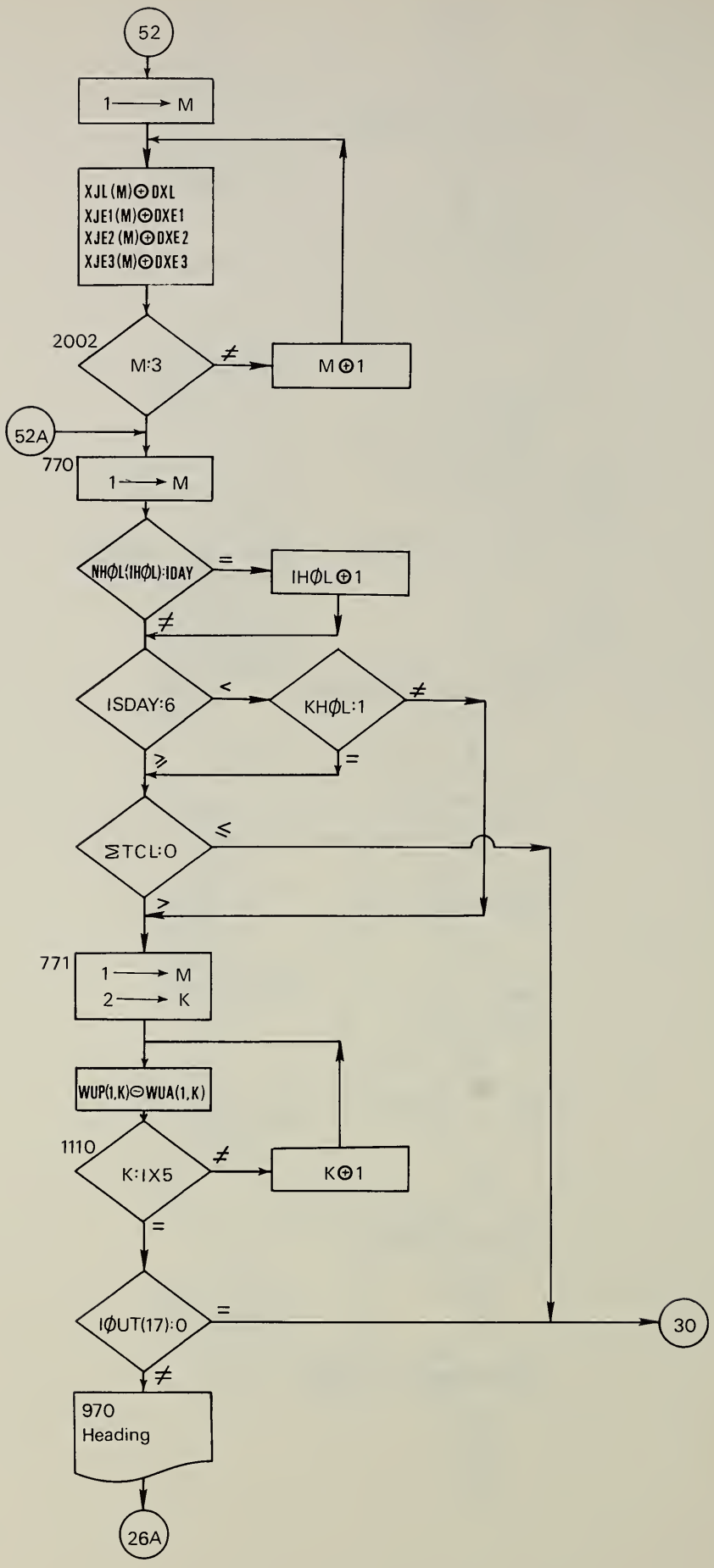

47
1122
1→M
WUA(M,J) ⊕ X
SLH(M,J) ⊕ I LAB(L)×Z
SE1H(M,J) ⊕ IEØ1(L)×Z
SE2H(M,J) ⊕ IEØ2(L)×Z
SE3H(M,J) ⊕ IEØ3(L)×Z
TCL(M,J)
IEQS(L)→N1
IEQN(L)→N2
N1→N
IEQ(N)→N3
EQH(M,J,N3) ⊕ INØ(N)×Z
EQTØT(M,J) ⊕ INØ(N)×ZX
EQC(N3)
760
N:N2
≠
N ⊕ 1
=
761
M:3
≠
M ⊕ 1
=
1124
TIME:0
≤
48A
1→N1
J:INDX(N1)
=
CPR(N1):0
>
JIND(N1):9
≠
IETC(N1) : IDAY
≠
TIME:4×TTJ (N1)
>
=
≤
=
=
≤
650
N1:IX10
≠
N1 ⊕ 1
48
Z=TIME-2×TTJ (N1)
Z→TIME
X=Z×PRØD(L)
VPR(N1)⊖X
0→Z1
VPR(N1) 0
<
>
651
Z=VPR(N1)/PRØD(L)
0→VPR(N1)
0→CPR(N1)
N1→JINX
Z=TIME-Z1
TIME⊖Z
X=Z×PRØD(L)
652
=
0→CPR(N1)
N1→JINX
0→TIME
653
CPR(N1) ⊕ X
0→TIME

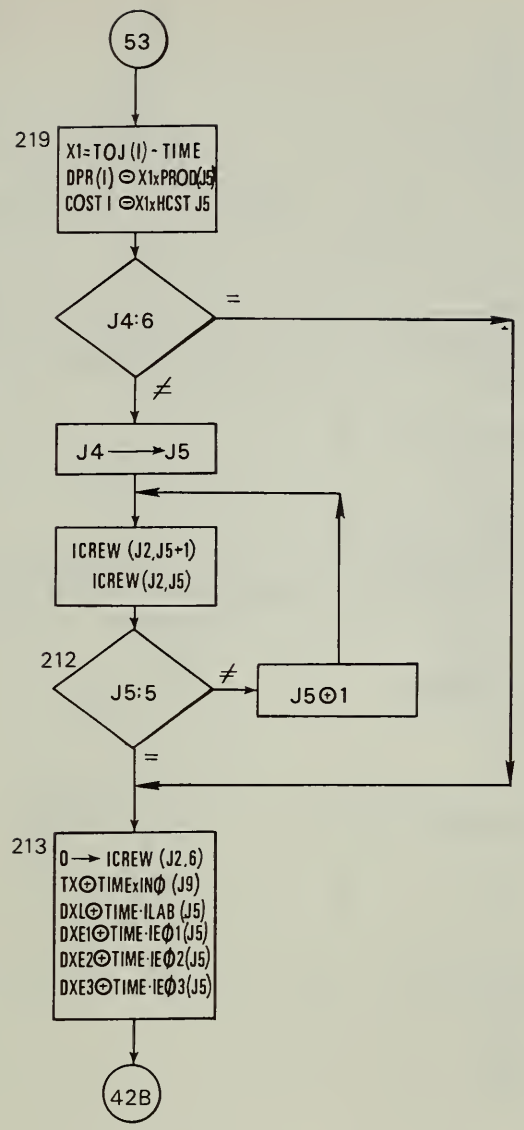

48
DXL⊕TIME×ILAB(L)
DXE1⊕TIME×IEØ1(L)
DXE2⊕TIME×IEØ2(L)
DXE3⊕TIME×IEØ3(L)
0 → ICREW (I,K)
IEQS (L) → N1
IEQN (L) → N2
N1 → N
NDEQT (N3)
⊕TIME×INØ (N)
1126
N:N2
≠
N⊕1
=
48A
762
K:6
≠
K⊕1
46C
=
48B
763
I:IX10
≠
I⊕1
46B
=
1 → JSIG
48D
7611
JSIG:0
=
51B
≠
0 → JSIG
1 → I
48C
CPR (I):0
≤
>
JIND (I):9
=
≠
ICREW(I,I)→J
J:0
=
51A
≠
49

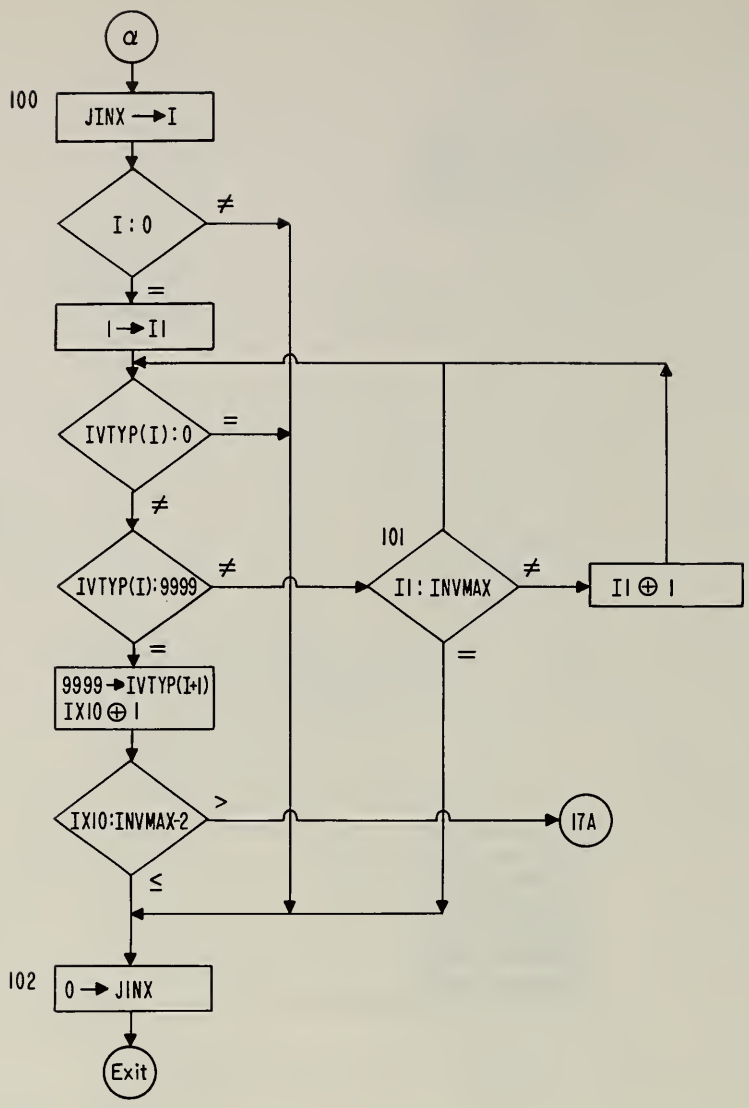

49
Z=4xTTJ (I)
ILAB (J)→L
IEO1 (J)→X1
IEO2 (J)→X2
IEO3 (J)→X3
X=DXL/L
X:Z
<
≥
X:8
>
8→X
≤
DXE1→Y1
DXE2→Y2
DXE3→Y3
7601
X1xX:Y1
≥
X2=X2+X1-Y1
Y1→X1
<
7600
XxX2:Y2
≥
X3=X3+X2-Y2
Y2→X2
<
7602
XxX3:Y3
≥
Z1= Y3/X3
<
7604
Z1:Z
<
≥
Z1→X
IEQS (J)→K1
IEQN (J)→K2
K1→K3
INDX (K3)→K4
NDEQT (K4)
XxINØ (K3)
<
X= NDEQT (K4)/INØ (K3)
X:Z
<
51A
≥
≥
7620
K3⊕1
≠
K3:K2
=
50

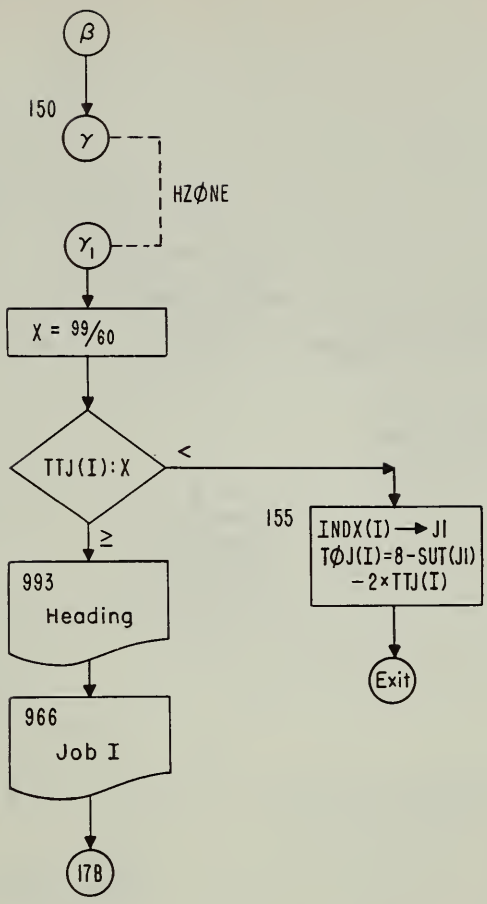

50
1 → JSIG
INDX (I) → K
XX=X-2xTTJ (I)
Z= PRØD(J) xXX
Z : VPR (I)
<
≥
XX= VPR(I)/PRØD(J)
X=XX+2xTTJ (I)
VPR (I) → Z
7622
1 → M
WUA (M,K) ⊕ Z
SLH (M,K) ⊕ LxXX
SE1H (M,K) ⊕ X1xXX
SE2H (M,K) ⊕ X2xXX
SE3H (M,K) ⊕ X3xXX
TCL (M,K)
K1 → N
INØ (N) : O
=
IEQ (N) → K3
EQH (M,K,K3)
EQTØT (M,K)
NDEQT K3 ⊖X·INØ(N)
N:K2
≠
N ⊕ 1
=
7624
M:3
≠
M ⊕ 1
=
VPR (I) ⊖ Z +
51

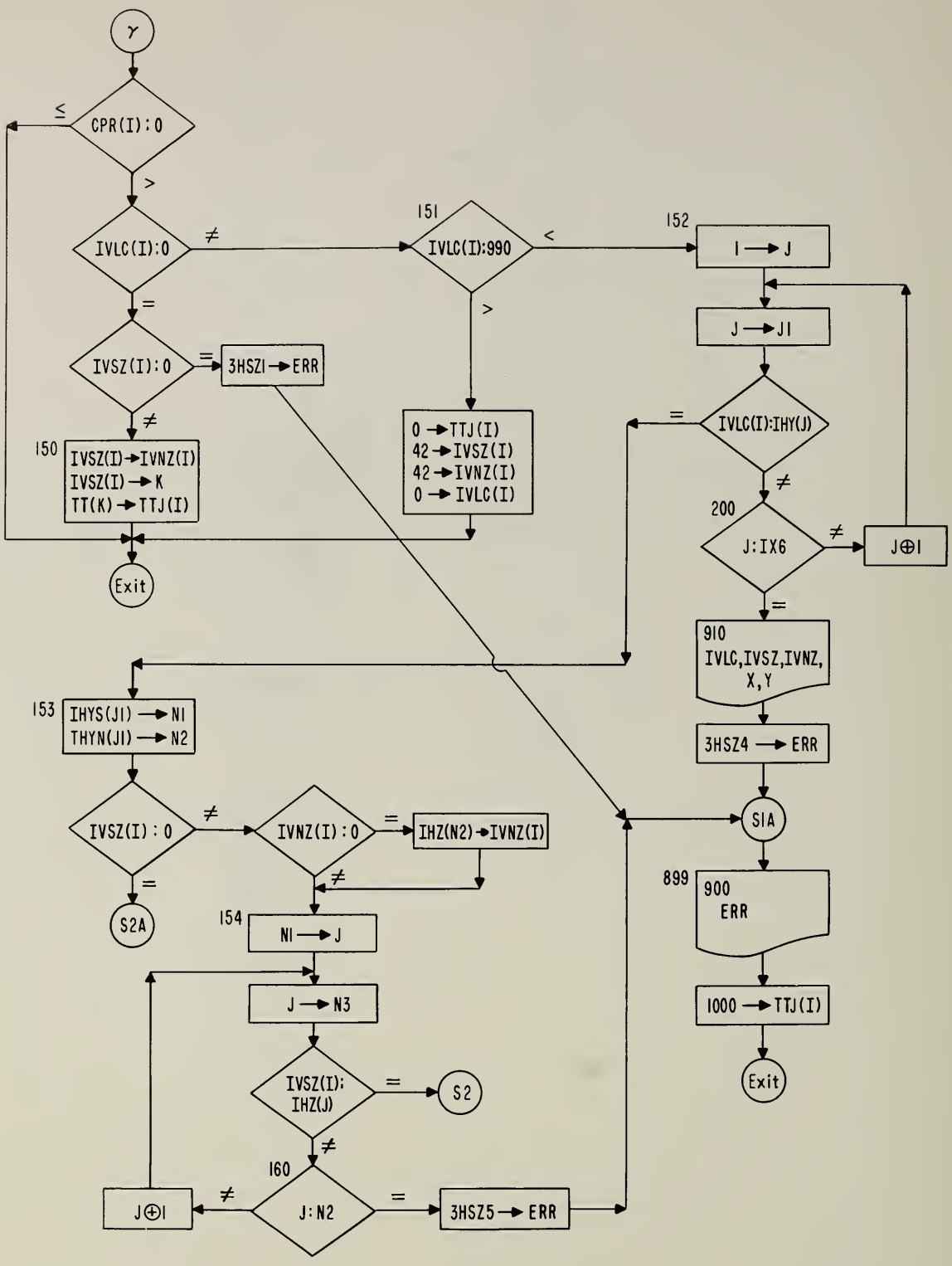

51
VPR(I):O
>
≤
O→CPR(I)
O→IVTYP(I)
I→JINX
O→VPR(I)
7626
DXL⊖LxX
DXE1⊖X1xX
DXE2⊖X2xX
DXE3⊖X3xX
51A
7610
I:IX10
≠
I⊕1
48C
51B
2003
ISIG:O
≠
48D
1→LL
IDTE(LL):IDAY
>
≤
INX(LL)→J
WUC(I,J)⊕VPR(LL)
20030
LL:IX10
≠
LL⊕1
ISDAY:5
>
≤
IDAY:NHΦL(IHΦL)
=
52A
≠
52

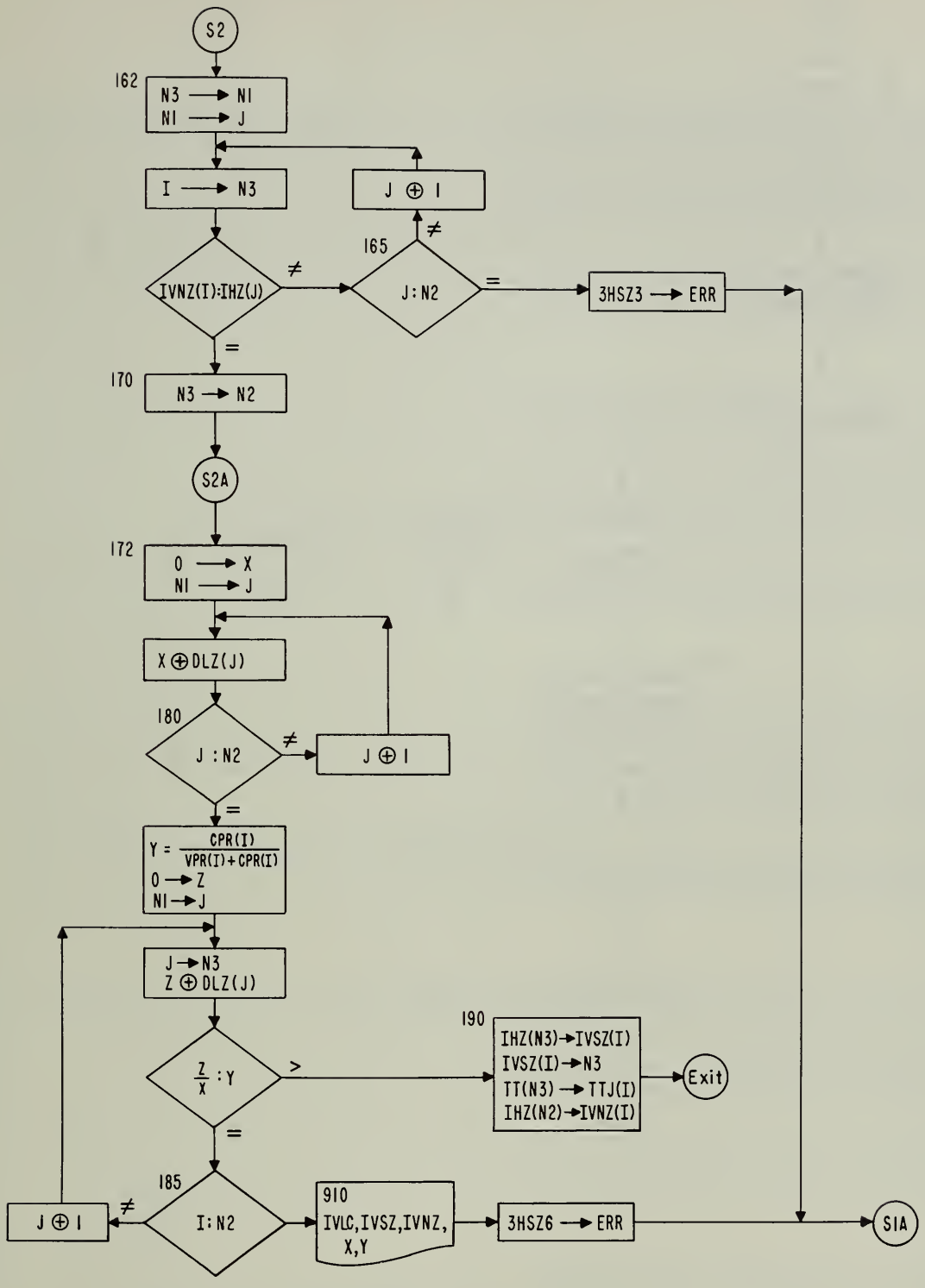

52
1 → M
XJL(M)⊕DXL
XJE1(M)⊕DXE1
XJE2(M)⊕DXE2
XJE3(M)⊕DXE3
2002
M:3
≠
M⊕1
52A
770
1 → M
NHØL(IHØL):IDAY
=
IHØL⊕1
≠
ISDAY:6
<
KHØL:1
≠
=
≥
≤TCL:0
≤
>
771
1 → M
2 → K
WUP(1,K)⊖WUA(1,K)
1110
K:IX5
≠
K⊕1
=
IØUT(17):0
=
30
≠
970
Heading
26A


53
219
X1=TOJ(I) - TIME
DPR(I) ⊖ X1xPROD(J5)
COST I ⊖X1xHCST J5
J4:6
=
≠
J4 → J5
ICREW (J2,J5+1)
ICREW(J2,J5)
212
J5:5
≠
J5⊕1
=
213
0 → ICREW (J2,6)
TX⊕TIMExINØ (J9)
DXL⊕TIME·ILAB (J5)
DXE1⊕TIME·IEØ1(J5)
DXE2⊕TIME·IEØ2(J5)
DXE3⊕TIME·IEØ3(J5)
42B


α
100
JINX → I
I : 0
≠
=
1 → I1
IVTYP(I) : 0
=
≠
IVTYP(I) : 9999
≠
101
I1 : INVMAX
≠
I1 ⊕ 1
=
9999 → IVTYP(I+1)
IX10 ⊕ 1
IX10 : INVMAX-2
>
17A
≤
102
0 → JINX
Exit


β
150
γ
HZØNE
γ1
X = 99/60
TTJ(I):X
<
155
INDX(I) → JI
TØJ(I)=8-SUT(JI)
-2×TTJ(I)
Exit
≥
993
Heading
966
Job I
178


γ
CPR(I):0
≤
>
IVLC(I):0
≠
151
IVLC(I):990
<
152
I → J
=
>
J → J1
IVSZ(I):0
=
3HSZI → ERR
≠
150
IVSZ(I) → IVNZ(I)
IVSZ(I) → K
TT(K) → TTJ(I)
0 → TTJ(I)
42 → IVSZ(I)
42 → IVNZ(I)
0 → IVLC(I)
IVLC(I):IHY(J)
=
≠
200
J:IX6
≠
J⊕1
=
910
IVLC,IVSZ,IVNZ,
X,Y
3HSZ4 → ERR
Exit
153
IHYS(J1) → N1
THYN(J1) → N2
IVSZ(I):0
≠
IVNZ(I):0
=
IHZ(N2) → IVNZ(I)
=
≠
S2A
154
N1 → J
J → N3
IVSZ(I):
IHZ(J)
=
S2
≠
160
J⊕1
≠
J:N2
=
3HSZ5 → ERR
S1A
899
900
ERR
1000 → TTJ(I)
Exit


S2
162
N3 → NI
NI → J
I → N3
J ⊕ I
≠
165
IVNZ(I):IHZ(J)
≠
J:N2
=
3HSZ3 → ERR
=
170
N3 → N2
S2A
172
0 → X
NI → J
X ⊕ DLZ(J)
180
J : N2
≠
J ⊕ I
=
Y = CPR(I) / VPR(I)+CPR(I)
0 → Z
NI → J
J → N3
Z ⊕ DLZ(J)
190
Z/X : Y
>
IHZ(N3) → IVSZ(I)
IVSZ(I) → N3
TT(N3) → TTJ(I)
IHZ(N2) → IVNZ(I)
Exit
=
185
J ⊕ I
≠
I:N2
910
IVLC,IVSZ,IVNZ,
X,Y
3HSZ6 → ERR
SIA

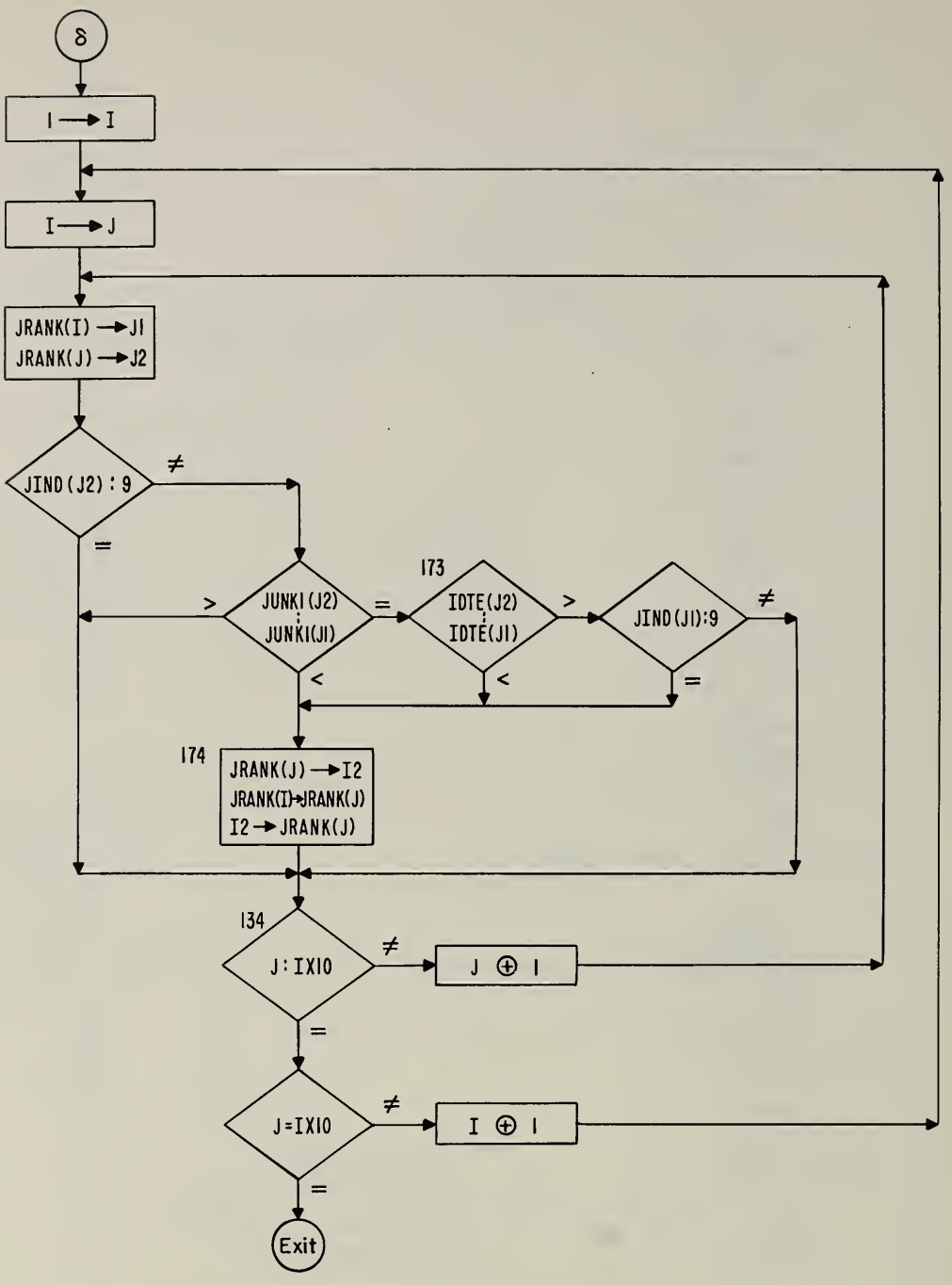

8
I → I
I → J
JRANK(I) → J1
JRANK(J) → J2
JIND(J2) : 9
≠
=
>
JUNKI(J2)
JUNKI(J1)
=
173
IDTE(J2)
IDTE(J1)
>
JIND(J1):9
≠
<
<
=
174
JRANK(J) → I2
JRANK(I) → JRANK(J)
I2 → JRANK(J)
134
J : IX10
≠
J ⊕ 1
=
J=IX10
≠
I ⊕ 1
=
Exit

Table 5
Computer Printout

```
@IT FOR HIWAY,HIWAY
UNIVAC 1108 FORTRAN V LEVEL   2206 0016 FS016B
THIS COMPILATION WAS DONE ON 12 FEB 69 AT 15:07:33


   MAIN PROGRAM

   STORAGE USED (BLOCK, NAME, LENGTH)

         0001    *CODE    013304
         0000    *DATA    024254
         0002    *BLANK   004346


   EXTERNAL REFERENCES (BLOCK, NAME)

         0003    HZONE
         0004    RANK
         0005    NRDC$
         0006    NIO1$
         0007    NIO2$
         0010    NPRT$
         0011    NSTOP$


   STORAGE ASSIGNMENT FOR VARIABLES (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001   001246 10L       0001   003362 100L      0000   022775 1000F     0001   012416 1003L     0001   012622 1005L
    0001   012654 1006L     0001   012672 1007L     0001   012675 1008L     0001   012724 1009L     0001   003424 101L
    0001   012737 1010L     0001   012750 1011L     0001   001551 1012G     0001   013021 1014L     0001   012442 1015L
    0001   013200 1016L     0001   013216 1018L     0001   003426 102L      0001   001563 1020G     0001   013221 1020L
    0001   012277 1024L     0001   013207 1026L     0001   012207 1028L     0001   001600 1031G     0001   002723 1036L
    0001   002727 1038L     0001   001611 1040G     0001   002731 1040L     0001   002766 1042L     0001   004537 1046L
    0001   001823 1047G     0001   004447 105L      0001   005542 106L      0001   001662 1070G     0001   001321 11L
    0001   005037 110L      0001   001711 1106G     0001   011243 1112L     0001   001722 1114G     0001   004565 112L
    0001   010040 1120L     0001   001733 1122G     0001   010045 1122L     0001   001741 1127G     0001   004570 113L
    0001   010042 1130L     0001   001753 1134G     0001   004603 114L      0001   001771 1144G     0001   002013 1157G
    0001   004632 116L      0001   002021 1164G     0001   004641 117L      0001   004650 118L      0001   004657 119L
    0001   002110 1214G     0001   004701 122L      0001   004737 123L      0001   002152 1233G     0001   004742 124L
    0001   002176 1245G     0001   005625 125L      0001   005640 126L      0001   002266 1273G     0001   006025 132L
    0001   002447 1363G     0001   005775 140L      0001   005570 141L      0001   00616A 142L      0001   002632 1443G
    0001   006203 145L      0001   002640 1452G     0001   006254 1454L     0001   006325 146L      0001   002653 1466G
    0001   006073 148L      0001   001347 15L       0001   003655 150L      0001   002701 1503G     0001   002751 1534G
    0001   002764 1541G     0001   003732 155L      0001   000070 156G      0001   005741 157L      0001   003054 1574G
    0001   006547 160L      0001   000071 161G      0001   006005 161L      0001   006361 162L      0001   003162 1635G
    0001   006461 164L      0001   006466 165L      0001   000101 167G      0001   006536 168L      0001   006370 169L
    0001   006616 171L      0001   005575 172L      0001   003372 1733G     0001   003342 175L      0001   005560 176L
    0001   000113 177G      0001   005544 177L      0001   006049 178L      0001   006563 179L      0001   006376 180L
    0001   006570 181L      0001   000307 2L        0001   001353 20L       0001   007016 200L      0001   011054 2003L
    0001   011076 20030L    0001   007167 2008L     0001   007032 201L      0001   007040 202L      0001   003576 2020G
    0001   012224 2022L     0001   007214 203L      0001   007267 205L      0001   012452 2050L     0001   007273 206L
    0001   000134 207G      0001   001363 21L       0001   007457 210L      0001   007411 211L      0001   007712 213L
    0001   007514 215L      0001   007575 217L      0001   004173 2172G     0001   007461 218L      0001   007657 219L
    0001   001435 22L       0001   000153 220G      0001   007536 220L      0001   004226 2204G     0001   007353 221L
    0001   007647 222L      0001   007755 223L      0001   000164 226G      0001   004455 2302G     0001   004560 2332G
    0001   000175 234G      0001   004665 2375G     0001   001476 24L       0001   000204 242G      0001   004761 2431G
```

```
0001 005044 2464G   0001 004750 250L    0001 005156 2504G   0001 000225 252G    0001 005202 2521G
0001 005256 2544G   0001 005403 2570G   0001 005426 2600G   0001 005521 2622G   0001 000252 266G
0001 005704 2673G   0001 005723 2703G   0001 006015 2737G   0001 000263 274G    0001 006016 2742G
0001 006521 275L    0001 006031 2751G   0001 001571 28L     0001 001602 29L     0001 007633 290L
0001 000325 3L      0001 006666 3006L   0001 003507 301L    0001 006161 3015G   0001 003526 302L
0001 006173 3023G   0001 003647 3030L   0001 006233 3037G   0001 003463 304L    0001 000303 305G
0001 002341 305L    0001 006350 3071G   0001 004232 3090L   0001 004402 3096L   0001 001652 31L
0001 002324 310L    0001 006412 3114G   0001 006434 3123G   0001 006442 3126G   0001 000321 315G
0001 002311 315L    0001 006503 3150G   0001 007635 318L    0001 001660 32L     0001 006657 3225G
0001 004102 325L    0001 006752 3256G   0001 000341 326G    0001 001670 33L     0001 007077 3302G
0001 007130 3316G   0001 007225 3343G   0001 007236 3351G   0001 007244 3354G   0001 007300 3371G
0001 007314 3377G   0001 001672 34L     0001 007343 3410G   0001 007377 3424G   0001 007465 3447G
0001 007472 3453G   0001 007560 3500G   0001 007707 3536G   0001 007763 3553G   0001 010000 3561G
0001 010122 3612G   0001 010155 3625G   0001 010212 3640G   0001 010360 3711G   0001 010420 3730G
0001 010567 3775G   0001 001472 39L     0001 000706 4L      0001 001777 40L     0001 010723 4021G
0001 010750 4032G   0001 011063 4066G   0001 002006 41L     0001 011121 4100G   0001 011204 4120G
0001 011240 4137G   0001 011306 4156G   0001 005234 420L    0001 005247 422L    0001 011420 4225G
0001 005303 428L    0001 002063 43L     0001 011643 4302G   0001 011654 4310G   0001 011703 4322G
0001 011725 4332G   0001 011743 4342G   0001 011750 4347G   0001 012010 4363G   0001 002126 44L
0001 003034 440L    0001 012062 4406G   0001 002106 441L    0001 003036 442L    0001 012103 4421G
0001 000606 450G    0001 005034 451L    0001 004542 452L    0001 004545 453L    0001 004735 454L
0001 000345 46L     0001 012236 4610G   0001 012243 4615G   0001 012300 4630G   0001 012315 4640G
0001 012347 4653G   0001 012371 4662G   0001 012377 4665G   0001 000460 47L     0001 012437 4705G
0001 012450 4715G   0001 012471 4723G   0001 012551 4742G   0001 000663 474G    0001 012630 4760G
0001 000575 48L     0001 000643 49L     0001 000727 5L      0001 012755 5020G   0001 013151 5060G
0001 002165 51L     0001 013260 5112G   0001 013261 5115G   0001 002353 53L     0001 002423 54L
0001 002426 55L     0001 002346 56L     0001 001071 577G    0001 002510 58L     0001 001046 6L
0001 003521 61L     0001 001112 611G    0001 001164 625G    0001 003202 63L     0001 003256 630L
0001 003261 631L    0001 003273 64L     0001 001205 640G    0001 000216 65L     0001 010315 650L
0001 010303 652L    0001 010310 653L    0001 001313 675G    0001 003100 69L     0001 001222 7L
0001 003102 70L     0001 002576 700L    0001 003013 709L    0001 003110 71L     0001 001341 710G
0001 003335 72L     0001 001375 730G    0001 001442 751G    0001 010521 7600L   0001 010535 7602L
0001 010546 7604L   0001 011052 7610L   0001 010411 7611L   0001 010401 762L    0001 010623 7620L
0001 010655 7622L   0001 011007 7624L   0001 011030 7626L   0001 010404 763L    0001 012135 766L
0001 011136 770L    0001 011174 771L    0001 012014 772L    0001 011232 773L    0001 012107 7730L
0001 012113 774L    0001 011342 775L    0001 001517 776G    0001 012036 776L    0001 011405 777L
0001 011673 780L    0001 011734 782L    0001 001116 8L      0001 003336 80L     0001 003440 81L
0001 004011 82L     0001 003776 820L    0001 004037 83L     0001 004033 830L    0001 004120 84L
0001 004142 840L    0001 012214 899L    0000 022331 900F    0000 022332 901F    0000 022333 902F
0000 022340 903F    0000 022344 904F    0000 022351 905F    0000 022353 906F    0000 022357 907F
0000 022367 908F    0000 022370 909F    0001 004275 91L     0001 004330 92L     0000 022372 920F
0001 012140 9200L   0000 022401 921F    0001 012146 9210L   0000 022411 922F    0001 012154 9220L
0000 022422 923F    0001 012162 9230L   0000 022433 924F    0001 012170 9240L   0000 022444 925F
0000 022454 926F    0000 022471 927F    0000 022475 928F    0000 022500 929F    0001 004333 93L
0000 022513 930F    0000 022517 931F    0000 022550 932F    0000 022554 933F    0000 022564 934F
0000 022571 935F    0000 022604 936F    0000 022622 937F    0001 012176 9370L   0001 004370 95L
0000 022632 950F    0000 022634 951F    0000 022643 952F    0000 022661 953F    0000 022671 954F
0000 022676 955F    0000 022700 956F    0000 022705 957F    0000 022710 958F    0000 022713 959F
0001 004414 96L     0000 022721 960F    0000 022727 961F    0000 022731 962F    0000 022733 963F
0000 022745 964F    0000 022751 965F    0000 022761 966F    0000 022765 967F    0000 022767 968F
0000 023002 969F    0000 023016 970F    0000 023032 971F    0000 023054 972F    0000 023100 973F
0000 023107 974F    0000 023112 975F    0000 023115 976F    0000 023121 979F    0000 023127 980F
0000 023133 982F    0000 023136 983F    0000 023142 984F    0000 023156 985F    0000 023163 986F
0000 023174 987F    0000 023202 988F    0000 023211 990F    0000 023214 991F    0000 023216 992F
0000 023221 993F    0000 023235 994F    0000 023244 995F    0000 023254 996F    0001 002355 9960L
0000 023263 997F    0000 023265 998F    0000 023270 999F    0000 R 022166 CE1   0000 R 022170 CE2
0000 R 022172 CE3   0000 R 022164 CF    0000 R 022179 CL    0000 R 013330 COST  0002 R 002542 CPR
0002 R 001215 DLZ   0000 R 013102 DPR   0000 R 000736 DWEEK 0000 R 022276 DXE1  0000 R 022277 DXE2
```

```
0000 R 022300 DXE3      0000 R 022275 DXL       0000 R 001311 EQC       0000 R 015456 EQH       0000 R 015324 EQTOT
0000 R 023760 HCOST     0000 R 023760 HCST      0000 R 000746 HE1       0000 R 000771 HE2       0000 R 001053 HOL
0000 R 002100 HT1       0000 R 002136 HT2       0002 I 000000 I         0000 I 022155 ICLR      0000 I 010146 ICREW
0000 I 002042 ICRN      0000 I 002004 ICRS      0000 I 022225 IDAY      0000 I 012200 IDELTA    0000 I 000014 IDM
0002 I 003444 IDTE      0000 I 002352 IEO1      0000 I 002530 IEO2      0000 I 002706 IEO3      0000 I 003576 IEQ
0000 I 001227 IEQI      0000 I 003420 IEQN      0000 I 001260 IEQNO     0000 I 003242 IEQS      0000 I 022263 IERR
0000 I 001652 IESD      0000 I 011752 IETC      0000 I 022272 IEX       0000 I 02213A IFULL     0000 I 001117 IGATE
0000 I 022154 IHOL      0002 I 000565 IHY       0002 I 000673 IHYN      0002 I 000630 IHYS      0002 I 000736 IHZ
0000 I 003044 ILAB      0000 I 022224 ILAST     0000 I 001710 ILD       0000   023532 INDEX     0000 I 023532 INDX
0000 I 004170 INO       0000 I 022147 INVMAX    0000 I 022230 INVSUM    0000 I 001163 IOUT      0000 I 023272 IPER
0000 I 022226 IPLAN     0000 I 022305 IPRINT    0000 I 005642 IROL      0000 I 005022 IRLC      0000 I 005522 IRMAX
0000 I 005402 IRMIN     0000 I 004562 IRMT      0000 I 006102 IRNT      0000 I 005262 IRNZ      0000 I 023272 IRPER
0000 I 005142 IRSZ      0000 I 023412 IRTPF     0000 I 023412 IRTYP     0000 I 005762 IS        0000 I 022156 ISDAY
0000 I 001373 ISEQ      0000 I 022237 ISIG      0000 I 022236 ISPEC     0000 I 001424 ITTYP     0000 I 007472 IVDL
0002 I 001640 IVLC      0000 I 007244 IVMAX     0000 I 007016 IVMIN     0000 I 006570 IVMT      0000 I 007720 IVNT
0002 I 004120 IVNZ      0002 I 002066 IVSZ      0000 I 006342 IVTYP     0000 I 000154 IW        0000 I 001462 IWA
0000 I 001520 IWB       0000 I 001556 IWC       0000 I 001614 IWD       0000 I 022151 IWEEK     0000 I 022246 IWX
0002 I 000001 IX10      0000 I 022175 IX4       0000 I 022137 IX4M      0000 I 022177 IX5       0000 I 022202 IX5C
0000 I 022141 IX5CM     0000 I 022204 IX5E      0000 I 022142 IX5EM     0000 I 022140 IX5M      0002 I 000002 IX6
0000 I 022143 IX6M      0000 I 022212 IX6Z      0000 I 022144 IX6ZM     0000 I 022216 IX8       0000 I 022145 IX8M
0000 I 022222 IX9       0000 I 022146 IX9M      0000 I 022150 IYFAR     0000 I 022162 I1        0000 I 022176 I2
0000 I 022213 I3        0000 I 022205 I4        0000 I 022206 I5        0000 I 022271 I8        0000 I 022153 J
0002 I 003216 JIND      0000 I 022152 JINX      0002 I 003672 JRANK     0000 I 022200 JSIG      0000 I 000067 JUNK
0002 I 000003 JUNK1     0000 I 000030 JUNK2     0000 I 022201 J1        0000 I 022207 J2        0000 I 022203 J3
0000 I 022211 J4        0000 I 022210 J5        0000 I 022261 J6        0000 I 022254 J7        0000 I 022253 J8
0000 I 022251 J9        0000 I 022157 K         0000 I 022235 KHOL      0000 I 000126 KON       0000 I 022214 K1
0000 I 022215 K2        0000 I 022252 K3        0000 I 022262 K4        0000 I 022323 K5        0000 I 022324 K6
0000 I 022325 K7        0000 I 022220 L         0000 I 022317 LL        0000 I 022256 L1        0000 I 022257 L2
0000 I 022260 L3        0000 I 022273 L4        0000 I 022274 L5        0000 I 022330 L6        0000 I 022255 L9
0000 I 022221 M         0000 I 000000 MON       0000 I 022160 MULT      0000 I 022303 N         0000 I 001342 NDEQT
0000 I 022242 NDE1      0000 I 022243 NDE2      0000 I 022244 NDE3      0000 I 022240 NDF       0000 I 022241 NDL
0000 I 022165 NE1       0000 I 022167 NE2       0000 I 022171 NE3       0000 I 022163 NF        0000 I 000140 NHOL
0000 I 022173 NL        0000 I 022161 NMULT     0000 I 022231 NSE1      0000 I 022232 NSE2      0000 I 022233 NSE3
0000 I 022227 NSF       0000 I 022234 NSL       0000 I 022223 NTST      0000 I 022327 NX        0000 I 022307 N1
0000 I 022310 N2        0000 I 022311 N3        0000 R 022250 PAYROL    0000 R 002174 PROD      0000 R 004702 RPR
0000 R 014136 SE1H      0000 R 014270 SE2H      0000 R 014422 SE3H      0000 R 014004 SLH       0000 R 022247 SUM
0000 R 022326 SUM1      0000 R 001746 SUT       0000 R 015172 TCE       0000 R 015040 TCL       0000 R 022301 TIME
0000 R 022302 TIMET     0000 R 012426 TOJ       0002 R 001474 TT        0002 R 002314 TTJ       0000 R 022304 TX
0002 R 002770 VPR       0000 R 012654 WPR       0000 R 014554 WUA       0000 R 022004 WUC       0000 R 014706 WUP
0000 R 022217 X         0000 R 021773 XJE1      0000 R 021776 XJE2      0000 R 022001 XJE3      0000 R 021770 XJL
0000 R 013856 XJUNK     0000 R 001015 XJUNK1    0000 R 006222 XMULT     0000 R 022316 XX        0000 R 022264 X1
0000 R 022265 X2        0000 R 022266 X3        0000 R 022320 X4        0000 R 022321 X5        0000 R 022270 X6
0000 R 022322 X7        0000 R 022267 X9        0000 R 022245 Y         0000 R 022313 YI        0000 R 022314 Y2
0000 R 022315 Y3        0000 R 022306 Z         0000 R 022312 Z1
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00100     1*    C******COMMON STATEMENTS*******************.                    99
00101     2*          COMMON I,IX10,IX6,JUNK1(370)                             100
00101     3*    C*******IX6**HIGHWAYS DEFINED BY ZONES                         110
00103     4*          COMMON IHY(35),IHYS(35),IHYN(35)                         111
00103     5*    C*******IX6Z** ZONES IN LISTED HIGHWAYS                        120
00104     6*          COMMON IHZ(175),DLZ(175)                                 121
00104     7*    C*******IX8** ZONES IN AREA                                    130
00105     8*          COMMON TT(100)                                           131
00105     9*    C*******IX10** JOBS IN INVENTORY                               140
00106    10*          COMMON IVLC(150),IVSZ(150),TTJ(150),CPR(150),VPR(150),JIND(150),I  141
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00106    11*        IDTE(150),JRANK(150),IVNZ(150)                                142
00106    12*   C******MISCELLANEOUS**                                             200
00107    13*        DIMENSION MON(12),IDM(12),JUNK2(31),JUNK(31),KON(10),NHOL(12),  201
00107    14*       1 IW(370),DWEEK(7),HE1(20),HE2(20),XJUNK1(30)                    202
00107    15*   C******INPUT-OUTPUT GATES**                                        220
00110    16*        DIMENSION HOL(36),IGATE(36),IOUT(36)                          222
00110    17*   C******IX4** EQUIPMENT INVENTORY IN DEPOT                          230
00111    18*        DIMENSION IEQI(25),IEQNO(25),EQC(25),NDEQT(25),ISEQ(25)       231
00111    19*   C******IX5** JOB TYPE                                              240
00112    20*        DIMENSION ITTYP(30),IWA(30),IWB(30),IWC(30),IWD(30),IESD(30),  241
00112    21*       1 ILD(30),SUT(30),ICRS(30),ICRN(30),HT1(30),HT2(30)            242
00112    22*   C******IX5C** BASIC CREWS                                          250
00113    23*        DIMENSION PROD(110),IEO1(110),IEO2(110),IEO3(110),ILAB(110),HCST(1 251
00113    24*       1110),HCOST(110),IEQS(110),IEQN(110)                           252
00113    25*   C******IX5E** BASIC CREW EQUIPMENT                                 260
00114    26*        DIMENSION IEQ(250),INO(250)                                   261
00114    27*   C******IX9** RECURRING JOBS                                        270
00115    28*        DIMENSION IRTYP(80),IRMT(80),RPR(80),IRLC(80),IRSZ(80),IRNZ(80),  271
00115    29*       1 IRMIN(80),IRMAX(80),IRDL(80),IS(80),IRPER(80),IRNT(80),XMULT(80),  272
00115    30*       2 IPER(80),IRTPE(80)                                          273
00115    31*   C******IX10** INVENTORY                                            280
00116    32*        DIMENSION IVTYP(150),IVMT(150),IVMIN(150),IVMAX(150),IVDL(150),IVN  281
00116    33*       1T(150),INDX(150),ICREW(150,6),IETC(150),IDELTA(150),TOJ(150),  282
00116    34*       2 INDEX(150),WPR(150),DPR(150),COST(150),XJUNK(150)             283
00116    35*   C******MULTIPLE DIMENSIONS**                                       290
00117    36*        DIMENSION SLH(3,30),SE1H(3,30),SE2H(3,30),SE3H(3,30),WUA(3,30),  291
00117    37*       1 WUP(3,30),TCL(3,30),TCE(3,30),EQTOT(3,30),EQH(3,30,25)       292
00120    38*        DIMENSION XJL(3),XJE1(3),XJE2(3),XJE3(3),WUC(3,30)            3710
00121    39*        EQUIVALENCE (IRPER,IPER),(IRTYP,IRTPE),(INDX,INDEX),(HCST,HCOST)  3800
00122    40*        IFULL=0                                                       3890
00123    41*        READ 905 (I,IX4M,IX5M,IX5CM,IX5EM,IX6M,IX6ZM,IX8M,IX9M,INVMAX,  3900
00123    42*       1 IYEAR)                                                       3901
00140    43*        PRINT 931 (IX4M,IX5M,IX5CM,IX5EM,IX6M,IX6ZM,IX8M,IX9M,INVMAX)  3910
00153    44*        IWEEK=0                                                       4000
00154    45*        JINX=0                                                        4005
00155    46*        DO 410 I=1,INVMAX                                             4100
00160    47*        DO 410 J=1,6                                                  4200
00163    48*    410 ICREW(I,J)=0                                                  4300
00166    49*        DO 400 I=1,INVMAX                                             4400
00171    50*        CPR(I)=.000001                                                4410
00172    51*    400 IVTYP(I)=9999                                                 4500
00174    52*        IX10=1                                                        4600
00175    53*        KON(10)=1                                                     4700
00176    54*        DO 16  I=1,9                                                  4800
00201    55*        J=10-I                                                        4900
00202    56*     16 KON(J)=8*KON(J+1)                                             5000
00204    57*        READ 905  J,(NHOL(I),I=1,12)                                  5100
00213    58*        IHOL=1                                                        5200
00214    59*        READ 909  ICLR,ISDAY,(DWEEK(I),I=1,7)                         5300
00224    60*        READ 900 (MON(I),I=1,12)                                      5400
00232    61*        READ 901 (IDM(I),I=1,12)                                      5500
00240    62*        K=0                                                           5501
00241    63*        DO 45  I=1,12                                                 5502
00244    64*        IF (NHOL(I).EQ.999)  GO TO 65                                 5503
00246    65*     45 K=K+1                                                         5504
00250    66*     65 PRINT 932 (NHOL(I),I=1,K)                                     5505
00256    67*        MULT=5-ISDAY                                                  5510
00257    68*        IF(MULT.LT.0) MULT=0                                          5515
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00261                NMULT=MULT                                                            5520
00262          1102  I1=0                                                                  5535
00263                IOUT(1)=1                                                             5600
00264                READ 900 (HOL(I),I=1,36)                                              5700
00272             1  READ 901 (IGATE(I),I=1,36)                                            5800
00300                IF (IOUT(1).LT.1) GO TO 2                                             5900
00302                PRINT 950 (HOL(1),(IGATE(I),I=1,36))                                  6000
00311             2  IF (IGATE(2).LT.1) GO TO 3                                            6100
00313                READ 901 (IOUT(I),I=1,36)                                             6200
00321             3  IF (IOUT(2).LT.1) GO TO 46                                            6300
00323                PRINT 950 (HOL(2),(IOUT(I),I=1,36))                                   6400
00332            46  IF (IGATE(3).LT.1) GO TO 47                                           6500
00334                READ 906  HE1(1),HE2(1),I,NF,CF                                       6600
00343                READ 906  HE1(2),HE2(2),I,NE1,CE1                                     6700
00352                READ 906  HE1(3),HE2(3),I,NE2,CE2                                     6800
00361                READ 906  HE1(4),HE2(4),I,NE3,CE3                                     6900
00370                READ 906  HE1(5),HE2(5),I,NL,CL                                       7000
00377            47  IF (IOUT(3).LT.1) GO TO 48                                            7100
00401                PRINT 974                                                             7110
00403                PRINT 963                                                             7120
00405                PRINT 975                                                             7130
00407                PRINT 928 (HE1(1),HE2(1),NF,CF)                                       7200
00415                PRINT 928 (HE1(2),HE2(2),NE1,CE1)                                     7210
00423                PRINT 928 (HE1(3),HE2(3),NE2,CE2)                                     7220
00431                PRINT 928 (HE1(4),HE2(4),NE3,CE3)                                     7230
00437                PRINT 928 (HE1(5),HE2(5),NL,CL)                                       7240
00445            48  IF (IGATE(4).LT.1) GO TO 49                                           7300
00447                DO 52  I=1,IX4M                                                       7400
00452                READ 906 (HE1(I),HE2(I),IEQI(I),IEQNO(I),EQC(I))                      7500
00452       C MAXIMUM EQUIPMENT INVENTORY                                                  7600
00461                IF (IEQI(I).EQ.999 ) GO TO 49                                         7700
00463            52  IX4=I                                                                 7800
00465                PRINT 929                                                             7810
00467                STOP                                                                  7820
00470            49  IF (IOUT(4).LT.1) GO TO 4                                             7900
00472                PRINT 950 (HOL(4))                                                    8000
00475                DO 50       I=1,IX4                                                   8100
00500                PRINT 976 (HE1(I),HE2(I),I,IEQI(I),IEQNO(I),EQC(I))                   8200
00510            50  CONTINUE                                                              8300
00512             4  IF (IGATE(5).LT.1) GO TO 20                                           8400
00514                IF (IOUT(5).EQ.1)  PRINT 933                                          8410
00517                I=1                                                                   8500
00517       C JOB TYPE INDEX                                                               8600
00520                I1=1                                                                  8700
00520       C CREW TYPE INDEX OVER ALL NOT WITHIN JOB                                      8800
00521                I2=1                                                                  8900
00521       C EQUIPMENT TYPE INDEX                                                         9000
00522             5  READ 902 (ITTYP(I),IWA(I),IWB(I),IWC(I),IWD(I),IESD(I),ILD(I),SUT(    9100
00522               1I),HT1(I),HT2(I))                                                     9200
00536                ICRS(I)=I1                                                            9300
00537                IF (ITTYP(I).EQ.9999) GO TO 20                                        9400
00541                IX5=I                                                                 9500
00542                IF(I.GT.IX5M)  GO TO 9200                                             9510
00542       C MAXIMUM JOB TYPES                                                            9600
00544                IF (IOUT(5).LT.1) GO TO 6                                             9700
00546                PRINT 951 (HT1(I),HT2(I),ITTYP(I),I,IWA(I),IWB(I),IWC(I),IWD(I),IE    9800
00546               1SD(I),ILD(I),SUT(I),ICRS(I))                                          9900
00564                PRINT 952                                                            10000
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00566           6 JSIG=0                                                        10100
00566     C CREW STARTING INDEX                                                 10200
00567           READ 903  JUNK1(1),PROD(I1),IE01(I1),IE02(I1),IE03(I1),ILAB(I1),(J  10300
00567          1UNK1(J),J=2,14),JUNK2(1),PROD(I1+1),IE01(I1+1),IE02(I1+1),IE03(I1+  10400
00567          21),ILAB(I1+1),(JUNK2(J1),J1=2,14)                               10500
00615         8 IEQS(I1)=I2                                                     10600
00616           ICRN(I)=I1                                                      10700
00617           IX5C=I1                                                         10800
00620           IF( I1.GE.IX5CM)  GO TO 9210                                    10810
00620     C MAXIMUM BASIC CREW                                                  10900
00622           J3=I2                                                           11000
00623           HCST(I1)=IE01(I1)*CE1+IE02(I1)*CE2+IE03(I1)*CE3+ILAB(I1)*CL     11100
00624           DO  9  J1=2,16,2                                                11200
00627           IF (JUNK1(J1).GE.97) GO TO 10                                   11300
00631           IF (JUNK1(J1).EQ.0)  GO TO 10                                   11400
00633           IEQN(I1)=I2                                                     11500
00634           IX5E=I2                                                         11600
00635           IF (I2.GT.IX5EM)  GO TO 9220                                    11610
00637           DO  13  I4=1,IX4                                                11700
00642           I5=I4                                                           11800
00643           IF (IEQI(I5).EQ.JUNK1(J1)) GO TO 7                              11900
00645        13 CONTINUE                                                        12000
00647           GO TO 9370                                                      12100
00650         7 IEQ(I2)=I5                                                      12200
00651           INO(I2)=JUNK1(J1+1)                                             12300
00652           HCST(I1)=HCST(I1)+INO(I2)*EQC(I5)                               12400
00653           I2=I2+1                                                         12500
00653     CLIMIT ON PRINT                                                       12600
00654         9 J2=J1+2                                                         12700
00656        10 IF (IOUT(5).LT.1) GO TO 11                                      12800
00660           J5=I2-1                                                         12900
00661           PRINT 953 (I,I1,PROD(I1),IE01(I1),IE02(I1),IE03(I1),ILAB(I1),HCST(  13000
00661          1I1),IEQS(I1),IEQN(I1),((IEQ(J4),INO(J4)),J4=J3,J5))             13100
00702        11 I1=I1+1                                                         13200
00703           IF (JUNK1(J2).EQ.99) GO TO 15                                   13300
00705           IF (JSIG.EQ.1) GO TO 6                                          13400
00707        14 DO 12   J1=1,14                                                 13500
00712        12 JUNK1(J1)=JUNK2(J1)                                             13600
00714           JSIG=1                                                          13700
00715           GO TO 8                                                         13800
00716        15 I=I+1                                                           13900
00717           GO TO 5                                                         14000
00720        20 IF (IGATE(6).LT.1)  GO TO 24                                    14100
00722           I=1                                                             14200
00722     C  INDEX-INDEX                                                        14300
00723           I1=1                                                            14400
00723     C  LIST INDEX                                                         14500
00724        21 IHYS(I)=I1                                                      14600
00725           READ 904  IHY(I), (JUNK1(K),XJUNK(K) ,K=1,11)                   14700
00735           IF (I.GT.IX6M)  GO TO 9230                                      14710
00737           IF (IHY(I).EQ.999) GO TO 24                                     14800
00741           K=I-1                                                           14900
00742           IF  (K.EQ.0)   GO TO 22                                         14950
00744           IF (IHY(I).NE.IHY(K)) GO TO 22                                  15000
00746           I=K                                                             15100
00747        22 IX6=I                                                           15200
00750           DO 23 K=1,11                                                    15300
00750     C MAXIMUM HIGHWAY LIST                                                15400
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00753   185.          IF (JUNK1(K).EQ.999)  GO TO 39                          15500
00755   186.          IHZ(I1)=JUNK1(K)                                        15600
00756   187.          DLZ(I1)=XJUNK(K)                                        15700
00757   188.          IHYN(I)=I1                                              15800
00760   189.          IX6Z=I1                                                 15900
00761   190.          IF (I1.GT.IX6ZM)  GO TO 9240                            15910
00763   191.       23 I1=I1+1                                                 16000
00765   192.       39 I=I+1                                                   16100
00766   193.          GO TO 21                                                16200
00767   194.       24 IF (IOUT(6).LT.1) GO TO 28                              16300
00771   195.          PRINT 995                                               16310
00773   196.          PRINT 974                                               16320
00775   197.          DO 25  J=1,IX6                                          16400
01000   198.          I1=IHYS(J)                                              16500
01001   199.          I2=IHYN(J)                                              16600
01002   200.          I3=J                                                    16700
01003   201.          PRINT 954(HOL(6),I3,IHY(I3),I1,I2,(IHZ(I4),I4=I1,I2))  16800
01016   202.          PRINT 955(DLZ(I4),I4=I1,I2)                             16900
01024   203.       25 CONTINUE                                                17000
01024   204.       28 IF (IGATE(7).LT.1)  GO TO 34                            17100
01030   205.          DO 37 I=1,366                                           17200
01033   206.       37 IW(I)=0                                                 17300
01035   207.       29 READ 905  I,(JUNK(K),K=1,25)                            17400
01044   208.          IF (I.EQ.999)  GO TO 32                                 17410
01046   209.          DO 31  K=1,25                                           17500
01051   210.          IF (JUNK(K)=998) 30,29,32                               17600
01054   211.       30 J=JUNK(K)                                               17700
01055   212.          IF (IW(J).EQ.0) GO TO 31                                17800
01057   213.          PRINT 959 (J,IW(J),I)                                   17900
01064   214.       31 IW(J)=1                                                 18000
01066   215.          GO TO 29                                                18100
01067   216.       32 DO 33 I=1,369                                           18200
01072   217.          IF (IW(I+1).GT.0) GO TO 33                              18300
01074   218.          IW(I+1)=IW(I)                                           18400
01075   219.       33 CONTINUE                                                18500
01077   220.       34 IF (IOUT(7).LT.1) GO TO 40                              18600
01101   221.          PRINT 956                                               18700
01103   222.          I=4                                                     18800
01104   223.          JUNK1(1)=1                                              18900
01105   224.          DO 38  J=1,30                                           19000
01110   225.       38 JUNK1(J+1)=JUNK1(J)+1                                   19100
01112   226.          PRINT 957 (JUNK1(J),J=1,31)                             19200
01120   227.          PRINT 965 (IW(I1),I1=1,3)                               19300
01126   228.          DO 36 J=1,12                                            19400
01131   229.          K=J                                                     19500
01132   230.          K1=IDM(J)                                               19600
01133   231.          DO 35 K2=1,K1                                           19700
01136   232.          JUNK(K2)=IW(I)                                          19800
01137   233.       35 I=I+1                                                   19900
01141   234.          PRINT 958 (MON(K),(JUNK(K2),K2=1,K1))                   20000
01150   235.       36 CONTINUE                                                20100
01152   236.       40 IF (IGATE(8).LT.1) GO TO 43                             20200
01154   237.          K=1                                                     20300
01155   238.       41 READ 901 (JUNK1(J),J=1,40)                              20400
01163   239.          DO 42  J=1,40                                           20500
01166   240.          IF (JUNK1(J).EQ.98) GO TO 43                            20600
01170   241.          IX8=K                                                   20700
01171   242.          X=JUNK1(J)                                              20800
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01172   243*          TT(K)=X/60.0                                                  20900
01173   244*          IF (JUNK1(J).EQ.99)     TT(K)=99999.9                         20910
01175   245*          IF (JUNK1(J).EQ.0)      TT(K)=-99999.9                        20920
01177   246*       42 K=K+1                                                         21000
01201   247*          GO TO 41                                                      21100
01202   248*       43 IF (IOUT(8).LT.1)  GO TO 51                                   21200
01204   249*          PRINT 950                                                     21210
01206   250*          PRINT 960                                                     21220
01210   251*          PRINT 975                                                     21230
01212   252*          K=1                                                           21300
01213   253*      441 DO 44 L=1,10                                                  21310
01216   254*          JUNK1(L)=K                                                    21400
01217   255*          XJUNK(L)=TT(K)                                                21410
01220   256*          IF(TT(K).GT.0.0)  GO TO 44                                    21420
01222   257*          TT(K)=0.0                                                     21430
01223   258*          JUNK1(L)=99999                                                21440
01224   259*       44 K=K+1                                                         21500
01226   260*          M=10                                                          21550
01227   261*          IF (K.GT.94)  M=4                                             21600
01231   262*          PRINT 992 ((JUNK1(L),XJUNK(L)),L=1,M)                         21650
01240   263*          IF (K.LE.94)  GO TO 441                                       21700
01242   264*       51 IF (IGATE(9).LT.1)  GO TO 55                                  21800
01242   265*    C READ RECURRING JOBS                                               21900
01244   266*          DO 54  I=1,IX9M                                               22000
01247   267*          READ 907 (IRTYP(I),IRMT(I),RPR(I),IRLC(I),IRSZ(I),IRNZ(I),IRMIN(I)  22100
01247   268*         1,IRMAX(I),IRDL(I),IS(I),IRPER(I),IRNT(I))                     22200
01265   269*          IF(IRTPE(I).EQ.9999.AND.I.EQ.1) IX9=1                         22300
01267   270*          IF (IRTPE(I).EQ.9999)   GO TO 55                              22400
01271   271*          IX9=I                                                         22500
01272   272*          DO 53  J=1,IX5                                                22600
01275   273*          IF (IRTPE(I).NE.ITTYP(J))  GO TO 53                           22700
01277   274*          IF (IESD(J).LT.ILD(J))  GO TO 56                              22800
01301   275*          NTST=0                                                        22900
01302   276*          IF (IRPER(J).NE.0)  GO TO 315                                 23000
01304   277*          PRINT 969                                                     23200
01306   278*          STOP                                                          23300
01307   279*      315 IF(IESD(J)-365+NTST*IPER(J)) 300,305,310                      23400
01312   280*      300 NTST=NTST+1                                                   23500
01313   281*          GO TO 315                                                     23600
01314   282*      310 IS(I)=1                                                       23700
01315   283*          XMULT(I)=(IESD(J)-365+NTST*IPER(J))/IPER(J)                   23800
01316   284*          GO TO 54                                                      23900
01317   285*      305 IS(I)=1                                                       24000
01320   286*          XMULT(I)=1.0                                                  24100
01321   287*          GO TO 54                                                      24200
01322   288*       56 IS(I)=IESD(J)                                                 24300
01323   289*          XMULT(I)=1.0                                                  24400
01324   290*          GO TO 54                                                      24500
01325   291*       53 CONTINUE                                                      24600
01326  *DIAGNOSTIC* THE TRANSFER TO 9960 IS BAD BECAUSE 9960 IS NOT IN THE INNERMOST DO OF A NEST.
01327   292*     9960 PRINT 996                                                     24700
01331   293*          PRINT 966 (I,IRTYP(I),IRMT(I),RPR(I),IRLC(I),                 24800
01331   294*         1IRSZ(I),IRNZ(I),IRMIN(I),IRMAX(I),IRDL(I),IS(I),IRPER(I),IRNT(I))  24801
01350   295*          STOP                                                          24810
01351   296*       54 CONTINUE                                                      24900
01353   297*          GO TO 9960                                                    25100
01354   298*       55 IF (IOUT(9).LT.1)  GO TO 58                                   25200
01356   299*          PRINT 994                                                     25300
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01360  300•          PRINT 974                                                    25310
01362  301•          DO 57 I=1,IX9                                                25400
01365  302•          PRINT 966 (I,IRTYP(I),IRMT(I),RPR(I),IRLC(I),                25550
01365  303•         1IRSZ(I),IRNZ(I),IRMIN(I),IRMAX(I),IRDL(I),IS(I),IRPER(I),IRNT(I))  25600
01404  304•       57 CONTINUE                                                     25700
01406  305•       58 JLAST=0                                                      25800
01407  306•          PRINT 931 (IX4M,IX5M,IX5CM,IX5EM,IX6M,IX6ZM,IX8M,IX9M)       25810
01421  307•          PRINT 935 (IX4,IX5,IX5C,IX5E,IX6,IX6Z,IX8,IX9)               25812
01433  308•          IDAY=0                                                       25900
01434  309•          ISDAY=ISDAY+1                                                26000
01435  310•          II=2                                                         26100
01436  311•          IF (ICLR.EQ.0) II=3                                          26200
01440  312•          IPLAN=0                                                      26210
01441  313•          I2=1                                                         26220
01441  314•     C ENTRY AT DAY CHANGE                                             26225
01442  315•      700 DO 703 I=I2,II                                              26300
01445  316•          XJL(I)=0.0                                                   26310
01446  317•          XJE1(I)=0.0                                                  26320
01447  318•          XJE2(I)=0.0                                                  26330
01450  319•          XJE3(I)=0.0                                                  26340
01451  320•          DO 702 J=1,IX5                                               26500
01451  321•     C OVER ALL JOB TYPES                                              26600
01454  322•          WUC(I,J)=0.0                                                 26650
01455  323•          SLH(I,J)=0.                                                  26700
01456  324•          SE1H(I,J)=0.                                                 26800
01457  325•          SE2H(I,J)=0.                                                 26900
01460  326•          SE3H(I,J)=0.                                                 27000
01461  327•          WUA(I,J)=0.                                                  27100
01462  328•          TCL(I,J)=0.                                                  27200
01463  329•          TCE(I,J)=0.                                                  27300
01464  330•          EQTOT(I,J)=0.                                                27400
01465  331•     1104 DO 701 K=1,IX4                                               27500
01470  332•          ISEQ(K)=0                                                    27510
01471  333•      701 EQH(I,J,K)=0.                                                27600
01473  334•      702 CONTINUE                                                     27700
01475  335•      703 CONTINUE                                                     27800
01477  336•          NSF=0                                                        27810
01500  337•          II=0                                                         27811
01501  338•          INVSUM=0                                                    A27811
01502  339•          DO 1038 I=1,IX10                                             27812
01505  340•          IF(VPR(I).LE.0.0)  IVTYP(I)=0                                27813
01507  341•          J=IVTYP(I)                                                   27814
01510  342•          IF (J.EQ.0)  GO TO 1036                                      27815
01512  343•          IF (J.EQ.9999)  GO TO 1040                                   27816
01514  344•          INVSUM=INVSUM+1                                             A27816
01515  345•          II=0                                                         27817
01516  346•          GO TO 1038                                                   27818
01517  347•     1036 IF (II.EQ.0)  II=I                                           27819
01521  348•     1038 CONTINUE                                                     27820
01523  349•     1040 IF (II.NE.0)  IX10=II                                        27821
01525  350•          IVTYP(IX10)=9999                                             27822
01526  351•          NSE1=0                                                       27824
01527  352•          NSE2=0                                                       27830
01530  353•          NSE3=0                                                       27840
01531  354•          NSL=0                                                        27850
01532  355•          KHOL=0                                                       27860
01533  356•          DO 1042  I=1,IX10                                            27861
01536  357•          IF(VPR(I).GT.0.0)  GO TO 1042                                27862
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01540   358*          DO 1043  J=1,6                                          27863
01543   359*          ICREW(I,J)=0                                            27864
01544   360*     1043 CONTINUE                                                27865
01546   361*     1042 CONTINUE                                                27866
01550   362*          IF(IPLAN.EQ.1)  GO TO 709                               27868
01552   363*          IDAY=IDAY+1                                             27870
01553   364*          ISDAY=ISDAY+1                                           27880
01554   365*          IF(ISDAY.EQ.8)  ISDAY=1                                 A27880
01556   366*          IF (IDAY.EQ.1)  GO TO 69                                27881
01560   367*      709 IF (IDAY.NE.NHOL(IHOL))  GO TO 442                      27890
01562   368*          IF (ISDAY.LT.6)  GO TO 440                              27900
01564   369*          NHOL(IHOL)=NHOL(IHOL)+1                                 27910
01565   370*          GO TO 442                                               27920
01566   371*      440 KHOL=1                                                  27930
01567   372*      442 IF (ISDAY.NE.1) GO TO 69                                27940
01571   373*          IF (IDAY.EQ.1)  GO TO 69                                27952
01573   374*          DO 444 I=I,IX10                                         27960
01576   375*          JIND(I)=0                                               27970
01577   376*          IF (IVTYP(I).EQ.0)  JIND(I)=9                           27980
01601   377*      444 CONTINUE                                                27990
01603   378*          ISPEC=0                                                 27993
01604   379*          MULT=5                                                  28000
01605   380*          IF (NHOL(IHOL).LT.IDAY+5)  MULT=4                       28010
01607   381*          NMULT=MULT                                              28015
01610   382*       69 ISIG=1                                                  28020
01611   383*       70 IF (ILAST.GT.IDAY)  GO TO 80                            28800
01611   384*    C READ REGULAR JOBS                                           28900
01613   385*          GO TO 100                                               29000
01614   386*       71 READ 907 (IVTYP(I),IVMT(I),VPR(I),IVLC(I),IVSZ(I),IVNZ(I),IVMIN(I)  29300
01614   387*         1,IVMAX(I),IVDL(I),IDTE(I),IVNT(I))                      29400
01631   388*          IVDL(I)=IVDL(I)+IDTE(I)                                 29500
01632   389*          IF(IVTYP(I).EQ.9999) GO TO 63                           29600
01634   390*          DO 62 K=1,IX5                                           29700
01637   391*          INDX(I)=K                                               29800
01640   392*          IF (INVSUM.GT.INVMAX-1)  GO TO 80                       29810
01642   393*          IF (IVTYP(I).EQ.ITTYP(K))  GO TO 63                     29900
01644   394*       62 CONTINUE                                                30000
01646   395*          GO TO 302                                               30100
01647   396*       63 IF (IDTE(I).GE.ILAST)  GO TO 630                        30200
01651   397*          PRINT 936  (ILAST,IDTE(I))                              30210
01655   398*          PRINT 966 (I,IVTYP(I),IVMT(I),VPR(I),IVLC(I),           30220
01655   399*         1IVSZ(I),IVNZ(I),IVMIN(I),IVMAX(I),IVDL(I),IDTE(I))      30230
01672   400*          GO TO 631                                               30290
01673   401*      630 ILAST=IDTE(I)                                           30300
01674   402*      631 IF (IDTE(I).GT.365)  GO TO 80                           30400
01676   403*          JSIG=0                                                  30500
01677   404*          GO TO 150                                               30600
01700   405*       64 IF (IOUT(IO).LT.1)  GO TO 72                            30700
01702   406*          PRINT 966 (I,IVTYP(I),IVMT(I),VPR(I),IVLC(I),           30800
01702   407*         1IVSZ(I),IVNZ(I),IVMIN(I),IVMAX(I),IVDL(I),IDTE(I),INDX(I))  30900
01720   408*       72 GO TO 70                                                31000
01721   409*       80 ISIG=2                                                  31100
01721   410*    C ENTRY FOR RECURRING JOBS                                    31200
01722   411*          J=1                                                     31300
01723   412*      175 IF (IS(J).LE.7)  GO TO 100                              31400
01725   413*      704 IF((IS(J)+IFULL).NE.(IDAY+7))  GO TO 84                 31500
01727   414*      100 I=JINX                                                  31550
01730   415*          IF(I.NE.0)  GO TO 102                                   31575
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01732   416*          DO 101  II=1,INVMAX                                    31600
01735   417*          I=II                                                   31700
01736   418*          IF (IVTYP(I).EQ.0000)  GO TO 102                       31800
01740   419*          IF (IVTYP(I).NE.9999)  GO TO 101                       31900
01742   420*          IVTYP(I+1)=9999                                        32000
01743   421*          IX10=IX10+1                                            32100
01744   422*          IF (IX10  .GT.INVMAX-2)  GO TO 325                     32200
01746   423*          GO TO 102                                              32300
01747   424*      101 CONTINUE                                               32600
01751   425*      102 JINX=0                                                 32650
01752   426*          IF (ISIG-2)    71,81,103                               32700
01755   427*      103 IF (ISIG-4)  91,93,96                                  32800
01760   428*       81 IF (IRTYP(J).NE.2)  GO TO 302                          32900
01762   429*          IF(IS(J).LT.7)  GO TO 304                              33000
01764   430*          IF (ISDAY.GT.5)  GO TO 61                              33100
01766   431*          GO TO 301                                              33200
01767   432*      304 J1=IS(J)+ISDAY-1                                       33300
01770   433*          J2=J1/7                                                33400
01771   434*          J3=J1-7*J2                                             33500
01772   435*          IF (J3.EQ.6.OR.J3.EQ.0)  GO TO 61                      33600
01774   436*      301 IF ( IS(J).NE.NHOL(IHOL))  GO TO 302                   33700
01776   437*       61 IS(J)=IS(J)+IPER(J)                                    33710
01777   438*          GO TO 175                                              33720
02000   439*      302 IF (INVSUM.GT.INVMAX-2)  GO TO 325                     33730
02002   440*          IVTYP(I)=IRTYP(J)                                      33800
02003   441*          IVMT(I)=IRMT(J)                                        33900
02004   442*          VPR(I)=XMULT(J)*RPR(J)                                 34000
02005   443*          XMULT(J)=1.0                                           34100
02006   444*          IVLC(I)=IRLC(J)                                        34200
02007   445*          IVSZ(I)=IRSZ(J)                                        34300
02010   446*          IVNZ(I)=IRNZ(J)                                        34400
02011   447*          IVMIN(I)=IRMIN(J)                                      34500
02012   448*          IVMAX(I)=IRMAX(J)                                      34600
02013   449*          IVDL(I)=IRDL(J)+IS(J)                                  34700
02014   450*          IDTE(I)=IS(J)                                          34800
02015   451*          IVNT(I)=IRNT(J)                                        34900
02016   452*          JSIG=1                                                 35000
02017   453*          DO 303 K=1,IX5                                         35300
02022   454*          INDX(I)=K                                              35400
02023   455*          IF (IVTYP(I).EQ.ITTYP(K))  GO TO 150                   35500
02025   456*      303 CONTINUE                                               35600
02027   457*          PRINT 927                                              35700
02031   458*          PRINT 966 (I,IVTYP(I),IVMT(I),VPR(I),IVLC(I),          35800
02031   459*         1IVSZ(I),IVNZ(I),IVMIN(I),IVMAX(I),IVDL(I),IDTE(I),INDX(I))  35900
02047   460*     3030 IVTYP(I)=0                                             35950
02050   461*          JINX=1                                                 35960
02051   462*          VPR(I)=0.0                                             35975
02052   463*          GO TO 84                                               35980
02053   464*      150 CALL HZONE                                             36000
02054   465*          X=99./60.                                              36010
02055   466*          IF (TTJ(I).LT.X)  GO TO 155                            36015
02057   467*          PRINT 993                                              36020
02061   468*          PRINT 966 (I,IVTYP(I),IVMT(I),VPR(I),IVLC(I),          36030
02061   469*         1IVSZ(I),IVNZ(I),IVMIN(I),IVMAX(I),IVDL(I),IDTE(I),INDX(I))  36031
02077   470*          GO TO 3030                                             36040
02100   471*      155 J1=INDX(I)                                             37200
02101   472*          TOJ(I)=8.0-SUT(J1)-2.0*TTJ(I)                          37300
02102   473*          IF (JSIG.EQ.0)  GO TO 64                               37400
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02104  474*          IS(J)=IS(J)+IPER(J)                                    38100
02105  475*          K=INDX(I)                                              38200
02106  476*          IF (ILD(K).LT.IESD(K))  GO TO 82                       38300
02110  477*          IF (IS(J).LE.ILD(K))  GO TO 820                        38400
02112  478*          IS(J)=367                                              38500
02113  479*          GO TO 83                                               38600
02114  480*      820 IF (IS(J).LT.IESD(K))  GO TO 830                       38650
02116  481*       82 IF (IS(J).LE.ILD(K))  GO TO 83                         38700
02120  482*          IF (IS(J).GE.IESD(K))  GO TO 83                        38800
02122  483*      830 IS(J)=IESD(K)                                          38900
02123  484*       83 IF (IOUT(11).LT.1)  GO TO 175                          39000
02125  485*          PRINT 966 (I,IVTYP(I),IVMT(I),VPR(I),IVLC(I),          39100
02125  486*         1IVSZ(I),IVNZ(I),IVMIN(I),IVMAX(I),IVDL(I),IDTE(I),INDX(I))  39200
02143  487*          GO TO 175                                              39300
02144  488*      325 IFULL=IFULL+1                                          39310
02145  489*          PRINT 925 (IFULL,IDAY)                                 39320
02151  490*          J=IX9+10                                               39330
02152  491*       84 J=J+1                                                  39400
02153  492*          IF (J.LE.IX9)  GO TO 175                               39500
02155  493*          IF (IFULL.EQ.0)  GO TO 840                             39502
02157  494*          IF (J.GT.IX9)  GO TO 840                               39504
02161  495*          IFULL=IFULL-1                                          39506
02162  496*          GO TO 70                                               39508
02163  497*      840 IF(ISDAY.NE.1.AND.IDAY.NE.1)  GO TO 3090               39510
02165  498*          IF(MULT.EQ.0)  GO TO 3090                              39515
02167  499*          IF(IPLAN.EQ.1)  GO TO 3090                             39520
02171  500*          DO 3020  I=1,IX4                                       39525
02174  501*     3020 NDEQT(I)=MULT*IEQNO(I)+ISEQ(I)                         39530
02176  502*          NDF=MULT*NF+NSF                                        39535
02177  503*          NDL=MULT*NL+NSL                                        39537
02200  504*          NDE1=MULT*NE1+NSE1                                     39540
02201  505*          NDE2=MULT*NE2+NSE2                                     39545
02202  506*          NDE3=MULT*NE3+NSE3                                     39550
02203  507*          DO 3095 J=1,IX5                                        39557
02206  508*          WUP(1,J)=0.0                                           39558
02207  509*     3095 WUP(2,J)=0.0                                           39559
02211  510*          GO TO 2022                                             39560
02212  511*     3090 MULT=1                                                 39562
02213  512*          IPLAN=0                                                39565
02214  513*       90 IF (INVSUM.GT.INVMAX-2.AND.IW(IDAY+3).GT.1.AND.IW(IDAY+3).LT.4)  39590
02214  514*         1  GO TO 3096                                           39591
02216  515*          IF ( IW(IDAY+3).NE.3)  GO TO 95                        39600
02220  516*          ISIG=3                                                 39700
02221  517*          GO TO 100                                              39800
02222  518*       91 IVTYP(I)=3000                                          39900
02223  519*          VPR(I)=1.0                                             39910
02224  520*          IDTE(I)=IDAY                                           40000
02225  521*          IF (IOUT(12).LT.1)  GO TO 92                           40100
02227  522*          PRINT 954 (HOL(12),I,IW(IDAY+3),IVTYP(I))              40200
02235  523*       92 ISIG=4                                                 40300
02236  524*          GO TO 100                                              40400
02237  525*       93 IVTYP(I)=3500                                          40500
02240  526*          IDTE(I)=IDAY+1                                         40600
02241  527*          VPR(I)=1.0                                             40610
02242  528*          IF (IOUT(13).LT.1)  GO TO 105                          40700
02244  529*          PRINT 954 (HOL(13),I,IW(IDAY+3),IVTYP(I))              40800
02252  530*          GO TO 105                                              40900
02253  531*       95 IF(IW(IDAY+3).NE.2) GO TO 105                          41000
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02255   532*          ISIG=5                                                  41100
02256   533*          GO TO 100                                               41200
02257   534*     3096 PRINT 926 (IDAY,IW(IDAY+3))                             41210
02263   535*          GO TO 105                                               41220
02264   536*       96 IVTYP(I)=2000                                           41300
02265   537*          IDTE(I)=IDAY                                            41400
02266   538*          VPR(I)=1.0                                              41410
02267   539*          IF (IOUT(I4),LT,1)  GO TO 105                           41500
02271   540*          PRINT 954 (HOL(I4),1,IW(IDAY+3),IVTYP(I))               41600
02277   541*      105 ISPEC=0                                                 41700
02300   542*          ISIG=0                                                  41710
02301   543*          DO 124 I=1,1X10                                         41715
02304   544*          II=I                                                    41720
02305   545*          JIND(I)=0                                               41725
02306   546*          IF (IDAY.LT.IDTE(I))  GO TO 452                         41730
02310   547*          J=IVTYP(I)                                              41740
02311   548*          IF (J.EQ.0.OR.J.EQ.9999)     GO TO  452                 41745
02313   549*          IF (J.EQ.2000.OR.J.EQ.3000)  GO TO 250                  41750
02315   550*          IF (J.EQ.3500)  GO TO 1046                              41760
02317   551*          IF (ISDAY.GT.5.OR.KHOL.EQ.1)  GO TO 452                 41765
02321   552*          GO TO 453                                               41767
02322   553*     1046 ISIG=II                                                 41770
02323   554*          GO TO 124                                               41780
02324   555*       452 JIND(I)=9                                              41900
02324   556*   C JOB IS NOT YET DISCOVERED                                    42000
02325   557*          GO TO 123                                               42100
02326   558*       453 IF (J.EQ.1000)   GO TO 454                             42200
02326   559*   C RELEASE AUXILARY CREWS                                       42300
02330   560*          Y=VPR(I)                                                42400
02331   561*          DO 112  J=1,6                                           42500
02334   562*          IF (ICREW(I,J))  111,113,112                            42600
02337   563*       111 ICREW(I,J)=0                                           42700
02340   564*       112 CONTINUE                                               42800
02342   565*       113 K=IW(IDAY+3)                                           43300
02343   566*          CPR(I)= .0000001                                        43350
02344   567*          J=INDX(I)                                               43400
02345   568*          KI=0                                                    43500
02346   569*          IWX=IWA(J)                                              43600
02347   570*       114 KI=KI+1                                                43700
02350   571*          K2=IWX/KON(K)                                           43800
02351   572*          K2=(IWX-K2*KON(K))/KON(K+1)                             43900
02352   573*          IF (K2.EQ.0)     GO TO 123                              44000
02354   574*          IF (K)-2)    116,117,115                                44100
02357   575*       115 IF (KI-4)  118,119,119                                 44200
02362   576*       116 IWX=IWB(J)                                             44300
02363   577*          K=IW(IDAY+2)                                            44400
02363   578*   C DAY -1                                                       44500
02364   579*          GO TO 114                                               44600
02365   580*       117 IWX=IWC(J)                                             44700
02366   581*          K=IW(IDAY+1)                                            44800
02366   582*   C DAY -2                                                       44900
02367   583*          GO TO 114                                               45000
02370   584*       118 IWX=IWD(J)                                             45100
02371   585*          K=IW(IDAY)                                              45200
02371   586*   C DAY -3                                                       45300
02372   587*          GO TO 114                                               45400
02373   588*       119 SUM=0.0                                                45600
02374   589*          DO 121  J=1,6                                           45700
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02377   590*          J1=ICREW(I,J)                                                    45800
02400   591*          IF (J1.EQ.0)  GO TO 122                                          45900
02402   592*      121 SUM=SUM+PROD(J1)                                                 46000
02404   593*      122 IF (SUM.LE.0.0)  GO TO 123                                       46100
02406   594*          X=TOJ(I)*SUM                                                     46200
02407   595*          J1=(Y/X)+0.5                                                     46300
02410   596*          Y=Y-X                                                            46400
02411   597*          IF (Y.LE.0.0) Y=0.0                                              46500
02413   598*          IETC(I)=IDAY+J1                                                  46600
02414   599*          IDELTA(I)=IVDL(I)-IETC(I)                                        46700
02415   600*          GO TO 124                                                        46900
02416   601*      454 JIND(I)=1                                                        46910
02417   602*      123 IETC(I)=10000                                                    47300
02420   603*          IDELTA(I)=10000                                                  47400
02421   604*      124 CONTINUE                                                         47500
02423   605*          IF (ISIG.EQ.0)  GO TO 110                                        47510
02425   606*          I1=ISIG                                                          47520
02426   607*      250 ISPEC=1                                                          47530
02427   608*          J=IVTYP(I1)                                                      47535
02430   609*          DO 450 K1=1,IX5                                                  47540
02433   610*          K=K1                                                             47550
02434   611*          IF (J.EQ.ITTYP(K1))  GO TO 451                                   47560
02436   612*      450 CONTINUE                                                         47570
02440   613*          PRINT 927                                                        47571
02442   614*          PRINT 966 (I1,IVTYP(I1),IVMT(I1),VPR(I1),IVLC(I1),IVSZ(I1),      47572
02442   615*         1IVNZ(I1),IVMIN(I1),IVMAX(I1),IVDL(I1),IDTE(I1),INDX(I1))         47573
02460   616*          IVTYP(I1)=0                                                      47576
02461   617*          VPR(I1)=0.0                                                      47577
02462   618*      451 INDX(I1)=K                                                       47580
02463   619*      110 DO 139 I=1,IX4                                                   47600
02463   620*    C DAILY INVENTORY  IGNORES PERMANENT CREWS INITIALLY                   47700
02466   621*      139 NDEQT(I)=MULT*IEQNO(I)-ISEQ(I)                                 47800
02470   622*          NDF=MULT*NF-NSF                                                  47900
02471   623*          NDE1=MULT*NE1-NSE1                                               48000
02472   624*          NDE2=MULT*NE2-NSE2                                               48100
02473   625*          NDE3=MULT*NE3-NSE3                                               48200
02474   626*          NDL=MULT*NL-NSL                                                  48300
02475   627*          PAYROL=MULT*(NF*CF+NL*CL+NE1*CE1+NE2*CE2+NE3*CE3)*8.0            48305
02476   628*          IF (NDL+NDE1+NDE2+NDE3.LE.0)  GO TO 770                          48310
02500   629*          IF (ISPEC.EQ.0)  GO TO 106                                       48400
02502   630*          K=INDX(I1)                                                       48710
02503   631*          J1=ICRS(K)                                                       49100
02504   632*          J2=ICRN(K)                                                       49200
02505   633*          DO 436 J3=J1,J2                                                  49300
02510   634*          J=IVTYP(I1)                                                      49350
02511   635*          J4=IEQS(J3)                                                      49400
02512   636*          J5=IEQN(J3)                                                      49500
02513   637*          J9=ILAB(J3)                                                      49510
02514   638*          K1=IE01(J3)                                                      49520
02515   639*          K2=IE02(J3)                                                      49530
02516   640*          K3=IE03(J3)                                                      49540
02517   641*          J8=0                                                             49590
02520   642*          DO 426 J7=1,1000                                                 49600
02520   643*    C MULTIPLE OF BASIC CREW                                               49700
02523   644*          L9=J7*J9                                                         49710
02524   645*          L1=J7*K1                                                         49900
02525   646*          L2=J7*K2                                                         50000
02526   647*          L3=J7*K3                                                         50100
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02527   648*          IF (L9.GT.NDL) GO TO 428                                  50110
02531   649*          IF (L1.LE.NDE1)  GO TO 420                                50200
02533   650*          L2=L2+L1-NDE1                                             50300
02534   651*          L1=NDE1                                                   50400
02535   652*      420 IF (L2.LE.NDE2)  GO TO 422                                50500
02537   653*          L3=L3+L2-NDE2                                             50600
02540   654*          L2=NDE2                                                   50700
02541   655*      422 IF (L3.GT.NDE3)  GO TO 428                                50800
02543   656*          DO 424  J6=J4,J5                                          50900
02546   657*          K4=IEQ(J6)                                                51000
02547   658*          IF (J7*INO(J6).GT.NDEQT(K4))  GO TO 428                   51100
02551   659*      424 CONTINUE                                                  51200
02553   660*      426 J8=J7                                                     51300
02555   661*          IERR=101                                                  51400
02556   662*          GO TO 899                                                 51500
02557   663*      428 X=8.0                                                     51600
02560   664*          X1=L1-K1                                                  51601
02561   665*          X2=L2-K2                                                  51602
02562   666*          X3=L3-K3                                                  51603
02563   667*          X9=L9-J9                                                  51604
02564   668*          IF (J.EQ.3000)  X=10.0                                    51610
02566   669*          J=INDX(II)                                                51615
02567   670*          DO 432 M=1,3                                              51700
02572   671*          SLH(M,J)=SLH(M,J)+X*X9                                    51800
02573   672*          SE1H(M,J)=SE1H(M,J)+X*X1                                  51900
02574   673*          SE2H(M,J)=SE2H(M,J)+X*X2                                  52000
02575   674*          SE3H(M,J)=SE3H(M,J)+X*X3                                  52100
02576   675*          TCL(M,J)=TCL(M,J)+X*(X9*CL+X1*CE1+X2*CE2+X3*CE3)          52200
02577   676*          DO 430  J6=J4,J5                                          52300
02602   677*          J7=IEQ(J6)                                                52400
02603   678*          X6=INO(J6)*J8                                             52410
02604   679*          EQH(M,J,J7)=EQH(M,J,J7)+X6*X                              52500
02605   680*      430 EQTOT(M,J)=EQTOT(M,J)+X*X6*EQC(J7)                        52600
02607   681*      432 CONTINUE                                                  52700
02611   682*          NDL=NDL-J8*J9                                             52800
02612   683*          NSL=NSL+J8*J9                                             52810
02613   684*          NDE1=NDE1-J8*K1                                           52900
02614   685*          NSE1=NSE1+J8*K1                                           52910
02615   686*          NDE2=NDE2-J8*K2                                           53000
02616   687*          NSE2=NSE2+J8*K2                                           53010
02617   688*          NDE3=NDE3-J8*K3                                           53100
02620   689*          NSE3=NSE3+J8*K3                                           53110
02621   690*          DO 434 J6=J4,J5                                           53200
02624   691*          J7=IEQ(J6)                                                53300
02625   692*          ISEQ(J7)=ISEQ(J7)+INO(J6)*J8                              53310
02626   693*      434 NDEQT(J7)=NDEQT(J7)+INO(J6)*J8                            53400
02630   694*      436 CONTINUE                                                  53500
02632   695*          VPR(II)=0.0                                               53550
02633   696*          IVTYP(II)=0                                               53600
02634   697*          GO TO 105                                                 53610
02635   698*      106 I8=1                                                      53700
02636   699*      177 I=I8                                                      53800
02637   700*          COST(I)=0.0                                               53900
02640   701*          IF (JIND(I).EQ.9)  GO TO 140                              54000
02642   702*          J8=1                                                      54100
02643   703*      176 J=J8                                                      54200
02644   704*          IEX=1                                                     54300
02645   705*          IF (ICREW(I,J).EQ.0)  GO TO 140                           54400
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02647   706*      141 J1=ICREW(I,J)                                                    54500
02650   707*      172 IF(NDL.LT.ILAB(J1)) GO TO 161                                    54600
02652   708*          K1=IEQ1(J1)                                                      54700
02653   709*          K2=IEQ2(J1)                                                      54800
02654   710*          K3=IEQ3(J1)                                                      54900
02655   711*          IF (K1.LE.NDE1)  GO TO 125                                       55000
02657   712*          K2=K2+K1-NDE1                                                    55100
02660   713*          K1=NDE1                                                          55200
02661   714*      125 IF (K2.LE.NDE2)  GO TO 126                                       55300
02663   715*          K3=K3+K2-NDE2                                                    55400
02664   716*          K2=NDE2                                                          55500
02665   717*      126 IF (K3.GT.NDE3)  GO TO 161                                       55600
02665   718*    C THIS PATH MEANSS ALL PERSONNEL ARE AVAILABLE  ******************     55700
02667   719*          SUM=COST(I)+ILAB(J1)*CL+K1*CE1+K2*CE2+K3*CE3                     55800
02670   720*          J2=IEQS(J1)                                                      55900
02671   721*          J3=IEQN(J1)                                                      56000
02672   722*          DO  107 J4=J2,J3                                                 56100
02675   723*          J5=IEQ(J4)                                                       56200
02676   724*          IF (NDEQT(J5).LT.INO(J4))  GO TO 161                             56300
02700   725*      107 CONTINUE                                                         56400
02702   726*          DO 157  J4=J2,J3                                                 56500
02705   727*          IF (INO(J4).EQ.0)  GO TO 157                                     56510
02707   728*          J5=IEQ(J4)                                                       56600
02710   729*          NDEQT(J5)=NDEQT(J5)-INO(J4)                                      56700
02711   730*          SUM=SUM+INO(J4)*EQC(J5)                                          56800
02712   731*      157 CONTINUE                                                         56900
02714   732*          NDL=NDL-ILAB(J1)                                                 57000
02715   733*          NDE1=NDE1-K1                                                     57100
02716   734*          NDE2=NDE2-K2                                                     57200
02717   735*          NDE3=NDE3-K3                                                     57300
02720   736*          COST(I)=SUM+COST(I)                                              57400
02721   737*          IF (IEX-2)  129,142,142                                          57500
02724   738*      129 J8=J8+1                                                          57600
02725   739*          IF (J8.LE.6)  GO TO 176                                          57700
02727   740*      140 I8=I8+1                                                          57800
02730   741*          IF (I8.LE.IX10)  GO TO 177                                       57900
02732   742*          GO TO 132                                                        58000
02733   743*      161 IF (IEX-2)  130,146,146                                          58100
02736   744*      130 DO 131  I=1,IX10                                                 58200
02741   745*          DO 131  J=1,6                                                    58300
02741   746*    C RELEASE ALL CREWS INVENTORY AFTER PERMANENT CHECK IS NEGATIVE       58400
02744   747*      131 ICREW(I,J)=0                                                     58500
02747   748*          GO TO 110                                                        58600
02750   749*      132 DO 133 I=1,IX10                                                  58700
02750   750*    C RANK BY IDELTA                                                     58800
02753   751*          JRANK(I)=I                                                       58900
02754   752*      133 JUNK1(I)=IDELTA(I)                                               59000
02756   753*          ISIG=0                                                           59010
02757   754*          CALL RANK                                                        59015
02760   755*      138 I2=1                                                             60400
02761   756*      178 I=JRANK(I2)                                                      60500
02762   757*          IEX=2                                                            60550
02763   758*          Y=VPR(I)                                                         60575
02763   759*    C NONSENSE JOB                                                       60600
02764   760*           IF (JIND(I).EQ.9)  GO TO 179                                  60700
02766   761*          IF(JIND(I).EQ.1)  GO TO 160                                      60800
02770   762*          J=1                                                              61000
02771   763*          ISIG=0                                                           61200
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02772   764*      148 IF(IVTYP(I).EQ.9999)  GO TO 160                          61250
02774   765*          IF(Y.LE.0.)  GO TO 160                                   61270
02776   766*          IF ((IDELTA(I).GE.0.AND. IDELTA(I).NE.10000)  GO TO 160  61300
02776   767*    C JOB IS ON AR AHEAD OF SCHEDULE                               61400
03000   768*          IF (ICREW(I,1).EQ.0) GO TO 162                           61500
03000   769*    C AT LEAST ONE CREW IS ASSIGNED                                61800
03002   770*          IF (ICREW(I,6).EQ.0)  GO TO 141                          61900
03004   771*      144 PRINT 967 (HOL(19),IDAY,I,I1,IVTYP(I),IETC(I),IVDL(I),(ICREW(I,K),  62000
03004   772*         1K=1,6))                                                  62100
03021   773*          GO TO 160                                                62200
03022   774*      142 DO 143  J2=1,6                                           62300
03025   775*          J3=J2                                                    62400
03026   776*          IF (ICREW(I,J2).EQ.0)  GO TO 145                         62500
03030   777*      143 CONTINUE                                                 62600
03032   778*      145 ICREW(I,J3)=J1                                           62700
03033   779*          IF(IVMIN(I).GE.0) IVMIN(I)=-(IDAY+IVMIN(I))              62800
03035   780*          SUM=0.0                                                  62900
03036   781*          DO 1452 J2=1,J1                                          62950
03041   782*          J4=ICREW(I,J2)                                           63000
03042   783*          IF(J4.EQ.0)  GO TO 1454                                  63100
03044   784*          IF(J4.LT.0)  J4=-J4                                      63200
03046   785*     1452 SUM=SUM+PROD(J4)                                         63300
03050   786*     1454 X=SUM*TOJ(I)                                             63400
03051   787*          J2=(Y/X)+0.5                                             63500
03052   788*          Y=Y-X                                                    63550
03053   789*          IF (Y.LE.0.0)  Y=0.0                                     63575
03055   790*      280 IETC(I)=IDAY+J2                                          63600
03056   791*      285 IDELTA(I)=IVDL(I)-IETC(I)                                63700
03057   792*          IF (IEX.LE.3)  GO TO 148                                 63800
03061   793*          ICREW(I,J3)=0-ICREW(I,J3)                                63900
03062   794*          IEX=4                                                    64000
03063   795*          GO TO 171                                                64100
03064   796*      146 J=J+1                                                    64200
03065   797*          IF (ICREW(I,J).EQ.0)  GO TO 162                          64300
03067   798*          J2=J-1                                                   64400
03070   799*          DO 147  J3=1,J2                                          64500
03073   800*          IF (ICREW(I,J3).EQ.ICREW(I,J))  GO TO 146                64600
03075   801*      147 CONTINUE                                                 64700
03077   802*          GO TO 148                                                64800
03100   803*      162 IF (IEX.NE.2)  GO TO 169                                 64900
03102   804*          IEX=3                                                    65000
03103   805*          GO TO 180                                                65100
03104   806*      169 IF (IEX.NE.4)  GO TO 165                                 65200
03106   807*          IEX=5                                                    65300
03107   808*      180 L=INDX(I)                                                65400
03110   809*          L1=ICRS(L)                                               65500
03111   810*          L2=ICRN(L)                                               65600
03112   811*          L =0                                                     65700
03113   812*          DO 163  L4=L1,L2                                         65800
03116   813*          L=L+1                                                    65850
03117   814*          XJUNK(L )=8.0*HCOST(L4)/(PROD(L4)*TOJ(I))                65900
03120   815*      163 JUNK1(L )=L4                                             66000
03122   816*          DO 164  L4=1,L                                           66300
03125   817*          DO 164  L5=L4,L                                          66400
03130   818*          IF (XJUNK(L4).LE.XJUNK(L5))  GO TO 164                   66500
03132   819*          X=XJUNK(L4)                                              66550
03133   820*          XJUNK(L4)=XJUNK(L5)                                      66575
03134   821*          XJUNK(L5)=X                                              66600
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03135   822*          L3=JUNK1(L4)                                                    66700
03136   823*          JUNK1(L4)=JUNK1(L5)                                             66900
03137   824*          JUNK1(L5)=L3                                                    67100
03140   825*      164 CONTINUE                                                        67200
03143   826*          L1=0                                                            67300
03144   827*      165 LI=L1+1                                                         67400
03145   828*          IF (L1.GT.L)  GO TO 168                                         67500
03147   829*          DO 170  L5=1,6                                                  67600
03152   830*          IF ( ICREW(I,L5).EQ.0)  GO TO 275                               67700
03154   831*          IF (ICREW(I,L5).EQ.JUNK1(L1))  GO TO 165                        67800
03156   832*          IF (ICREW(I,L5).EQ.-JUNK1(L1)) GO TO 165                        67900
03160   833*      170 CONTINUE                                                        68000
03162   834*      275 J1=JUNK1(L1)                                                    68100
03163   835*          J2=JUNK1(I)                                                     68150
03164   836*          IF (XJUNK(L1).LT.1.15*XJUNK(I))  GO TO 172                      68200
03166   837*      168 JIND(I)=1                                                       68300
03167   838*          IF (IEX.LE.3)  GO TO 160                                        68400
03171   839*          GO TO 171                                                       68500
03172   840*      160 IF (IEX.GT.3)  GO TO 171                                        68600
03174   841*          I2=I2+1                                                         68700
03175   842*          IF (I2.LE.IX10)  GO TO 178                                      68800
03177   843*      179 IEX=4                                                           68900
03200   844*          ISIG=0                                                          69000
03201   845*          I2=1                                                            69100
03202   846*      181 I=JRANK(I2)                                                     69200
03203   847*          IF(IVMIN(I).GT.0) GO TO 171                                     69300
03205   848*          IF((IVMIN(I)+IETC(I)).LE.0) GO TO 171                           69400
03207   849*          IF (JIND(I).NE.0)  GO TO 171                                    69500
03211   850*          J=1                                                             69600
03212   851*          GO TO 148                                                       69700
03213   852*      171 I2=I2+1                                                         69800
03214   853*          IF (I2.LE.IX10)  GO TO 181                                      69900
03216   854*          IF (ISIG.NE.0)  GO TO 179                                       70000
03216   855*    C JOB X INITIALLY**CONVERT TO MAN HOURS                               70100
03220   856*          DXL=NDL*8                                                       70200
03221   857*          DXE1=NDE1*8                                                     70300
03222   858*          DXE2=NDE2*8                                                     70400
03223   859*          DXE3=NDE3*8                                                     70500
03224   860*          DO 2004 I=1,IX4                                                 70600
03227   861*     2004 NDEQT(I)=8*NDEQT(I)                                             70610
03231   862*          ISIG=0                                                          71300
03231   863*    C INDICATES RANKING BY TRAVEL TIME IS NOT YET DONE                    71400
03232   864*          I2=1                                                            71500
03232   865*    C DO LOOP OVER ALL JOBS TO SPOT EMERGENCIES                           71600
03233   866*     3006 DPR(I2)=0                                                       71700
03234   867*          Y=ILAB(I)                                                       71800
03235   868*          X1=IEQ1(I)                                                      71900
03236   869*          X2=IEQ2(I)                                                      72000
03237   870*          X3=IEQ3(I)                                                      72100
03240   871*          I=I2                                                            72200
03241   872*          J=IVTYP(I)                                                      72300
03242   873*          IF (JIND(I).EQ.9)  GO TO 222                                    72600
03244   874*          IF (J.NE.1000)     GO TO 222                                    73000
03246   875*          J=INDX(I)                                                       73350
03247   876*          TIME=VPR(I)+SUT(J)                                              73400
03250   877*          TIMET=TIME+2*TTJ(I)                                             73450
03251   878*          IF(IDTE(I).GT.IDAY) GO TO 222                                   73500
03253   879*          K1=IEQS(I)                                                      73970
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03254  880*          K2=IEQN(I)                                                  73980
03255  881*          DO 2006 K3=K1,K2                                            73990
03260  882*          K4=IEQ(K3)                                                  74000
03261  883*          IF (NDEQT(K4).LT.INO(K3)*TIME) GO TO 203                    74010
03263  884*     2006 CONTINUE                                                    74020
03265  885*          IF (DXL.LT.Y*TIME)     GO TO 203                            74100
03267  886*          IF (X1*TIME.LE.DXE1)   GO TO 200                            74200
03271  887*          X2=X2+X1-DXE1                                               74300
03272  888*          X1=DXE1                                                     74400
03273  889*      200 IF (X2*TIME.LE.DXE2)   GO TO 201                            74500
03275  890*          X3=X3+X2-DXE2                                               74600
03276  891*          X2=DXE2                                                     74700
03277  892*      201 IF (X3*TIME.GT.DXE3)   GO TO 203                            74800
03301  893*      202 DO 2010 M=1,3                                               74840
03304  894*          WUA(M,I)=WUA(M,I)+TIME                                      74850
03305  895*          SLH(M,I)=SLH(M,I)+TIME*Y                                    74860
03306  896*          SE1H(M,I)=SE1H(M,I)+TIME*X1                                 74870
03307  897*          SE2H(M,I)=SE2H(M,I)+TIME*X2                                 74880
03310  898*          SE3H(M,I)=SE3H(M,I)+TIME*X3                                 74900
03311  899*          TCL(M,I)=TIME*(Y*CL+X1*CE1+X2*CE2+X3*CE3)+TCL(M,I)          74910
03312  900*          VPR(I)=0.0                                                  74915
03313  901*          JINX=1                                                      74916
03314  902*          IVTYP(I)=0                                                  74917
03315  903*          DO 2008 N=K1,K2                                             74920
03320  904*          IF (INO(N).EQ.0)   GO TO 2008                               74930
03322  905*          K3=IEQ(N)                                                   74940
03323  906*          EQH(M,I,K3)=EQH(M,I,K3)+INO(N)*TIME                         74950
03324  907*          EQTOT(M,I)=EQTOT(M,I)+INO(N)*TIME*EQC(K3)                   74960
03325  908*          NDEQT(K3)=NDEQT(K3)+INO(N)*TIMET                            74970
03326  909*     2008 CONTINUE                                                    74980
03330  910*     2010 CONTINUE                                                    74990
03332  911*          DXL=DXL-Y*TIMET                                             75400
03333  912*          DXE1=DXE1-X1*TIMET                                          75500
03334  913*          DXE2=DXE2-X2*TIMET                                          75600
03335  914*          DXE3=DXE3-X3*TIMET                                          75700
03336  915*          GO TO 222                                                   76100
03337  916*      203 IF (ISIG.NE.0)   GO TO 206                                  76200
03337  917*    C CHECK TO SEE IF RANKING IS REQUIRED                             76300
03341  918*          ISIG=1                                                      76400
03342  919*          DO 204 J1=1,IX10                                            76500
03345  920*          JUNK1(J1)=J1                                                76600
03346  921*      204 XJUNK(J1)=TTJ(J1)                                           76700
03346  922*    C ORIGINAL INVENTORY INDEX AND TRAVWL TIME                        76800
03350  923*          DO 205 J1=1,IX10                                            76900
03350  924*    C RANK ON TRAVEL TIME                                             77000
03353  925*          DO 205 J2=J1,IX10                                           77100
03356  926*          J4=JUNK1(J1)                                                77050
03357  927*          J5=JUNK1(J2)                                                77075
03360  928*          IF (XJUNK(J4).LE.XJUNK(J5))  GO TO 205                      77200
03362  929*          J3=JUNK1(J2)                                                77300
03363  930*          JUNK1(J2)=JUNK(J1)                                          77500
03364  931*          JUNK1(J1)=J3                                                77700
03365  932*      205 CONTINUE                                                    77900
03370  933*      206 DO 218 J1=1,IX10                                            78600
03370  934*    C CHECK FOR CREW                                                  78700
03373  935*          J2=JUNK1(J1)                                                78800
03374  936*          IF (JIND(J2).EQ.9)   GO TO 218                              78900
03376  937*          DO 210 J3=1,6                                               79000
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03376   938*   C AUXILIARY CREW CHECK                                                                  79100
03401   939*         J4=7-J3                                                                          79200
03402   940*         IF (ICREW(J2,J4))  207,210,218                                                   79300
03405   941*    207  IF (J4.EQ.6)  GO TO 221                                                          79400
03407   942*         DO 208  J5=J4,5                                                                  79500
03412   943*         IF (ICREW(J2,J4).EQ.ICREW(J2,J5+1))          GO TO 210                           79600
03414   944*    208  CONTINUE                                                                         79700
03416   945*    221  J5=-ICREW(J2,J4)                                                                79800
03416   946*   C CREW HAS NOT BEEN CHECKED                                                            79900
03417   947*         IF (TX.GE.TIME)  GO TO 211                                                       80000
03421   948*         J6=IEQS(J5)                                                                      80100
03422   949*         J7=IEQN(J5)                                                                      80200
03423   950*         DO 209  J8=J6,J7                                                                 80300
03426   951*         J9=J8                                                                            80400
03427   952*         IF (IEQ(J8).EQ.2) GO TO 211                                                      80500
03431   953*    209  CONTINUE                                                                         80600
03433   954*         GO TO 210                                                                        80700
03434   955*    211  IF  ((8*ILAB(J5)+DXL).LT.(2.0*TIME))  GO TO 210                                  80800
03436   956*         IF ((8*(IE01(J5)+IE02(J5)+IE03(J5))+ DXE1+DXE2+DXE3).GE.TIME) GO T              80900
03436   957*        1O 219                                                                            81000
03440   958*         IF ((IE01(J5)+IE02(J5)+IE03(J5)).LT.1)  GO TO 210                                81100
03442   959*    210  CONTINUE                                                                         81200
03444   960*    218  CONTINUE                                                                         81300
03446   961*         DO 318  J1=1,IX10                                                                81400
03451   962*         J2=JUNK1(J1)                                                                     81500
03452   963*         DO 290 K1=1,6                                                                    81600
03455   964*         J4=K1                                                                            81700
03456   965*    214  IF (ICREW(J2,J4).LE.0)  GO TO 318                                              81800
03460   966*         IF (J4.EQ.1)  GO TO 220                                                          81900
03462   967*         J6=J4-1                                                                          82000
03463   968*         J5=1                                                                             82100
03464   969*    215  IF (ICREW(J2,J5).EQ.ICREW(J2,J4))  GO TO 318                                    82200
03466   970*         J5=J5+1                                                                          82300
03467   971*         IF(J5.GT.J6) GO TO 220                                                           82400
03471   972*         GO TO 215                                                                        82500
03472   973*    220  J5=ICREW(J2,J4)                                                                 82600
03473   974*         J6=IEQS(J5)                                                                      82700
03474   975*         J7=IEQN(J5)                                                                      82800
03475   976*         IF (TX.GE.TIME)  GO TO 217                                                       82900
03477   977*         DO 216  J8=J6,J7                                                                 83000
03502   978*         J9=J8                                                                            83100
03503   979*         IF (IEQ(J9).EQ.1)  GO TO 217                                                     83200
03505   980*    216  CONTINUE                                                                         83300
03507   981*         GO TO 318                                                                        83400
03510   982*    217  IF ((8*ILAB(J5)+DXL).LT.(2.0*TIME))  GO TO 290                                  83500
03512   983*         IF ((8*(IE01(J5)+IE02(J5)+IE03(J5))+ DXE1+DXE2+DXE3).GE.TIME) GO T              83600
03512   984*        1O 219                                                                            83700
03514   985*    290  CONTINUE                                                                         83800
03516   986*    318  CONTINUE                                                                         83900
03520   987*         IPRINT=110                                                                       84000
03521   988*         PRINT 1000, IPRINT                                                               84100
03524   989*    222  I2=I2+1                                                                         84300
03525   990*         IF(I2.LE.IX10)  GO TO 3006                                                       84350
03527   991*         GO TO 223                                                                        84375
03530   992*    219  X1=TOJ(I)-TIME                                                                  91400
03531   993*         DPR(I)=DPR(I)+X1*PROD(J5)                                                        91500
03532   994*         COST(I)=COST(I)-X1*HCOST(J5)                                                     91600
03533   995*         IF (J4.EQ.6)  GO TO 213                                                          91700
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03535  996*          DO 212  J5=J4,5                                                  91800
03540  997*      212 ICREW(J2,J5)=ICREW(J2,J5+1)                                      91900
03542  998*      213 ICREW(J2,6)=0                                                    92000
03543  999*          TX=TX+TIME*INO(J9)                                               92100
03544  1000*         DXL=DXL+TIME*ILAB(J5)                                            92200
03545  1001*         DXE1=DXE1+TIME*IEQ1(J5)                                          92300
03546  1002*         DXE2=DXE2+TIME*IEQ2(J5)                                          92400
03547  1003*         DXE3=DXE3+TIME*IEQ3(J5)                                          92500
03550  1004*         GO TO 202                                                        92600
03551  1005*     223 ISIG=0                                                           84400
03552  1006*         DO 763 I=1,IX10                                                  84500
03552  1007*   C DO OVER ALL JOBS IN INVENTORY                                        84600
03555  1008*         IF (JIND(I).EQ.9)  GO TO 763                                     84700
03557  1009*         J=INDX(I)                                                        84800
03557  1010*   C TYPE INDEX OF ITH JOB                                                84900
03560  1011*         DO 762  K=1,6                                                    85000
03560  1012*   C BASIC CREW LIST OF ITH JOB                                           85100
03563  1013*         L=ICREW(I,K)                                                     85200
03564  1014*         IF (L.EQ.0)  GO TO 763                                           85300
03566  1015*         IF (L.LT.0) L=-L                                                 85400
03570  1016*         Z=TOJ(I)                                                         85450
03571  1017*         X=      Z*PROD(L)                                                85500
03571  1018*   C DAILY PRODUCTION                                                     85600
03572  1019*         VPR(I)=VPR(I)-X                                                  85602
03573  1020*         TIME=0.0                                                         85605
03574  1021*         IF(VPR(I))   1118,1120,1130                                      85610
03577  1022*    1118 TIME=-VPR(I)/PROD(L)                                             85620
03600  1023*         VPR(I)=0.0                                                       85630
03601  1024*         CPR(I)=0.0                                                       85635
03602  1025*         JINX=1                                                           85640
03603  1026*              Z=TOJ(I)-TIME                                               85700
03604  1027*         X=      Z*PROD(L)                                                85710
03605  1028*         GO TO 1122                                                       85720
03606  1029*    1120 CPR(I)=0.0                                                       85735
03607  1030*         GO TO 1122                                                       85740
03610  1031*    1130 CPR(I)=CPR(I)+X                                                  85750
03611  1032*    1122 DO 761 M=1,3                                                     85800
03614  1033*         WUA(M,J)=WUA(M,J)+X                                              85900
03615  1034*         SLH(M,J)=SLH(M,J)+ILAB(L)*Z                                      86000
03616  1035*         SE1H(M,J)=SE1H(M,J)+IEQ1(L)*Z                                    86100
03617  1036*         SE2H(M,J)=SE2H(M,J)+IEQ2(L)*Z                                    86200
03620  1037*         SE3H(M,J)=SE3H(M,J)+IEQ3(L)*Z                                    86300
03621  1038*         TCL(M,J)=TCL(M,J)+      Z*(ILAB(L)*CL+IEQ1(L)*CE1+IEQ2(L)*CE2+IEQ3(   86400
03621  1039*        1L)*CE3)                                                          86500
03622  1040*         N1=IEQS(L)                                                       86600
03623  1041*         N2=IEQN(L)                                                       86700
03624  1042*         DO 760 N=N1,N2                                                   86800
03627  1043*         N3=IEQ(N)                                                        86900
03630  1044*         EQH(M,J,N3)=EQH(M,J,N3)+INO(N)*Z                                 87000
03631  1045*     760 EQTOT(M,J)=EQTOT(M,J)+INO(N)*      Z*EQC(N3)                     87100
03633  1046*     761 CONTINUE                                                         87200
03635  1047*    1124 IF (TIME.LE.0.0)  GO TO 762                                      87205
03637  1048*         DO 650  N1=1,IX10                                          A     87205
03642  1049*         IF ( J.NE.INDX(N1))  GO TO 650                             B     87205
03644  1050*         IF (CPR(N1).LE.0.0.OR.JIND(N1).EQ.9.OR.IETC(N1).EQ.IDAY) GO TO 650 C 87205
03646  1051*         IF ( TIME.LE.4.0*TTJ(N1)) GO TO 650                        CC87205
03650  1052*         Z=TIME-2*TTJ(N1)                                            D87205
03651  1053*         TIME=Z                                                     DA 87205
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03652  1054*          X=Z*PROD(L)                                                DD87205
03653  1055*          VPR(N1)=VPR(N1)-X                                           E 87205
03654  1056*            Z1=0.0                                                    F 87205
03655  1057*          IF (VPR(N1))  651,652,653                                   G 87205
03660  1058*      651   Z1=-VPR(N1)/PROD(L)                                       H 87205
03661  1059*          VPR(N1)=0.0                                                 I 87205
03662  1060*          CPR(N1)=0.0                                                 J 87205
03663  1061*          JINX=N1                                                    JJ87205
03664  1062*          Z=TIME-Z1                                                  K87205
03665  1063*          TIME=TIME-Z                                               KK87205
03666  1064*          X=Z*PROD(L)                                                L87205
03667  1065*          GO TO 1122                                                 M 87205
03670  1066*      652 CPR(N1)=0.0                                                N 87205
03671  1067*          JINX=N1                                                   NN87205
03672  1068*          TIME=0.0                                                 NNN87205
03673  1069*          GO TO 1122                                                 O 87205
03674  1070*      653 CPR(N1)=CPR(N1)+X                                          P 87205
03675  1071*          TIME=0.0                                                  PP 87205
03676  1072*          GO TO 1122                                                 Q 87205
03677  1073*      650 CONTINUE                                                   R 87205
03701  1074*          DXL=DXL+TIME*ILAB(L)                                        87210
03702  1075*          DXE1=DXE1+TIME*IEO1(L)                                      87215
03703  1076*          DXE2=DXE2+TIME*IEO2(L)                                      87220
03704  1077*          DXE3=DXE3+TIME*IEO3(L)                                      87225
03705  1078*          ICREW(I,K)=0                                                87230
03706  1079*          N1=IEQS(L)                                                  87240
03707  1080*          N2=IEQN(L)                                                  87250
03710  1081*          DO  1126 N=N1,N2                                            87260
03713  1082*          N3=IEQ(N)                                                   87270
03714  1083*          NDEQT(N3)=NDEQT(N3)+TIME*INO(N)                             87280
03715  1084*     1126 CONTINUE                                                    87290
03717  1085*      762 CONTINUE                                                    87300
03721  1086*      763 CONTINUE                                                    87305
03723  1087*          JSIG=1                                                    A 83705
03724  1088*     7611 IF (JSIG.EQ.0)   GO TO 2003
03726  1089*          JSIG=0                                                  87305000
03727  1090*          DO 7610 I=1,1X10                                        87305010
03732  1091*          IF (CPR(I).LE.0.0.OR.JIND(I).EQ.9)  GO TO 7610          87305020
03734  1092*          J=ICREW(I,1)                                            87305030
03735  1093*          IF (J.EQ.0)  GO TO 7610                                 87305040
03737  1094*          Z=4*TTJ(I)                                              87305050
03737  1095*     C MINIMUM TIME ACCEPTABLE                                    87305060
03740  1096*          L=ILAB(J)                                               87305070
03741  1097*          X1=IEO1(J)                                              87305080
03742  1098*          X2=IEO2(J)                                              87305090
03743  1099*          X3=IEO3(J)                                              87305100
03744  1100*          X=DXL/L                                                 87305110
03745  1101*          IF( X.LT.Z)  GO TO 7610                                 87305120
03747  1102*          IF (X.GT.8.0)  X=8.0                                    87305130
03751  1103*          Y1=DXE1                                                 87305140
03752  1104*          Y2=DXE2                                                 87305150
03753  1105*          Y3=DXE3                                                 87305160
03754  1106*     7601 IF (X1*X.LT.Y1)  GO TO 7600                             87305170
03756  1107*          X2=X2+X1-Y1                                             87305180
03757  1108*          X1=Y1                                                   87305190
03760  1109*     7600 IF (X2*X.LT.Y2)  GO TO 7602                             87305200
03762  1110*          X3=X3+X2-Y2                                             87305210
03763  1111*          X2=Y2                                                   87305220
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03764  1112*     7602 IF (X3*X.LT.Y3)  GO TO 7604                                  87305230
03766  1113*          Z1=Y3/X3                                                     87305240
03767  1114*     7604 IF (Z1.LT.Z1  GO TO 7610                                     87305250
03771  1115*          X=Z1                                                         87305260
03772  1116*          K1=IEQS(J)                                                   87305280
03773  1117*          K2=IEQN(J)                                                   87305290
03774  1118*          DO 7620  K3=K1,K2                                            87305300
03777  1119*          K4=INDX(K3)                                                  87305310
04000  1120*          IF(NDEQT(K4).GE.1NO(K3)*X)  GO TO 7620                       87305320
04002  1121*          X=NDEQT(K4)/INO(K3)                                          87305330
04003  1122*          IF (X.LT.Z)  GO TO 7610                                      87305340
04005  1123*     7620 CONTINUE                                                     87305350
04007  1124*          JS1G=1                                                       87305360
04010  1125*          K=INDX(1)                                                    87305370
04011  1126*          XX=X-2*TTJ(1)                                                87305380
04012  1127*          Z=PROD(J)*XX                                                 87305390
04013  1128*          IF (Z.LT.VPR(I)1  GO TO 7622                                 87305400
04015  1129*          XX=VPR(1)/PROD(J)                                            87305410
04016  1130*          X=XX+2*TTJ(1)                                                87305420
04017  1131*          Z=VPR(I)                                                     87305430
04020  1132*     7622 DO 7624 M=1,3                                                87305440
04023  1133*          WUA(M,K1=WUA(M,K)+Z                                          87305450
04024  1134*          SLH(M,K)=SLH(M,K)+L*XX                                       87305460
04025  1135*          SE1H(M,K)=SE1H(M,K1+X1*XX                                    87305470
04026  1136*          SE2H(M,K)=SE2H(M,K)+X2*XX                                    87305480
04027  1137*          SE3H(M,K)=SE3H(M,K)+X3*XX                                    87305490
04030  1138*          TCL(M,K1=TCL(M,K)+XX*(L*CL+X1*CE1+X2*CE2+X3*CE3)             87305500
04031  1139*          DO 7624  N=K1,K2                                             87305510
04034  1140*          IF  (1NO(N1.EQ.0) GO TO 7624                                 87305520
04036  1141*          K3=IEQ(N)                                                    87305530
04037  1142*          EQH(M,K,K3)=EQH(M,K,K31+1NO(N1*XX                            87305540
04040  1143*          EQTOT(M,K)=EQTOT(M,K)+INO(N)*XX*EQC(K31                      87305550
04041  1144*          NDEQT(K3)=NDEQT(K3)-X*1NO(N1                                 87305560
04042  1145*     7624 CONTINUE                                                     87305570
04045  1146*          VPR(I1=VPR(I)-Z-.00001                                       87305580
04046  1147*          IF (VPR(I).GT.0.01  GO TO 7626                               87305590
04050  1148*          CPR(I)=0.0                                                   87305600
04051  1149*          IVTYP(I)=0                                                   87305610
04052  1150*          J1NX=1                                                       87305615
04053  1151*          VPR(I)=0.0                                                   87305620
04054  1152*     7626 DXL=DXL-L*X                                                  87305630
04055  1153*          DXE1=DXE1-X1*X                                               87305640
04056  1154*          DXE2=DXE2-X2*X                                               87305650
04057  1155*          DXE3=DXE3-X3*X                                               87305660
04060  1156*     7610 CONTINUE                                                     87305670
04062  1157*     2003 IF (JS1G.NE.0)  GO TO 7611                                   87305680
04064  1158*          DO 20030  LL=I,IX10                                          A=87306
04067  1159*          IF (IDTE(LL).GT.IDAY)  GO TO 20030                           A87306
04071  1160*          J=INDX(LL)                                                   87T07
04072  1161*          WUC(I,J)=WUC(I,J)+VPR(LL)                                    87306
04073  1162*    20030 CONTINUE                                                     87309
04075  1163*          IF (ISDAY.GT.5.OR.IDAY.EQ.NHOL(IHOL))  GO TO 770             A87309
04077  1164*          DO 2002  M=1,3                                               87310
04102  1165*          XJL(M)=XJL(M)+DXL                                            87320
04103  1166*          XJE1(M)=XJE1(M1+DXE1                                         87330
04104  1167*          XJE2(M)=XJE2(M)+DXE2                                         87340
04105  1168*     2002 XJE3(M1=XJE3(M1+DXE3                                         87350
04107  1169*      770 M=1                                                         87800
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04110  1170*          IF(NHOL(IHOL).EQ.IDAY)  IHOL=IHOL+1                                87805
04112  1171*          IF (ISDAY.LT.6.AND.KHOL.NE.1)  GO TO 771                           87810
04112  1172*    C OFF DAY                                                                87820
04114  1173*          IF (TCL(1,5)+TCL(1,3)+TCL(1,4).LE.0.0)  GO TO 772                  87830
04116  1174*      771 M=1                                                                87840
04117  1175*          DO 1110   K=2,IX5                                                  87860
04122  1176*     1110 WUP(1,K)=WUP(1,K)-WUA(1,K)                                         87880
04124  1177*          IF(IOUT(17).EQ.0)  GO TO 772                                       87890
04126  1178*          PRINT 970 (IWEEK,DWEEK(ISDAY),IDAY,IW(IDAY+3))                     88000
04134  1179*      773 IF (IPLAN.EQ.0)  GO TO 1112                                        88060
04136  1180*          DO 1106   K=1,IX5                                                  88070
04141  1181*     1106 WUP(1,K)=WUP(2,K)                                                  88080
04143  1182*     1112 PRINT 930 (INVSUM)                                                88100
04146  1183*          PRINT 971                                                          88130
04150  1184*          PRINT 972                                                          88200
04152  1185*          ISIG=5                                                             88300
04153  1186*          X1=0.0                                                             88410
04154  1187*          X2=0.0                                                             88420
04155  1188*          DO 777 I=1,IX5                                                     88500
04160  1189*          X=TCL(M,I)+EQTOT(M,I)                                              88600
04161  1190*          X1=X1+X                                                            88610
04162  1191*          Z=WUC(M,I)+X                                                       88620
04163  1192*          IF (Z.LE.0.0)                    GO TO 777                         88700
04165  1193*          Y=SLH(M,I)+SE1H(M,I)+SE2H(M,I)+SE3H(M,I)                           88800
04166  1194*          X2=X2+Y                                                            88810
04167  1195*          IF (ISIG.NE.5)  GO TO 775                                          88900
04171  1196*          PRINT 975                                                          89000
04173  1197*          ISIG=0                                                             89100
04174  1198*      775 PRINT 973(I,ITTYP(I),HT1(I),HT2(I),SLH(M,I),SE1H(M,I),SE2H(M,I),SE 89200
04174  1199*         13H(M,I),Y,TCL(M,I),X,WUP(M,I),WUA(M,I),WUC(M,I))                   89300
04214  1200*          ISIG=ISIG+1                                                        89400
04215  1201*      777 CONTINUE                                                           89500
04217  1202*          X3=0.0                                                             89510
04220  1203*          X4=0.0                                                             89512
04221  1204*          X5=0.0                                                             89514
04222  1205*          X6=0.0                                                             89516
04223  1206*          X7=0.0                                                             89518
04224  1207*          DO 1044 I=1,IX5                                                    89520
04227  1208*          X3=X3+SLH(M,I)                                                     89525
04230  1209*          X4=X4+SE1H(M,I)                                                    89530
04231  1210*          X5=X5+SE2H(M,I)                                                    89535
04232  1211*          X6=X6+SE3H(M,I)                                                    89540
04233  1212*          X7=X7+TCL(M,I)                                                     89545
04234  1213*     1044 CONTINUE                                                           89550
04236  1214*          K1=X1+0.5                                                          89555
04237  1215*          K2=X2+0.5                                                          89560
04240  1216*          K3=X3+0.5                                                          89565
04241  1217*          K4=X4+0.5                                                          89570
04242  1218*          K5=X5+0.5                                                          89575
04243  1219*          K6=X6+0.5                                                          89580
04244  1220*          K7=X7+0.5                                                          89585
04245  1221*          PRINT 987 (K3,K4,K5,K6,K2,K7,K1)                                   89590
04256  1222*          X=XJL(M)+XJE1(M)+XJE2(M)+XJE3(M)                                   89600
04257  1223*          Y=CL*XJL(M)+CE1*XJE1(M)+CE2*XJE2(M)+CE3*XJE3(M)                    89610
04260  1224*          PRINT 988 (XJL(M),XJE1(M),XJE2(M),XJE3(M),X,Y)                     89620
04270  1225*          IF (M.EQ.1)  PRINT 934 (PAYROL)                                    89625
04274  1226*          PRINT 950                                                          89630
04276  1227*          PRINT 979
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04300  1228*          PRINT 980 (IEQI(I),I=1,IX4)
04300  1229*    C COLUMN HEADINGS FOR EQUIPMENT TYPES
04306  1230*          ISIG=5
04307  1231*          DO 782  I=1,IX5
04307  1232*    C ROWS OR JOB TYPES
04312  1233*          IF (EQTOT(M,I).LE.0.0)  GO TO 782
04314  1234*          IF (ISIG.LT.5)  GO TO 780
04316  1235*          ISIG=0
04317  1236*          PRINT 975
04321  1237*     780  DO 7801   K=1,IX4
04324  1238*    7801  JUNK1(K)=EQH(M,I,K)+0.5
04326  1239*          PRINT 982 (ITTYP(I),EQTOT(M,I),(JUNK1(K)  ,K=1,IX4))
04336  1240*          ISIG=ISIG+1
04337  1241*     782  CONTINUE
04341  1242*          DO 785  K=1,IX4
04344  1243*          SUM=0.0
04345  1244*          SUM1=0.0
04346  1245*          DO 783  I=1,IX5
04351  1246*          SUM1=SUM1+EQTOT(M,I)
04352  1247*     783  SUM=SUM+EQH(M,I,K)
04354  1248*          JUNK1(K)=SUM+.5
04355  1249*          JUNK2(I)=SUM1+.5
04356  1250*     785  CONTINUE
04360  1251*          PRINT 983 (JUNK2(I),(JUNK1(K),K=1,IX4))
04367  1252*     772  I2=1                                                    90030
04370  1253*          I1=1                                                    90040
04371  1254*          IF(IPLAN.EQ.1)   GO TO 1028                             90045
04373  1255*          IF(M.NE.1)   GO TO 774                                  90050
04375  1256*          IF(ISDAY.EQ.7)   GO TO 776                              90060
04377  1257*          IF (IDAY.NE.IYEAR) GO TO 700          @ NOTE=*SHORT YEAR 90070
04401  1258*     776  K1=1                                                    90072
04402  1259*          K2=IDAY                                                 90074
04403  1260*          IF (IDAY.GT.7)  K1=IDAY-ISDAY+1                         90078
04405  1261*          DO 1641  I=1,IX5                                        90082
04410  1262*    1641  WUC(2,I)=WUC(1,I)                                      90084
04412  1263*          M=2                                                     90090
04413  1264*          IF(IOUT(18).EQ.0)   GO TO 7730                          90098
04415  1265*          PRINT 984(IWEEK,NMULT,(IW(K+3),K=K1,K2))                90099
04425  1266*    7730  IWEEK=IWEEK+1                                          A90099
04426  1267*          GO TO 773                                               90100
04427  1268*     774  IF(M.EQ.3)  STOP                                        90110
04431  1269*          IF (IDAY.LT.IYEAR)  GO TO 766   @ NOTE=*SHORT YEAR      90120
04433  1270*          M=3                                                     90130
04434  1271*          PRINT 985                                               90140
04436  1272*          GO TO 773                                               90150
04437  1273*     766  I1=2                                                    90160
04440  1274*          GO TO 700                                               90170
04441  1275*    9200  PRINT 920                                              92700
04443  1276*          STOP                                                    92710
04444  1277*    9210  PRINT 921                                              92720
04446  1278*          STOP                                                    92730
04447  1279*    9220  PRINT 922                                              92740
04451  1280*          STOP                                                    92750
04452  1281*    9230  PRINT 923                                              92760
04454  1282*          STOP                                                    92770
04455  1283*    9240  PRINT 924                                              92780
04457  1284*          STOP                                                    92790
04460  1285*    9370  PRINT 937 (JUNK(J1))                                   92800
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04463  1286*          STOP                                                                    92810
04464  1287*     1028 I2=1                                                                    93500
04465  1288*          I1=2                                                                    93600
04466  1289*          GO TO 700                                                               93600
04467  1290*      899 PRINT 902 (IERR)                                                        93800
04472  1291*          STOP                                                                    93900
04473  1292*      900 FORMAT (12A6)                                                           94000
04474  1293*      901 FORMAT (40I2)                                                           94100
04475  1294*      902 FORMAT (I4,4(1X,09),2I4,F4.1,2A6)                                       94200
04476  1295*      903 FORMAT (2(I4,F5.1,3I1,1412))                                            94300
04477  1296*      904 FORMAT    (I3,1X,I3,F3.1,10(1X,I3,F3.1))                                 94400
04500  1297*      905 FORMAT (I2,25I3)                                                        94500
04501  1298*      906 FORMAT (2A6,I3,1X,I3,1X,F5.2)                                           94600
04502  1299*      907 FORMAT(I4,I1,1X,F6.1,1X,I3,2(1X,I2),5(1X,I3),1X,I2)                     94700
04503  1300*      908 FORMAT (2I4)                                                            94800
04504  1301*      909 FORMAT (2I2,7A6)                                                        94810
04505  1302*      920 FORMAT ('ONUMBER OF JOB TYPES EXCEEDS MAXIMUM')                         94820
04506  1303*      921 FORMAT ('ONUMBER OF BASIC CREWS EXCEEDS MAXIMUM')                       94830
04507  1304*      922 FORMAT ('ONUMBER OF BASIC CREW EQUIPMENTS EXCEEDS MAXIMUM')             94840
04510  1305*      923 FORMAT ('ONUMBER OF HIGHWAYS IN ZONE LIST EXCEEDS MAXIMUM')             94850
04511  1306*      924 FORMAT ('ONUMBER OF ZONES IN ZONE LIST EXCEEDS MAXIMUM')                94860
04512  1307*      925 FORMAT ('INVENTORY BACKLOGGED',I4,' DAYS ON DAY'I4)                     94870
04513  1308*      926 FORMAT ('WEATHER JOB SKIPPED  DAY',I4,'  WEATHER',I2,' INVENTORY I     94880
04513  1309*         1S FULL')                                                                94881
04514  1310*      927 FORMAT ('0                ')                                            94890
04515  1311*      928 FORMAT (1H 2A6,I6,F7.2)                                                 94900
04516  1312*      929 FORMAT ('ONUMBER OF EQUIPMENT TYPES IN INVENTORY EXCEEDS MAXIMUM')      94910
04517  1313*      930 FORMAT (1H+,110X,I4,' JOBS')                                            94920
04520  1314*      931 FORMAT ('1MAXIMA      IX4=',I4,'   IX5=',I4,'   IX5C=',I4,'   IX5E=    94930
04520  1315*         1',I4,'  IX6=',I4,'  IX6Z=',I4,'  IX8=',I4,'  IX9=',I4,'  IX10          94931
04520  1316*         2=',I4)                                                                  94932
04521  1317*      932 FORMAT ('0HOLIDAYS  ',12I4)                                             94940
04522  1318*      933 FORMAT ('1',10X,'JOB TYPES AND BASIC CREW DATA')                        94950
04523  1319*      934 FORMAT ('+',85X,'PAYROLL' F12.2)                                        94955
04524  1320*      935 FORMAT ('  CALCULATED      'I4,7X,I4,2(8X,I4),7X,I4,8X,I4,2(7X,I4))    94960
04525  1321*      936 FORMAT ('  READ JOBS OUT OF SEQUENCE  LAST IN ON DAY 'I3,'  CURREN     94965
04525  1322*         1T JOB IS DATED 'I3)                                                     94966
04526  1323*      937 FORMAT ('0EQUIPMENT TYPE'I3,' NOT IN INVENTORY')                        94970
04527  1324*      950 FORMAT (1H0A6,40I2)                                                     95000
04530  1325*      951 FORMAT(1H0,2A6,I5,I3,4(2X,09),1X,2I4,F4.1,I4)                           95100
04531  1326*      952 FORMAT (78H0   JOB  CREW   PROD  E01 E02 E03 LAB HR COST  EQUIPMEN     95200
04531  1327*         1T INDEX AND TYPE=NUMBER)                                                95300
04532  1328*      953 FORMAT (I7,I6,F7.1,1X,4I4,F7.2,I5,1H=I3,3X,6(2X,2I3))                   95400
04533  1329*      954 FORMAT (1H0A6,I4,I5,2I4,2X,19I5)                                        95500
04534  1330*      955 FORMAT (27X,20F5.1)                                                     95600
04535  1331*      956 FORMAT (1H1,42X,16HWEATHER CALENDAR)                                    95700
04536  1332*      957 FORMAT (1H0,7X,31I3)                                                    95800
04537  1333*      958 FORMAT (1H ,A6,1X,31I3)                                                 95900
04540  1334*      959 FORMAT (  'OWEATHER=DAY DUPLICATE',3I4)                                 96000
04541  1335*      960 FORMAT (1H040X,19HTRAVEL TIME TO ZONE )                                 96100
04542  1336*      961 FORMAT (1H I3,F7.2)                                                     96200
04543  1337*      962 FORMAT (9X,20F6.2)                                                      96300
04544  1338*      963 FORMAT (' PERSONNEL INVENTORY  NUMBER AVAILABLE AND HOURLY RATE')       96400
04545  1339*      964 FORMAT (3X,I3,I5,I3,2F7.2)                                              96500
04546  1340*      965 FORMAT (34H LAST THREE DAYS OF PRECEDING YEAR  58X,3I3)                 96600
04547  1341*      966 FORMAT (1H I4,I5,I2,F7.2,12I4)                                          96700
04550  1342*      967 FORMAT (1H0A6,15I5)                                                     96800
04551  1343*      968 FORMAT(30HMAXIMUM JOB INVENTORY EXCEEDED)                               96900
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04552      1000 FORMAT(' COMPUTER GOT TO ', I3)                                        97000
04553       969 FORMAT('ERROR,IRPER(=IPER) IS ZERO, COMPUTER WILL GO IN AN ENDLESS     97100
04553          1 LOOP')                                                                97200
04554       970 FORMAT (1H1,31X,19HDAILY REPORT   WEEKI3,2X,4HDAY A6,1X,I3,3X,7HWE     97300
04554          1ATHERI2)                                                               97301
04555       971 FORMAT (16H0INDEX TYPE NAME 9X,89H***************LABOR HOURS******     97500
04555          1**********         LABOR     TOTAL     W.U.      W.U.      W.U.     )  97600
04556       972 FORMAT (25X,95HLABORERS  EQ OP 1  EQ OP 2  EQ OP 3  TOTAL        COS   97700
04556          1T        COST  PLANNED      DONE       CARRIED        )                97800
04557       973 FORMAT (I4,I6,1X,2A6,5F9.1,F10.2,F9.2,3F9.1)                           97900
04560       974 FORMAT (1H0,12X,20I6)                                                  98000
04561       975 FORMAT (1H 2A6,20F6.1)                                                 98100
04562       976 FORMAT (1H 2A6,I4,2I5,F7.2)                                            98200
04563       979 FORMAT (1H0,48X,18HEQUIPMENT SUMMARY   )                               98220
04564       980 FORMAT (14H TYPE     COSTS,23I5  )                                     98230
04565       982 FORMAT (I5,F9.2,23I5  )                                                98235
04566       983 FORMAT (7H0TOTAL ,I7,23I5)                                             98240
04567       984 FORMAT (1H1,31X,19HWEEKLY REPORT  WEEK,I2,I3,1X,18HWORK DAYS  WEAT     98245
04567          1HER,7I2)                                                               98246
04570       985 FORMAT (1H1,51X,13HYEARLY REPORT   )                                   98250
04571       986 FORMAT (1H1,31X,18HWEEKLY PLAN   WEEK I3,I6,10H WORK DAYS     )        98255
04572       987 FORMAT(1H0,10X,6HTOTALS,5X,5I9,I10,I9)                                 98260
04573       988 FORMAT (1H0,10X,12HJOB X LABOR ,5F9.1,F10.2)                           98270
04574       990 FORMAT (1H ,2I3,15F6.1)                                                ********
04575       991 FORMAT (7X,15F6.1)                                                     ********
04576       992 FORMAT (10(2X,I3,F6.2))                                                98280
04577       993 FORMAT ('THE FOLLOWING JOB IS IN AN INACCESSABLE ZONE. IT HAS BEEN     98290
04577          1SKIPPED')                                                              98291
04600       994 FORMAT (1H119X,'RECURRING JOB PROTOTYPES')                             98300
04601       995 FORMAT(1H112X,'HIGHWAYS AND CORRESPONDING ZONES')                      98400
04602       996 FORMAT ('0RECURRING JOB TYPE IS UNDEFINED')                            98500
04603       997 FORMAT (1H 10F10.2)                                                    93200
04604       998 FORMAT (1H 2F10.2,13I7)                                                93100
04605       999 FORMAT (1H0I5I7)                                                       93000
04606      2022 IPLAN=1                                                                99995
04607           DO 2021  I=1,IX5                                                       99996
04612      2021 XJUNK1(I)=0.0                                                          99997
04614           DO 2000  I=1,IX10                                                     100000
04614     C ACCEPTABLE JOBS WEEKLY                                                    100100
04617           JRANK(I)=1                                                            100200
04620           JUNK1(I)=IVDL(I)                                                      100300
04621           JIND(I)=0                                                             100400
04622           N=IVTYP(I)                                                            100500
04623           IF (N.NE.1000.AND.N.NE.9999.AND.N.NE.0)   GO TO 1024                  100600
04625           JIND(I)=9                                                             100700
04626           JUNK1(I)=10000                                                        100705
04627      1024 DO 2000 J=1,6                                                         100710
04632           ICREW(I,J)=0                                                          100720
04633      2000 CONTINUE                                                              100800
04636           CALL RANK
04636     C GO TO RANKING SUBROUTINE                                                  101100
04637      1001 DO 1015  I=1,IX10                                                     101200
04642           J2=JRANK(I)                                                           101225
04643           IF(JIND(J2).EQ.9) GO TO 1015                                          101250
04645           J=INDX(J2)                                                            101300
04646           XJUNK1(J)=XJUNK1(J)+VPR(J2)                                           101350
04647           K5=ICRS(J)                                                            101400
04650           K6=ICRN(J)                                                            101500
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04651  1402*          J1=0                                                    101600
04652  1403*          DO 1002 K=K5,K6                                         101700
04655  1404*          J1=J1+1                                                 101750
04656  1405*          XJUNK(J1)=8.0*HCOST(K)/(TOJ(J2)*PROD(K))                101800
04657  1406*     1002 JUNK1(J1)=K                                             101900
04661  1407*          DO 1003  K5=1,J1                                        102200
04664  1408*          DO 1003  K6=K5,J1                                       102300
04664  1409*     C RANK CREWS ON UNIT COST                                    102400
04667  1410*          IF (XJUNK(K5).LE.XJUNK(K6)) GO TO 1003                  102500
04671  1411*          K3=JUNK1(K5)                                            102600
04672  1412*          X=XJUNK(K5)                                             102700
04673  1413*          JUNK1(K5)=JUNK1(K6)                                     102800
04674  1414*          XJUNK(K5)=XJUNK(K6)                                     102900
04675  1415*          JUNK1(K6)=K3                                            103000
04676  1416*          XJUNK(K6)=X                                             103100
04677  1417*     1003 CONTINUE                                                103200
04702  1418*          IF (J1.GT.6)  J1=6                                      103300
04704  1419*          DO 1004  K=1,J1                                         103400
04707  1420*     1004 ICREW(J2,K)=JUNK1(K)                                    103500
04711  1421*     1015 CONTINUE                                                103505
04713  1422*          J8=IDAY                                                 103510
04714  1423*          DO 1114  K=1,IX5                                        103530
04717  1424*     1114 WUP(2,K)=0.0                                            103540
04721  1425*     2050 ISIG=0                                                  103545
04722  1426*          DO 1116     K=1,IX10                                    103560
04725  1427*          K1=JRANK(K)                                             103565
04726  1428*          J=INDX(K1)                                              103570
04727  1429*          N=IVTYP(K1)                                             103572
04730  1430*          IF(N.EQ.1000.OR.N.EQ.2000.OR.N.EQ.3000)  JIND(K1)=9     103575
04732  1431*          NX=4                                                    103577
04733  1432*          IF(IDAY.EQ.1)  NX=MULT                                  103578
04735  1433*          IF (IDTE(K1).GT.IDAY+NX) JIND(K1)=9                     103580
04737  1434*     1116 CONTINUE                                                103590
04741  1435*          DO 1020 I=1,IX10                                        103600
04744  1436*          J=JRANK(I)                                              103700
04745  1437*          IF (JIND(J).EQ.9)  GO TO 1020                           103800
04747  1438*          WPR(J)=VPR(J)                                           103900
04750  1439*          IVMT(J1=0                                               104000
04751  1440*          IF (IVDL(J).LE.J8+NX+2)  GO TO 1005                     104100
04753  1441*          IF(IVTYP(J).EQ.2)  GO TO 1020                           104150
04755  1442*          IVMT(J)=1                                               104200
04756  1443*          WPR(J)=VPR(J)*MULT/(IVDL(J)-J8+1.0)                     104300
04757  1444*     1005 DO 1018 K=1,6                                           104400
04757  1445*     C OVER SIX BEST CREWS                                        104500
04762  1446*          L=ICREW(J,K)                                            104600
04763  1447*          IF (L.EQ.0)  GO TO 1020                                 104700
04765  1448*          L1=WPR(J)/(PROD(L)*TOJ(J))                              104800
04766  1449*          IF (L1.EQ.0)  L1=1                                      104900
04766  1450*     C CREW DAY ESTIMATE                                          105000
04770  1451*     1006 IF (L1*ILAB(L).LE.NDL)  GO TO 1008                      105100
04772  1452*          L1=NDL/ILAB(L)                                          105200
04773  1453*     1007 IF (L1.EQ.0)  GO TO 1018                                105300
04775  1454*          GO TO 1006                                              105400
04776  1455*     1008 K1=IEQ1(L)*L1                                           105500
04777  1456*          K2=IEQ2(L)*L1                                           105600
05000  1457*          K3=IEQ3(L)*L1                                           105700
05001  1458*          L2=IEQS(L)                                              105800
05002  1459*          L3=IEQN(L)                                              105900
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05003  1460*          IF (K1.LE.NDE1)  GO TO 1009                                  106000
05005  1461*          K2=K2-NDE1+K1                                                106100
05006  1462*          K1=NDE1                                                      106200
05007  1463*     1009 IF (K2.LE.NDE2)  GO TO 1010                                  106300
05011  1464*          K3=K3-NDE2+K2                                                106400
05012  1465*          K2=NDE2                                                      106500
05013  1466*     1010 IF (K3.LE.NDE3)  GO TO 1011                                  106600
05015  1467*          L1=L1-1                                                      106700
05016  1468*          GO TO 1007                                                   106800
05017  1469*     1011 DO 1012  L4=L2,L3                                            106900
05022  1470*          L6=L4                                                        107000
05023  1471*          L5=IEQ(L4)                                                   107100
05024  1472*          IF (NDEQT(L5).LT.L1*INO(L4))  GO TO 1026                     107200
05026  1473*     1012 CONTINUE                                                     107300
05030  1474*          ISIG=1                                                       107305
05031  1475*          Y=L1*TOJ(J)                                                  107310
05032  1476*          X=Y*PROD(L)                                                  107400
05033  1477*          M=2                                                          107500
05034  1478*          WPR(J)=WPR(J)-X                                              107600
05035  1479*          IF (IVMT(J).NE.0)  GO TO 1014                                107700
05037  1480*          IF (WPR(J).GT.0.0)  GO TO 1014                               107800
05041  1481*          JIND(J)=9                                                    107810
05042  1482*     1014 NDL=NDL-L1*ILAB(L)                                           107900
05043  1483*          NDE1=NDE1-  K1                                               108000
05044  1484*          NDE2=NDE2-  K2                                               108100
05045  1485*          NDE3=NDE3-  K3                                               108200
05046  1486*          N=INDX(J)                                                    108250
05047  1487*          SLH(M,N)=SLH(M,N)+Y*ILAB(L)                                  108300
05050  1488*          SE1H(M,N)=SE1H(M,N)+Y*IE01(L)                                108550
05051  1489*          SE2H(M,N)=SE2H(M,N)+Y*IE02(L)                                108600
05052  1490*          SE3H(M,N)=SE3H(M,N)+Y*IE03(L)                                108700
05053  1491*          WUP(M,N)=WUP(M,N)+X                                          108710
05054  1492*          IF (WUP(M,N).GT.XJUNK1(N))   WUP(M,N)=XJUNK1(N)              108720
05056  1493*          TCL(M,N)=TCL(M,N)+Y   *(ILAB(L)*CL+K1*CE1+K2*CE2+K3*CE3)     108800
05057  1494*          DO 1016 L4=L2,L3                                             108900
05062  1495*          IF (INO(L4).EQ.0)  GO TO 1016                                109000
05064  1496*          L5=IEQ(L4)                                                   109100
05065  1497*          NDEQT(L5)=NDEQT(L5)-L1*INO(L4)                               109200
05066  1498*          EQH(M,N,L5)=EQH(M,N,L5)+   INO(L4)*Y                        109300
05067  1499*          EQTOT(M,N)=EQTOT(M,N)+   INO(L4)*Y*EQC(L5)                   109400
05070  1500*     1016 CONTINUE                                                     109500
05072  1501*          IF (WPR(J).GT.0.01  GO TO 1018                               109600
05074  1502*          GO TO 1020                                                   109700
05075  1503*     1026 L1=NDEQT(L5)/INO(L6)                                         109800
05076  1504*          GO TO 1007                                                   109900
05077  1505*     1018 CONTINUE                                                     110000
05101  1506*     1020 CONTINUE                                                     110100
05103  1507*          IF (ISIG.EQ.1)  GO TO 2050                                   110200
05105  1508*          XJL(M)=NDL*8                                                 110300
05106  1509*          XJE1(M)=NDE1*8                                               110400
05107  1510*          XJE2(M)=NDE2*8                                               110500
05110  1511*          XJE3(M)=NDE3*8                                               110600
05111  1512*          DO 3091 I=1,IX10                                             110710
05114  1513*          DO 3091 J=1,6                                                110720
05117  1514*     3091 ICREW(I,J)=0                                                 110730
05122  1515*          IF(IOUT(16).EQ.0)  GO TO 772                                 110740
05124  1516*          PRINT 986,  IWEEK,NMULT                                      110750
05130  1517*          GO TO 773                                                    110800
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05131  1518*          END                                                    98300

       END OF UNIVAC 1108 FORTRAN V COMPILATION.      1 *DIAGNOSTIC* MESSAGE(S)
PHASE 1 TIME =    3 SEC.
PHASE 2 TIME =    0 SEC.
PHASE 3 TIME =    6 SEC.
PHASE 4 TIME =    1 SEC.
PHASE 5 TIME =    4 SEC.
PHASE 6 TIME =    3 SEC.

TOTAL COMPILATION TIME =  17  SEC
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@IT FOR HZONE,HZONE
UNIVAC 1108 FORTRAN V LEVEL   2206 0016 F5016B
THIS COMPILATION WAS DONE ON 12 FEB 69 AT 15:07:50

   SUBROUTINE HZONE      ENTRY POINT 000305

   STORAGE USED (BLOCK, NAME, LENGTH)

         0001    *CODE    000314
         0000    *DATA    000055
         0002    *BLANK   004346


   EXTERNAL REFFRENCES (BLOCK, NAME)

         0003    NPRT$
         0004    NI01$
         0005    NI02$
         0006    NERR3$


   STORAGE ASSIGNMENT FOR VARIABLES (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0001    000052 134G     0001    000022 150L     0001    000033 151L     0001    000050 152L     0001    000104 153L
    0001    000122 154L     0001    000142 162L     0001    000126 164G     0001    000163 170L     0001    000165 171L
    0001    000147 177G     0001    000246 190L     0001    000174 214G     0001    000210 223G     0001    000263 899L
    0000    000023 900F     0000    000027 910F     0000    000012 927F     0002 R  002542 CPR      0002 R  001215 DLZ
    0000 R  000000 ERR      0002 I  000000 I        0002 I  003444 IDTE     0002 I  000565 IHY      0002 I  000673 IHYN
    0002 I  000630 IHYS     0002 I  000736 IHZ      0002 I  001640 IVLC     0002 I  004120 IVNZ     0002 I  002066 IVSZ
    0002 I  000001 IX10     0002 I  000002 IX6      0000 I  000002 J        0002 I  003216 JIND     0002 I  003672 JRANK
    0002 I  000003 JUNK1    0000 I  000003 J1       0000 I  000001 K        0000 I  000006 N1       0000 I  000007 N2
    0000 I  000010 N3       0002 R  001474 TT       0002 R  002314 TTJ      0002 R  002770 VPR      0000 R  000004 X
    0000 R  000005 Y        0000 R  000011 Z


00101      1*          SUBROUTINE HZONE                                        SH200000
00101      2*    C******COMMON STATEMENTS*******************.                         99
00103      3*          COMMON  1,IX10,IX6,JUNK1(370)                                 100
00103      4*    C******IX6**HIGHWAYS DEFINED BY ZONES                                110
00104      5*          COMMON  IHY(35),IHYS(35),IHYN(35)                             111
00104      6*    C******IX6Z** ZONES IN LISTED HIGHWAYS                               120
00105      7*          COMMON  IHZ(175),DLZ(175)                                     121
00105      8*    C******IX8** ZONES IN AREA                                           130
00106      9*          COMMON  TT(100)                                               131
00106     10*    C******IX10** JOBS IN INVENTORY                                      140
00107     11*          COMMON  IVLC(150),IVSZ(150),TTJ(150),CPR(150),VPR(150),JIND(150),1   141
00107     12*             IDTE(150),JRANK(150),IVNZ(150)                             142
00107     13*    C CHECK IF THE JOB IS ZONE OR HIGHWAY ORIENTED                  SH200500
00110     14*          IF(CPR(I).LE.0.0)  RETURN                                SH200510
00112     15*          IF(IVLC(I).NE.0)  GO TO 151                              SH200600
00112     16*    C THE JOB IS ZONE ORIENTED                                     SH200700
00114     17*          IF(IVSZ(I).NE.0)  GO TO 150                              SH200800
00114     18*    C ERROR--NO ZONE GIVEN FOR ZONE-ORIENTED JOB                   SH200900
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00116    19*          ERR=3HSZ1                                                  SH201000
00117    20*          GO TO 899                                                  SH201100
00120    21*      150 IVNZ(I)=IVSZ(I)                                            SH201300
00121    22*          K=IVSZ(I)                                                  SH201400
00121    23*      C SET TRAVEL TIME TO ZONE                                      SH201500
00122    24*          TTJ(I)=TT(K)                                               SH201600
00123    25*          RETURN                                                     SH201700
00123    26*      C CHECK TO SEE IF JOB IS FOR A PARTICULAR HIGHWAY              SH201800
00124    27*        151 IF(IVLC(I).LE.990)  GO TO 152                            SH201900
00124    28*      C JOB APPLIES TO MANY ZONES AND NO PARTICULAR HIGHWAY          SH202000
00126    29*          TTJ(I)=0.0                                                 SH202100
00127    30*          IVSZ(I)=42                                                 SH202200
00130    31*          IVNZ(I)=42                                                 SH202300
00131    32*          IVLC(I)=0                                                  SH202400
00132    33*          RETURN                                                     SH202500
00133    34*      152 DO 200 J=1,IX6                                             SH202600
00136    35*          JI=J                                                       SH202700
00137    36*          IF(IVLC(I).EQ.IHY(J)) GO TO 153                            SH202800
00141    37*      200 CONTINUE                                                   SH202900
00143    38*          PRINT 910, IVLC(I),IVSZ(I),IVNZ(I),X,Y                     SH203000
00143    39*      C ERROR--JOB LOCATION IS NOT ON HIGHWAY LIST                   SH203000
00152    40*          ERR=3HSZ4                                                  SH203100
00153    41*          GO TO 899                                                  SH203200
00154    42*      153 N1=IHYS(JI)                                                SH203300
00155    43*          N2=IHYN(JI)                                                SH203400
00155    44*      C JOB IS FOR A HIGHWAY OR PORTION OF A HIGHWAY                 SH203500
00156    45*          IF(IVSZ(I).EQ.0)  GO TO 171                                SH203600
00160    46*          IF(IVNZ(I).NE.0)  GO TO 154                                SH203700
00162    47*          IVNZ(I)=IHZ(N2)                                            SH203800
00163    48*      154 DO 160 J=N1,N2                                             SH204100
00166    49*          N3=J                                                       SH204200
00167    50*          IF(IVSZ(I).EQ.IHZ(J))  GO TO 162                           SH204300
00171    51*      160 CONTINUE                                                   SH204400
00171    52*      C ERROR--STARTING ZONE OF JOB IS NOT ON ZONE LIST              SH204500
00173    53*          ERR=3HSZ5                                                  SH204600
00174    54*          GO TO 899                                                  SH204700
00175    55*      162 N1=N3                                                      SH204800
00176    56*          DO 165 J=N1,N2                                             SH204900
00201    57*          N3=I                                                       SH205000
00202    58*          IF(IVNZ(I).EQ.IHZ(J))   GO TO 170                          SH205100
00204    59*      927 FORMAT ('0JOB TYPE IS UNDEFINED-- JOB IS BEING IGNORED')   94890
00205    60*      165 CONTINUE                                                   SH205200
00205    61*      C ERROR--ENDING ZONE OF JOB IS NOT ON ZONE LIST                SH205300
00207    62*          ERR=3HSZ3                                                  SH205400
00210    63*          GO TO 899                                                  SH205500
00211    64*      170 N2=N3                                                      SH205600
00212    65*      171 X=0.0                                                      SH205800
00213    66*          DO 180 J=N1,N2                                             SH205900
00213    67*      C FIND ZONE IN WHICH JOB WAS LAST ENDED                        SH205950
00216    68*      180 X=X+DLZ(J)                                                 SH206000
00220    69*          Y=CPR(I)/(VPR(I)+CPR(I))                                   SH206100
00221    70*          Z=0.0                                                      SH206300
00222    71*          DO 185 J=N1,N2                                             SH206400
00225    72*          N3=J                                                       SH206500
00226    73*          Z=Z+DLZ(J)                                                 SH206600
00227    74*          IF((Z/X).GT.Y) GO TO 190                                   SH206700
00231    75*      185 CONTINUE                                                   SH206800
00233    76*          PRINT 910, IVLC(I),IVSZ(I),IVNZ(I),X,Y
```

```
00233     77*    C ERROR--MILES OF JOB COMPLETED IS GREATER THAN LENGTH OF HIGHWAY      SH206900
00242     78*          ERR=3HSZ6                                                       SH207100
00243     79*          GO TO 899                                                       SH207200
00244     80*      190 IVSZ(I)=IHZ(N3)                                                 SH207300
00245     81*          N3=IVSZ(I)                                                      SH207325
00246     82*          TTJ(I)=TI(N3)                                                   SH207350
00247     83*          IVNZ(I)=IHZ(N2)                                                 SH207375
00250     84*          RETURN                                                          SH207400
00251     85*      899 PRINT 900, ERR                                                  SH207500
00254     86*          TTJ(I)=1000.0                                                   SH207600
00255     87*          RETURN                                                          SH207650
00256     88*      900 FORMAT(12X,'ERROR AT  ',A3)                                     SH207700
00257     89*      910 FORMAT(10X,3I5,2F9.1)
00260     90*          END                                                             SH207800

      END OF UNIVAC 1108 FORTRAN V COMPILATION,    0 *DIAGNOSTIC* MESSAGE(S)
PHASE 1 TIME =    1 SEC.
PHASE 2 TIME =    0 SEC.
PHASE 3 TIME =    0 SEC.
PHASE 4 TIME =    0 SEC.
PHASE 5 TIME =    0 SEC.
PHASE 6 TIME =    1 SEC.

TOTAL COMPILATION TIME =    2  SEC
```

```
@IT FOR RANK,RANK
UNIVAC 1108 FORTRAN V LEVEL  2206 0016 F5Q16B
THIS COMPILATION WAS DONE ON 12 FEB 69 AT 15:07:53

   SUBROUTINE RANK        ENTRY POINT 000106

   STORAGE USED (BLOCK, NAME, LENGTH)

         0001    *CODE    000122
         0000    *DATA    000030
         0002    *BLANK   003437

   EXTERNAL REFERENCES (BLOCK, NAME)

         0003    NERR3$

   STORAGE ASSIGNMENT FOR VARIABLES (BLOCK, TYPE, RELATIVE LOCATION, NAME)

     0001   000005 107G     0001   000013 112G     0001   000063 134L     0001   000056 174L     0002 R 001633 CPR
     0002 I 000000 I        0002 I 002535 IDTE     0002 I 000731 IVLC     0002 I 003211 IVNZ     0002 I 001157 IVSZ
     0002 I 000001 IX10     0002 I 000002 IX6      0000 I 000003 I2       0000 I 000000 J        0002 I 002307 JIND
     0002 I 002763 JRANK    0002 I 000003 JUNK1    0000 I 000001 J1       0000 I 000002 J2       0002 R 000565 TT
     0002 R 001405 TTJ      0002 R 002061 VPR

00101      1*          SUBROUTINE RANK
00101      2*    C******COMMON STATEMENTS********************                             99
00103      3*          COMMON  I,IX10,IX6,JUNK1(370)                                       100
00103      4*    C******IX8** ZONES IN AREA                                                130
00104      5*          COMMON  TT(100)                                                     131
00104      6*    C******IX10** JOBS IN INVENTORY                                           140
00105      7*          COMMON  IVLC(150),IVSZ(150),TTJ(150),CPR(150),VPR(150),JIND(150),I  141
00105      8*         IDTE(150),JRANK(150),IVNZ(150)                                       142
00106      9*          DO 135 I=1,IX10                                                   59100
00111     10*          DO 134  J=1,IX10                                                  59200
00114     11*          J1=JRANK(I)                                                       59250
00115     12*          J2=JRANK(J)                                                       59275
00116     13*          IF(JIND(J2).EQ.9)  GO TO 134                                      59300
00120     14*          IF (JUNK1(J2)-JUNK1(J1))174,173,134                               59400
00123     15*      173  IF (IDTE(J2).GT.IDTE(J1).AND.JIND(J1).NE.9)    GO TO 134         59500
00125     16*      174 I2=JRANK(J)                                                       59900
00126     17*          JRANK(J)=JRANK(I)                                                 60000
00127     18*          JRANK(I)=I2                                                       60100
00130     19*      134 CONTINUE                                                          60200
00132     20*      135 CONTINUE                                                          60300
00134     21*          RETURN
00135     22*          END

      END OF UNIVAC 1108 FORTRAN V COMPILATION,      0 *DIAGNOSTIC* MESSAGE(S)
PHASE 1 TIME =   0 SEC.
PHASE 2 TIME =   0 SEC.
```

```
PHASE 3 TIME =    0 SEC.
PHASE 4 TIME =    0 SEC.
PHASE 5 TIME =    0 SEC.
PHASE 6 TIME =    0 SEC.

TOTAL COMPILATION TIME =    0  SEC
```

```
@ XQT HIWAY


          BLANK COMMON      157432      163777

          STARTING ADDRESS  014000

          CORE LIMITS 014000 034410     100000 125635     157424 157431


HIWAY /CODE
0   100000-124253
1   014000-027303

NSTOPS/CODE
1   027304-027315

NOUTS /CODE
0   124254-124260
1   027316-030363
2   124261-124321

NTABS /CODE
0   124322-124527

NFTVS /CODE
1   030364-030406

NIOINS/CODE
1   030407-030453
2   124530-124560

NOTINS/CODE
1   030454-030746
2   124561-124623

NFMTS /CODE
1   030747-031754
2   124624-124744

NIERS /CODE
0   124745-124745
1   031755-032122
2   124746-125031

NERRS /CODE
```

```
   0    125032-125150
   1    032123-032462

   NINPTS/CODE
   0    125151-125151
   1    032463-033616
   2    125152-125204

   FLOATX
   0    125205-125320

   NEXPSX
   0    125321-125405

   CONVTX
   0    125406-125460

   NININS/CODE
   1    033617-033752
   2    125461-125530

   RANK  /CODE
   0    125531-125560
   1    033753-034074

   HZONE /CODE
   0    125561-125635
   1    034075-034410


END OF ALLOCATION 1103   0033
```

MAXIMA IX4= 25 IX5= 30 IX5C= 110 IX5E= 250 IX6= 35 IX6Z= 175 IX8= 100 IX9= 80 IX10= 150

HOLIDAYS 1 53 150 185 215 310 324 359

INPUT 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

OUT 1 1 1 1 1 1 1 1 1 1 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

PERSONNEL INVENTORY NUMBER AVAILABLE AND HOURLY RATE

FOREMEN	7	3.45
EQ OP 1	23	2.50
EQ OP 2	4	2.85
EQ OP 3	1	3.25
LABORERS	58	2.00

EQUIPT				
TOWED DISTRB	1	1	1	1.20
DUMP TRUCK	2	2	24	2.40
ROLLER	3	3	5	3.90
ASPHALT PVER	4	4	1	10.40
MOTOR GRADER	5	5	4	7.80
TOWED BROOM	6	6	1	1.00
FARM TRACTOR	7	7	9	1.25
AIR COMPRESS	8	8	2	2.50
PICKUP TRUCK	9	9	3	1.00
TRK-PNT STRP	10	10	1	7.20
FLT-BED TRCK	11	11	2	1.20
FRNT-END LDR	12	12	5	4.90
GRADALL	13	13	1	13.00
TOWD ASPH KT	14	14	4	.60
POWER SPR RG	15	15	1	.75
SCREENSDE TK	16	16	2	1.30
MOBILE SWEEP	17	17	1	7.20
SICKLE-BAR M	18	18	6	1.00
ROTARY MOWER	19	19	3	1.00

JOB TYPES AND BASIC CREW DATA

EMERGENCY 1000 1 11111111 11111111 11111111 11111111 1 370 .0 1

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
1	1	1.0	1	0	0	2	8.90	1- 1	2	1	

TRAFFIC SERV 2 2 11111111 11111111 11111111 11111111 1 370 .0 2

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
2	2	1.0	1	0	0	2	8.90	2- 2	2	1	

LIGHT SNOW 2000 3 000000000 000000000 000000000 000000000 1 370 .0 3

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
3	3	.1	1	0	0	1	6.90	3- 3	2	1	
3	4	.0	0	0	0	1	2.00	4- 4	2	0	
3	5	.0	1	0	0	0	2.50	5- 5	2	0	

SNOW PLOW 3000 4 000000000 000000000 000000000 000000000 1 370 .0 6

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
4	6	.1	1	0	0	1	6.90	6- 6	2	1	
4	7	.0	1	0	0	0	4.90	7- 7	2	1	
4	8	.0	0	0	1	0	3.25	8- 8	2	0	
4	9	.0	0	0	0	1	2.00	9- 9	2	0	

SNOW CLEAN 3500 5 000000000 000000000 000000000 000000000 1 370 .0 10

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
5	10	.1	1	0	0	0	4.90	10- 10	2	1	
5	11	.0	1	0	0	0	10.30	11- 11	5	1	
5	12	.0	0	0	0	11	22.00	12- 12	2	0	
5	13	.0	0	0	0	1	2.00	13- 13	2	0	

3 6 000110110 100110110 100111111 110111111 0 346 .5 14

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
6	14	.9	2	1	0	3	30.35	14- 16	5	1	2 2 3 1
6	15	1.3	2	2	0	4	45.40	17- 19	5	2	2 3 3 1
6	16	2.3	4	2	0	4	52.65	20- 24	5	2	2 3 6 1 7 1 3 1

4 7 100100100 11111111 11111111 11111111 289 320 1.0 17

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
7	17	540.0	3	0	0	4	22.70	25- 25	2	3	
7	18	585.0	3	0	0	5	24.70	26- 26	2	3	
7	19	625.0	4	0	0	6	31.60	27- 27	2	4	
7	20	415.0	2	0	0	3	15.80	28- 28	2	2	

5 8 100100100 11111111 11111111 11111111 75 106 .5 21

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND	TYPE-NUMBER
8	21	1300.0	2	0	0	4	17.80	29- 29	2	2	
8	22	1690.0	3	0	0	5	24.70	30- 30	2	3	
8	23	2050.0	4	0	0	6	31.60	31- 31	2	4	
8	24	1150.0	2	0	0	3	15.80	32- 32	2	2	

6 9 000100100 100111111 100111111 110111111 75 289 1.0 25

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
9	25	4.0	4	1	0	3	29.65	33- 35 10 1 11 1 2 1

8 10 000100100 100100100 110110110 111110110 0 366 .5 26

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
10	26	.6	2	0	1	5	36.05	36- 37 13 1 2 2
10	27	.9	2	0	1	6	40.45	38- 39 13 1 2 3

9 11 000100100 100110110 100111111 110111111 336 60 1.5 28

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
11	28	.2	1	0	0	1	6.90	40- 40 2 1
11	29	.3	1	0	0	4	12.90	41- 41 2 1
11	30	595.0	2	0	0	9	33.30	42- 44 2 3 14 1 8 1
11	31	637.0	2	0	0	9	33.30	45- 47 2 3 14 1 8 1

10 12 000100000 100100100 100110110 110110110 153 305 .5 32

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
12	32	2.3	0	0	0	3	12.75	48- 50 7 3 18 2 19 1
12	33	3.2	1	0	0	4	19.50	51- 53 7 4 18 2 19 2
12	34	.9	0	0	0	1	4.25	54- 55 7 1 18 1
12	35	2.0	0	0	0	2	8.50	56- 58 7 2 18 1 19 1
12	36	2.6	0	0	0	4	17.00	59- 61 7 4 18 3 19 1
12	37	1.4	1	0	0	2	11.00	62- 63 7 2 18 2

101 13 000100100 100110110 110111111 111111111 0 366 1.5 38

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
13	38	2.7	2	0	0	4	22.30	64- 66 14 1 2 2 3 1
13	39	3.3	2	0	0	5	26.70	67- 69 14 1 2 3 3 1
13	40	5.4	3	0	0	5	29.80	70- 72 1 1 2 3 3 1
13	41	6.0	4	0	0	6	36.70	73- 75 1 1 2 4 3 1

102 14 000100100 100111111 110111111 111111111 0 366 2.0 42

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
14	42	1.0	1	0	0	2	9.50	76- 77 14 1 2 1
14	43	2.0	2	0	0	4	22.30	78- 80 14 1 2 2 3 1
14	44	4.0	3	0	0	7	33.20	81- 83 14 1 2 3 3 1
14	45	5.0	4	0	0	7	38.10	84- 86 14 1 2 4 3 1
14	46	10.0	4	1	0	8	53.75	87- 90 1 1 2 5 3 1 5 1

103 15 100110110 100111111 110111111 111111111 0 366 .5 47

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
15	47	7.0	2	0	0	2	13.80	91- 91 2 2
15	48	14.0	3	1	0	2	29.35	92- 93 2 3 5 1
15	49	3.5	1	0	0	1	6.90	94- 94 2 1

104 16 000100100 100111111 100111111 110111111 0 366 1.0 50

JOB	CREW	PROD	EQ1	EQ2	EQ3	LAB	HR COST	EQUIPMENT INDEX AND TYPE-NUMBER
16	50	1.5	0	1	0	0	10.65	95- 95 5 1
16	51	2.8	0	2	0	0	21.30	96- 96 5 2

105 17 100100100 100100100 100110110 110110110 0 366 .0 52

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
17	52	143.0	1	0	0	1	6.90	97- 97	2	1
17	53	200.0	1	0	0	3	10.90	98- 98	2	1
17	54	430.0	1	0	0	5	14.90	99- 99	2	1
17	55	571.0	1	0	0	8	23.30	100-100	2	2

106 18 100100100 100111111 110111111 111111111 0 366 .0 56

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
18	56	5.0	1	0	0	1	6.90	101-101	2	1
18	57	7.0	1	0	0	2	8.90	102-102	2	1
18	58	12.0	1	0	0	4	12.90	103-103	2	1

108 19 000110110 110111111 110111111 111111111 0 366 .5 59

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
19	59	46.0	1	0	0	1	5.80	104-104	16	1
19	60	62.0	1	0	0	2	7.80	105-105	16	1

1 20 000100100 100111111 100111111 110111111 153 245 .5 61

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
20	61	26.9	6	0	0	7	58.90	106-109	1 1	2 6 3 1 4 1
20	62	17.7	4	0	0	7	49.10	110-113	1 1	2 4 3 1 4 1

7 21 100100100 100100100 100110110 110110110 0 366 .5 63

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
21	63	67.0	3	1	0	3	33.85	114-116	5	1 2 2 12 1
21	64	100.0	4	2	0	4	51.40	117-119	5	2 2 3 12 1
21	65	67.0	3	0	1	3	34.55	120-121	13	1 2 2
21	66	100.0	4	1	1	4	52.10	122-124	13	1 5 1 2 3

107 22 000100100 100111111 100111111 110111111 92 305 1.0 67

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
22	67	117.0	1	0	0	2	8.45	125-126	11	1 15 1
22	68	83.0	1	0	0	2	8.90	127-127	2	1

109 23 100100100 110100100 100111111 110111111 0 366 .0 69

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
23	69	4.0	1	0	0	2	8.90	128-128	2	1
23	70	6.5	1	0	0	4	12.90	129-129	2	1
23	71	9.0	1	0	0	6	19.30	130-130	2	2
23	72	3.0	1	0	0	1	6.90	131-131	2	1

110 24 100100100 100110110 110111111 111111111 0 366 1.0 73

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER
24	73	2.0	1	0	0	0	9.70	132-132	17	1

111 25 100110110 111111111 111111111 111111111 0 366 .5 74

JOB	CREW	PROD	E01	E02	E03	LAB	HR COST	EQUIPMENT	INDEX	AND TYPE-NUMBER

25	74	5.0	1	0	0	1	5.80	133-133	16	1
25	75	7.0	1	0	0	2	7.80	134-134	16	1

HIGHWAYS AND CORRESPONDING ZONES

ZONE	1	301	1	13	3	13	19	26	34	343	42	51	50	59	67	74	83
					1.6	2.0	2.0	2.1	2.0	2.1	1.0	1.2	1.6	2.2	2.3	2.0	2.0
ZONE	2	381	14	21	74	75	76	85	86	89	92	93					
					.5	8.1	.8	1.9	1.3	2.1	2.5	2.0					
ZONE	3	382	22	31	50	51	60	69	70	78	8	86	91	82			
					.3	2.4	2.5	1.0	1.4	2.5	7.9	1.3	1.6	1.5			
ZONE	4	202	32	40	7	8	9	16	17	24	25	33	34				
					2.4	2.1	1.8	2.0	.4	1.0	2.2	1.2	1.0				
ZONE	5	3	41	41	6												
					2.6												
ZONE	6	215	42	42	21												
					1.6												
ZONE	7	972	43	43	21												
					.4												
ZONE	8	458	44	46	21	29	28										
					1.2	.5	1.2										
ZONE	9	714	47	47	30												
					.5												
ZONE	10	408	48	50	41	42	43										
					2.1	2.1	2.9										
ZONE	11	884	51	53	21	22	30										
					2.6	.7	1.0										
ZONE	12	50	54	60	7	1	2	3	4	5	6						
					2.9	2.3	1.9	1.9	2.0	2.0	1.4						
ZONE	13	495	61	70	34	37	38	39	30	23	16	9	2	1			
					1.5	2.0	2.0	2.0	2.8	2.3	2.0	2.0	1.0	1.0			
ZONE	14	295	71	71	36												
					.8												
ZONE	15	5	72	78	28	39	47	48	57	66	74						
					2.7	3.0	1.1	1.3	2.1	2.1	.9						
ZONE	16	337	79	80	30	39											
					1.5	1.2											
ZONE	17	4	81	88	21	29	30	31	40	41	42	43					
					3.1	.5	2.1	1.0	1.6	2.1	2.0	2.0					
ZONE	18	414	89	91	37	38	28										
					2.1	.8	1.8										

ZONE	19	210	92	98	37	45	54	63	71	80	79	
					1.7	2.0	2.0	1.9	2.1	.3	4.5	
ZONE	20	223	99	105	40	49	48	56	55	64	71	
					2.1	1.9	2.1	2.3	1.0	2.2	1.2	
ZONE	21	373	106	111	79	80	81	82	73	74		
					.6	2.1	2.1	.4	1.7	1.3		
ZONE	22	214	112	118	14	15	15	17	18	19	20	
					1.3	1.9	2.0	1.9	1.9	2.1	2.6	
ZONE	23	586	119	123	3	10	17	18	25			
					2.1	2.2	1.0	1.3	.2			
ZONE	24	459	124	124	7							
					2.4							
ZONE	25	637	125	125	28							
					.6							
ZONE	26	631	126	126	78							
					.4							
ZONE	27	973	127	127	7							
					.2							
ZONE	28	704	128	132	3	2	1	8	14			
					.5	2.2	.5	2.2	1.4			

WEATHER CALENDAR

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
LAST THREE DAYS OF PRECEDING YEAR																													2	4	4
JAN	4	4	5	5	4	6	4	1	3	3	1	1	1	1	1	1	5	4	4	4	4	6	4	4	4	1	4	2	2	4	4
FEB	4	4	6	4	4	4	2	3	1	2	4	2	5	4	3	5	4	1	1	1	4	1	4	1	2	4	4	4	5		
MARCH	4	4	4	4	5	4	4	4	4	4	5	4	4	4	4	4	4	3	2	4	4	4	5	4	4	4	2	2	2	5	4
APRIL	4	4	6	5	5	4	4	4	4	4	6	5	4	4	4	5	5	5	5	4	4	4	4	4	4	5	5	4	4	4	
MAY	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
JUNE	4	4	5	4	4	4	4	4	4	4	7	8	4	4	4	5	8	7	4	4	5	4	4	6	4	4	7	7	4	8	
JULY	4	4	4	4	6	4	4	4	5	5	4	4	7	7	4	7	4	5	5	7	4	4	4	4	7	7	4	4	4	4	6
AUGUST	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	4	4	7	7	4	4	7	4	4	4	4	7	4	4	4
SEPT	4	4	4	4	4	4	4	7	4	5	4	4	4	4	4	5	4	4	4	4	4	4	4	4	6	6	6	4	5	4	
OCT	4	4	4	4	4	4	4	4	4	4	4	4	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
NOV	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	4	1	4	4	6	4	4	4	4	4	1	4	5	
DEC	5	5	4	1	4	4	1	4	6	4	4	2	1	4	4	1	5	1	4	4	4	4	5	6	4	4	4	4	4	4	4

TRAVEL TIME TO ZONE

1	.45	2	.43	3	.43	4	.43	5	.37	6	.38	7	.43	8	.37	9	.37	10	.37
11	******	12	******	13	.30	14	.43	15	.37	16	.30	17	.30	18	.23	19	.23	20	.30
21	.26	22	.22	23	.23	24	.32	25	.15	26	.15	27	******	28	.32	29	.25	30	.18
31	.15	32	******	33	.10	34	.08	35	******	36	.47	37	.40	38	.35	39	.27	40	.13
41	.07	**********		43	.07	44	******	45	.48	46	********	47	.32	48	.23	49	.17	50	.12
51	.07	52	******	53	******	54	.53	55	.42	56	.38	57	.46	58	******	59	.18	60	.13
61	******	62	******	63	.57	64	.45	65	******	66	.42	67	.25	68	.23	69	.18	70	.20
71	.55	72	.48	73	.52	74	.32	75	.32	76	.37	77	******	78	.27	79	.62	80	.58
81	.58	82	.55	83	.42	84	******	85	.40	86	.38	87	.32	88	.33	89	.43	90	.42
91	.40	92	.47	93	.53	94	******												

RECURRING JOB PROTOTYPES

1	2	0	16.00	991	0	0	1	1	1	1	1	0
2	8	2	.10	495	0	0	4	7	366	0	11	30
3	8	2	.10	495	0	0	4	7	366	0	2	30
4	8	2	.10	495	0	0	4	7	366	0	4	30
5	8	2	.10	495	0	0	4	7	366	0	91	30
6	8	2	.10	295	0	0	4	7	366	0	222	30
7	108	3	100.00	993	0	0	10	30	366	0	2	40
8	111	3	.30	301	26	0	0	1	5	0	4	20
9	102	3	5.00	556	10	0	2	7	7	0	30	20
10	111	3	.10	223	40	0	0	1	5	0	4	20
11	111	3	.10	373	79	0	0	1	5	0	4	20
12	111	3	.20	50	7	0	0	1	5	0	4	20
13	102	3	1.00	459	7	0	2	7	7	0	30	20
14	102	3	1.00	459	7	0	2	7	7	0	30	20
15	102	3	1.00	301	83	0	2	7	7	0	30	20
16	101	3	.70	495	38	0	2	1	60	0	30	20
17	111	3	.10	214	14	0	0	1	5	0	4	20
18	102	3	2.00	202	33	0	2	7	7	0	30	20
19	101	3	.30	210	45	0	2	1	60	0	30	0
20	111	3	.10	382	50	0	0	1	5	0	4	20
21	111	3	.10	704	3	0	0	1	5	0	4	20
22	102	3	3.00	3	6	0	2	7	7	0	30	20
23	102	3	4.00	50	4	0	2	7	7	0	30	20
24	104	3	3.10	382	0	0	2	3	10	0	180	40
25	111	3	.20	4	21	0	0	1	5	0	4	20
26	111	3	.10	459	7	0	0	1	5	0	4	20
27	111	3	.10	381	74	0	0	1	5	0	4	20
28	101	3	1.40	5	39	0	2	1	60	0	30	0
29	111	3	.10	458	21	0	0	1	5	0	4	20
30	111	3	.10	337	30	0	0	1	5	0	4	20
31	111	3	.10	408	41	0	0	1	5	0	4	20
32	102	3	2.00	5	48	0	2	7	7	0	30	20
33	111	3	.10	414	37	0	0	1	5	0	4	20
34	102	3	1.00	414	37	0	2	7	7	0	30	20
35	101	3	.70	704	8	0	2	1	60	0	30	20
36	101	3	.70	337	30	0	2	1	60	0	30	20
37	101	3	.30	373	73	0	2	1	60	0	30	20
38	10	2	26.00	301	0	0	8	30	30	153	40	30
39	10	2	15.90	202	0	0	8	30	30	153	40	30
40	10	2	2.90	3	0	0	8	30	30	153	40	30

MAXIMA CALCULATED			IX4= 25		IX5= 30		IX5C= 110			IX5E= 250	IX6= 35	IX6Z= 175	IX8= 100	IX9= 80	IX10=
			19		25		75			134	28	132	94	40	
1	108	3	700.00	0	42	42	10	30	367	1	19				
2	4	2	580.00	373	79	74	2	7	181	1	7				
3	4	2	480.00	214	14	20	2	7	181	1	7				
4	4	2	230.00	556	3	25	2	7	181	1	7				
5	4	2	110.00	459	7	7	2	7	181	1	7				
6	4	2	260.00	704	3	14	2	7	181	1	7				
7	5	2	700.00	301	3	83	2	7	367	1	8				
8	5	2	420.00	202	7	34	2	7	367	1	8				
9	5	2	80.00	3	6	6	2	7	367	1	8				
10	5	2	450.00	50	7	6	2	7	367	1	8				
11	5	2	410.00	5	28	74	2	7	367	1	8				
12	5	2	440.00	4	21	43	2	7	367	1	8				
13	5	2	100.00	210	37	79	2	7	367	1	8				
14	5	2	400.00	495	34	1	2	7	367	1	8				
15	5	2	30.00	295	36	36	2	7	367	1	8				
16	5	2	480.00	381	74	93	2	7	367	1	8				
17	5	2	500.00	382	50	82	2	7	367	1	8				
18	5	2	80.00	458	21	28	2	7	367	1	8				
19	5	2	240.00	408	41	43	2	7	367	1	8				
20	5	2	130.00	884	21	30	2	7	367	1	8				
21	5	2	110.00	337	30	39	2	7	367	1	8				
22	5	2	170.00	414	37	28	2	7	367	1	8				
23	5	2	440.00	223	40	71	2	7	367	1	8				
24	5	2	560.00	373	79	74	2	7	367	1	8				
25	5	2	460.00	214	14	20	2	7	367	1	8				
26	5	2	230.00	556	3	25	2	7	367	1	8				
27	5	2	110.00	459	7	7	2	7	367	1	8				
28	5	2	260.00	704	3	14	2	7	367	1	8				
29	6	2	24.00	0	42	42	8	30	367	1	9				
30	6	2	13.00	0	42	42	8	30	367	1	9				
31	110	3	1.40	495	34	1	4	5	31	1	24				
32	1000	1	3.00	0	71	71	2	8	18	10	1				
33	2	0	16.00	0	42	42	1	1	3	2	2				
34	2	0	16.00	0	42	42	1	1	4	3	2				
35	2	0	16.00	0	42	42	1	1	5	4	2				
36	2	0	16.00	0	42	42	1	1	8	7	2				
37	2	0	16.00	0	42	42	1	1	9	8	2				
38	8	2	.10	495	34	1	4	7	366	0	10				
39	8	2	.10	495	34	1	4	7	366	0	10				
40	8	2	.10	495	34	1	4	7	368	2	10				
41	8	2	.10	495	34	1	4	7	370	4	10				
42	8	2	.10	495	34	1	4	7	372	6	10				
43	8	2	.10	495	34	1	4	7	374	8	10				
44	8	2	.10	495	34	1	4	7	366	0	10				
45	8	2	.10	495	34	1	4	7	370	4	10				
46	8	2	.10	495	34	1	4	7	374	8	10				
47	8	2	.10	495	34	1	4	7	366	0	10				
48	8	2	.10	295	36	36	4	7	366	0	10				
49	108	3	100.00	0	42	42	10	30	366	0	19				
50	108	3	100.00	0	42	42	10	30	368	2	19				
51	108	3	100.00	0	42	42	10	30	370	4	19				
52	108	3	100.00	0	42	42	10	30	372	6	19				
53	108	3	100.00	0	42	42	10	30	374	8	19				
54	111	3	.30	301	26	7	0	1	5	0	25				
55	111	3	.30	301	26	1	0	1	9	4	25				
56	111	3	.30	301	26	2	0	1	13	8	25				

57	102	3	5.00	556	10	3	2	7	7	0	14
58	111	3	.10	223	40	4	0	1	5	0	25
59	111	3	.10	223	40	5	0	1	9	4	25
60	111	3	.10	223	40	6	0	1	13	8	25
61	111	3	.10	373	79	34	0	1	5	0	25
62	111	3	.10	373	79	37	0	1	9	4	25
63	111	3	.10	373	79	38	0	1	13	8	25
64	111	3	.20	50	7	39	0	1	5	0	25
65	111	3	.20	50	7	30	0	1	9	4	25
66	111	3	.20	50	7	23	0	1	13	8	25
67	102	3	1.00	459	7	16	2	7	7	0	14
68	102	3	1.00	459	7	9	2	7	7	0	14
69	102	3	1.00	301	83	2	2	7	7	0	14
70	101	3	.70	495	38	1	2	1	60	0	13
71	111	3	.10	214	14	36	0	1	5	0	25
72	111	3	.10	214	14	28	0	1	9	4	25
73	111	3	.10	214	14	39	0	1	13	8	25
74	102	3	2.00	202	33	47	2	7	7	0	14
75	101	3	.30	210	45	48	2	1	60	0	13
76	111	3	.10	382	50	57	0	1	5	0	25
77	111	3	.10	382	50	66	0	1	9	4	25
78	111	3	.10	382	50	74	0	1	13	8	25
79	111	3	.10	704	3	30	0	1	5	0	25
80	111	3	.10	704	3	39	0	1	9	4	25
81	111	3	.10	704	3	21	0	1	13	8	25
82	102	3	1.00	3	6	29	2	7	7	0	14
83	102	3	4.00	50	4	30	2	7	7	0	14
84	104	3	3.10	382	50	82	2	3	10	0	16
85	111	3	.20	4	21	40	0	1	5	0	25
86	111	3	.20	4	21	41	0	1	9	4	25
87	111	3	.20	4	21	42	0	1	13	8	25
88	111	3	.10	459	7	43	0	1	5	0	25
89	111	3	.10	459	7	37	0	1	9	4	25
90	111	3	.10	459	7	38	0	1	13	8	25
91	111	3	.10	381	74	28	0	1	5	0	25
92	111	3	.10	381	74	37	0	1	9	4	25
93	111	3	.10	381	74	45	0	1	13	8	25
94	101	3	1.40	5	39	54	2	1	60	0	13
95	111	3	.10	458	21	63	0	1	5	0	25
96	111	3	.10	458	21	71	0	1	9	4	25
97	111	3	.10	458	21	80	0	1	13	8	25
98	111	3	.10	337	30	79	0	1	5	0	25
99	111	3	.10	337	30	40	0	1	9	4	25
100	111	3	.10	337	30	49	0	1	13	8	25
101	111	3	.10	408	41	48	0	1	5	0	25
102	111	3	.10	408	41	56	0	1	9	4	25
103	111	3	.10	408	41	55	0	1	13	8	25
104	102	3	2.00	5	48	64	2	7	7	0	14
105	111	3	.10	414	37	71	0	1	5	0	25
106	111	3	.10	414	37	79	0	1	9	4	25
107	111	3	.10	414	37	80	0	1	13	8	25
108	102	3	1.00	414	37	81	2	7	7	0	14
109	101	3	.70	704	8	82	2	1	60	0	13
110	101	3	.70	337	30	73	2	1	60	0	13
111	101	3	.30	373	73	74	2	1	60	0	13

WEEKLY PLAN WEEK 0 3 WORK DAYS 0 JOBS

INDEX	TYPE	NAME	LABOR HOURS LABORERS	EQ OP 1	EQ OP 2	EQ OP 3	TOTAL	LABOR COST	TOTAL COST	W.U. PLANNED	W.U. DONE	W.U. CARRIED
2	2	TRAFFIC SERV	48.0	24.0	.0	.0	72.0	156.00	213.60	.7	.0	.0
7	4		90.9	60.6	.0	.0	151.5	333.30	478.74	.5	.0	.0
8	5		601.9	300.9	.0	.0	902.8	1956.07	2678.31	4.0	.0	.0
9	6		42.0	56.0	14.0	.0	112.0	263.90	415.10	.2	.0	.0
10	8		132.0	44.0	.0	22.0	198.0	455.77	900.17	1.7	.0	.0
14	102		10.5	5.3	.0	.0	15.8	36.08	51.88	5.3	.0	.0
19	108		60.0	30.0	.0	.0	90.0	202.87	241.87	.6	.0	.0
24	110		.0	6.8	.0	.0	6.8	17.08	68.28	.7	.0	.0
25	111		28.8	14.4	.0	.0	43.2	98.64	117.36	100.8	.0	.0
		TOTALS	1014	542	14	22	1592	3520	5163			
		JOB X LABOR	216.0	.0	.0	.0	216.0	432.00				

EQUIPMENT SUMMARY

TYPE	COSTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2	57.60	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	145.44	0	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	722.24	0	301	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	151.20	0	14	0	0	0	0	0	0	0	14	14	0	0	0	0	0	0	0	0
8	444.40	0	66	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0
102	15.80	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
108	39.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	0	0	0
110	49.20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0
111	18.72	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0
TOTAL	1644	0	471	0	0	0	0	0	0	0	14	14	0	22	5	0	44	7	0	0

112 2 0 16.00 0 42 42 1 1 10 9 2

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