

Diagnostic Engineering Publications
1410/7010

IBM POUGHKEEPSIE
December 31, 1964

Subject: Diagnostic Program T022D - IRG Test

Sequence Number 208, 209
Replaces T022C

T022 requires information on system and channel configuration, As described in the "1410/7010 INTRODUCTION", vol. 1.00. When running from cards this information must be punched into the control cards listed below:

Control Card Name	Card #	
	Phase I	Phase II
System Control	001	139
Channel One	002	140
Channel Two	003	141
Channel Three	004	142
Channel Four	005	143

The changes made to T022C to create T022D include:

1. A GMWM at location 09999, erroneously altered in the C level update.
2. A change to provide re-initialization of a delay routine for 7330's.
3. Changing a loop time constant used to determine drive model.

Enclosures: 89 Pages
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
9 Cards - Card Loader (1-7) and 2 Core Clear
276 Cards No. 001-276 Data Cards
2 Card Execute Card

Distribution: X 1410
 X 7010
 Other

052

T022

TAPE RECORD GAP TEST

12/31/64

TABLE OF CONTENTS

4.00.00.0	Test Description	Page 003
4.00.01.0	Loading Procedures	Page 004
4.00.02.0	Operating Procedures	Page 005
4.00.03.0	Operating Hints, Comments	Page 006
4.00.04.0	Program Stops and Restarts	Page 007
4.00.05.0	Typeouts and Printouts	Page 008
4.00.06.0	Flow Charts	Page 013
4.00.07.0	Appendices	Page 015
4.00.08.0	Listing	Page 001
	Summary	Page 070

TAPE RECORD GAP TEST

4. xx. 00. 0 TEST DESCRIPTION

00. 1 MODIFICATION

Program modification to prior level

00. 2 DESCRIPTION

This program was designed to be run on three Systems 1410, 1410 ACCELERATOR and the 7010, depending upon the System Card, numbered 001 and provide the Customer Engineer with the measurements of time, in milliseconds, between records written on tape with varying Go Down times between the write instructions. The reading and computing of the time measurement is made while the tape is moving at full speed.

There are nine groups of gaps which contain a total of 100 gaps with the exception of the 5 SEC Go Down group which contains 5 gaps and the WRT-BSP-WTM group which contains 50 gaps. Each group of 100 gaps is made up of 10 sets and each set contains: a Reference Record followed by a Tape Mark to denote the beginning of a set, ten Reference Records, each one followed by a record 1 inch in length containing a Tape Mark as the first character to form the gap. The end of a set is identified by a Tape Mark.

The reference record contains the group number, the gap number, the channel and drive designation, model, density and set number.

The program itself determines the model and the density, therefore the density switches can be set to 200, 556 or 800.

This program uses two memory loads and is divided into a write and a read section, consequently, the program cannot be repeated in its entirety without being reloaded. The Read section may be repeated by setting TAD3 to a 1.

4. xx. 00. 0 TEST DESCRIPTION (continued)

00. 3 EQUIPMENT

Basic System CPU
 1414 I/O Adapter
 729 (Any Model)
 7330

00. 4 CARD DECK

7 cards	Loader
2 card	Core Clear
276 cards	Program cards
2 cards	Execute card (Branch to 2000)

00. 5 EC LEVEL OF MACHINE

1414 TAU	EC 252643
729	EC 251448
7330	EC 251867

4. xx. 01. 0 LOADING PROCEDURES

01. 1 FROM CARDS (Load Program LIA preceding Card Deck)

A. 7010-1410 without Load Button.

1. Display Memory Location 00000

2. Alter to

$$\begin{matrix} \vee\vee & & \vee \\ \text{RL}\%1100011\$ & & \end{matrix}$$

$$\left. \begin{matrix} \vee \\ \text{X} \quad \square \\ \vee \\ 3 \quad ? \\ \vee \\ 1 \quad ! \end{matrix} \right\}$$

Enter according to channel
 location of the card reader.

3. Set to Run, Computer Reset and Start.

4.xx.01.0 LOADING PROCEDURES (continued)

B. 7010 with Load Button

1. Computer Reset
2. Depress Load Button

01.2 FROM TAPE (80 Character Master or Memory Dump Tape)

A. 7010-1410 without Load Button

1. Display Memory Location 00000
2. Alter to

$$\begin{array}{c} \text{vv} \\ \text{RL}\% \text{B000911}\$. \end{array}$$

$$\left. \begin{array}{l} \text{v} \\ \text{X} \quad \square \\ \text{y} \\ \text{3} \quad ? \\ \text{v} \\ \text{l} \quad ! \end{array} \right\}$$

Enter according to channel
location of the tape drive.

3. Set to Run, press Computer Reset.

B. 7010 with Load Button

1. Computer Reset
2. Depress Load Button

4.xx.02.0 OPERATING PROCEDURES

The latest reliability program should be run prior to this test to insure proper operation of the equipment.

Load and make Ready the drives to be tested. Load the program by the previously mentioned method.

No tads are required for the program to test all ready drives to completion.

4. xx. 02. 0

OPERATING PROCEDURES (continued)

NORMAL TADS		Location 1000	
TAD 0	OFF	1	Normal typeouts
	ON	1	Bypass typeouts
TAD 1	OFF	1	No loops
	ON	1	loop
TAD 2	OFF	1	No error halts
	ON	1	Halt on error
TAD 3	OFF	1	One pass of program
	ON	1	Repeat program (Read Section only)
TAD 4			NOT USED
TAD 5	OFF	1	Print bad gaps
	ON	1	Bypass bad gap print
TAD 6	OFF	1	No tape output
	ON	1	Output on tape 0
TAD 7	OFF	1	Type averages
	ON	1	Type graph

4. xx. 03. 0

OPERATING HINTS, COMMENTS

System information must be punched into Card 003 prior to running this test for the initial time.

Two special operation codes are provided in these systems to make it possible to measure the inter-record gaps. A unit control instruction with an A-modifier, and a Branch-on Internal Indicator with a K-modifier.

The unit control instruction sends a Read Tape Call to the TAU, spaces over a record but transfers no information from tape to storage.

The Branch-on Internal Indicator with the K-modifier will branch immediately upon reading a Tape Mark as the first character of the record.

4. xx. 03. 0

OPERATING HINTS, COMMENTS (continued)

OPTIONAL OUTPUT

If typewriter output is desired, make printer NOT READY. NORMAL output is on the printer.

An option has been provided to type the graph on the Console Printer in the event of the Printer not being ready. To accomplish this the operator must press the Inquiry Request key during the Write Phase. The request will be honored at the beginning of the Read phase and at this time modify Location 01007 to a one(1) the program will then type only the graph if the printer is not available.

To put the output on tape 0, set TAD 6 to a 1 and neither the printer nor the typewriter will be used.

A plot of the gap time versus GO-DOWN time is printed along with the summary print-out. This plot is a graphical representation of the gap size according to the GO-DOWN time. This is an additional guide for the C. E. to use in determining the condition of the tape drive.

It will appear vertical instead of horizontal because it must be printed when the gap times are available. A normal plot of this sort would appear with the Minimum GO-DOWN time on the left and the 5 SEC GO-DOWN on the right. Turn the printout 90 degrees clockwise so that the Minimum GO-DOWN line is on the left.

All of the gaps will appear; each (X) will indicate that ten gaps are represented on that line; each asterisk may represent from one to ten gaps. It is possible to have only one asterisk, which means that all ten gaps are super-imposed upon one another or it is also possible to have ten asterisks which would mean that all ten gaps were greatly different from one another. The summary printout refers to the gaps, represented by the asterisks, to the RIGHT of the summary line.

Refer to sample printout.

4. xx. 04. 0

PROGRAM STOPS AND RESTARTS

07055	ERROR STOP	When requested by TAD 2, depress START to continue. Read sequence out of step. Program will delete that drive and continue.
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4. xx. 04. 0 PROGRAM STOPS AND RESTARTS (continued)

- | | |
|-------|---|
| 03471 | No Model and Density designation. Computer Reset and Start to try again. |
| 06883 | Make drive Zero Ready to receive the output requested by TAD6 and continue. |
| 06984 | Tape output complete, return drive selections to normal and continue. |

RESTARTS

During the Write Section it is possible to Computer Reset and Start, which will start the program at the initial point. During the Read Section it is possible to Computer Reset and Start, which will start the Read Section at the initial point.

4. xx. 05. 0 TYPEOUTS AND PRINTOUTS

NORMAL TYPEOUTS

"T022C"
"T022 PASS"

TITLE
END OF PROGRAM

ERROR TYPEOUTS

The instruction or control operation that failed is typed out.

NORMAL PRINTOUTS

For conversion chart see Appendix A.

Line 0: Indicates Chan () Drive number ()
Model () Density () and headings
for the following Low, Range and Averages.

4. xx. 05. 0 TYPEOUTS AND PRINTOUTS (continued)

Line 1: FIXED GO DOWN 5 SEC

A low gap that is lower than the allowable minimum gap, depending on the model, indicates conditions that cause COUNT-FIVE problems.

Line 2: VAR GO DOWN 10-400 MIL

This group reflects variations in forward start time because of binding prolays. A wide variation in range is a fairly accurate indication of a binding prolay condition.

Line 3: VAR GO DOWN 05-10 MIL

The range gives a measure of overshoot through neutral toward the drive capstan. The range of this line should be kept low because the delay times are beyond the critical values of time delay.

Line 4: VAR GO DOWN 01-05 MIL

The range is a result of recovery of the driving circuits and inertia of Start-Stop mechanism for critical values of time delay. This gives a measure of the overshoot through neutral toward the stop capstan.

Line 5: MIN GO DOWN 000 MIL

Since the gaps are written at almost full speed, the gaps tend to be toward the upper limit of the specifications.

When the range is higher than previous runs over a period of time, the drive should receive P. M. with attention to binds, cuts or dirt in or on the drive capstan, bad bushings in the nylon idler, or the full coast pot adjustment.

4. xx. 05. 0 TYPEOUTS AND PRINTOUTS (continued)

Line 6: **FIXED GO DOWN - GO UP 10MIL**

This group checks the prolays for their ability to move from neutral to drive. A large range may indicate a need for START-STOP adjustment or that tape has a speed variation.

Line 7: **VAR GO UP - FIXED GO DOWN**

The prolays and associated circuitry should be stabilized at 10 milliseconds GO DOWN time. The variation in record length checks the prolays for their ability to drop from drive to neutral under variable GO UP time.

Check the right prolay if the range is higher than normal.

Line 8: **WRT-BSP-WTM**

The gaps are formed by a Write, Write, Backspace and Write Tape Mark. The resulting time measurement is compared to MIN GO DOWN to indicate the amount of Creep in the Backspace WTM operation. Subtract the MIN GO DOWN average from the WRT-BSP-WTM average for the value of the average creep.

A Large Range could indicate Backspace problems.

Line 9: **RD-BSP-SPACE**

The value obtained is the amount of time required to space forward to the first character after a backspace operation. The larger the values, the smaller the amount of forward creep. The time is dependent upon the backward stop and the forward start time.

4.xx.05.0 TYPEOUTS AND PRINTOUTS (continued)

An intermittent Backspace problem may show up here very readily.

Line 10: CREEP IS POS

This may be either POS or NEG. If it is NEG, P. M. is needed because Creep must always be positive.

T022

PAGE 012

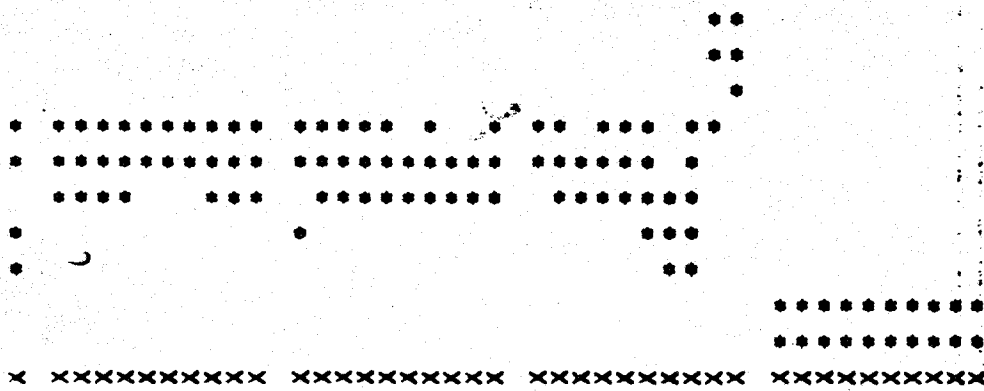
LINE TDU 42 2 OR 5 556 LOW RANGE AVER
 1 FIXED GU DOWN 5 SEC 10.67 .92 11.05

2 VAR GO DOWN 10 - 400 MIL 10.50 .48 10.75

3 VAR GO DOWN 05 - 10 MIL 10.63 .58 10.83

4 VAR GO DOWN 01 - 05 MIL 9.96 1.47 10.78

5 MIN GO DOWN 000 MIL 11.66 .30 11.83
 6 FIXED GO DOWN-GO UP 10 MIL 11.69 .28 11.82
 7 VAR GO UP-FIXED GO DOWN 11.64 .31 11.77
 8 WRT - BSP - HIM 13.21 .45 13.42
 9 RD - BSP - SPACE 9.98 .44 10.21
 CREEP IS POS 1.59

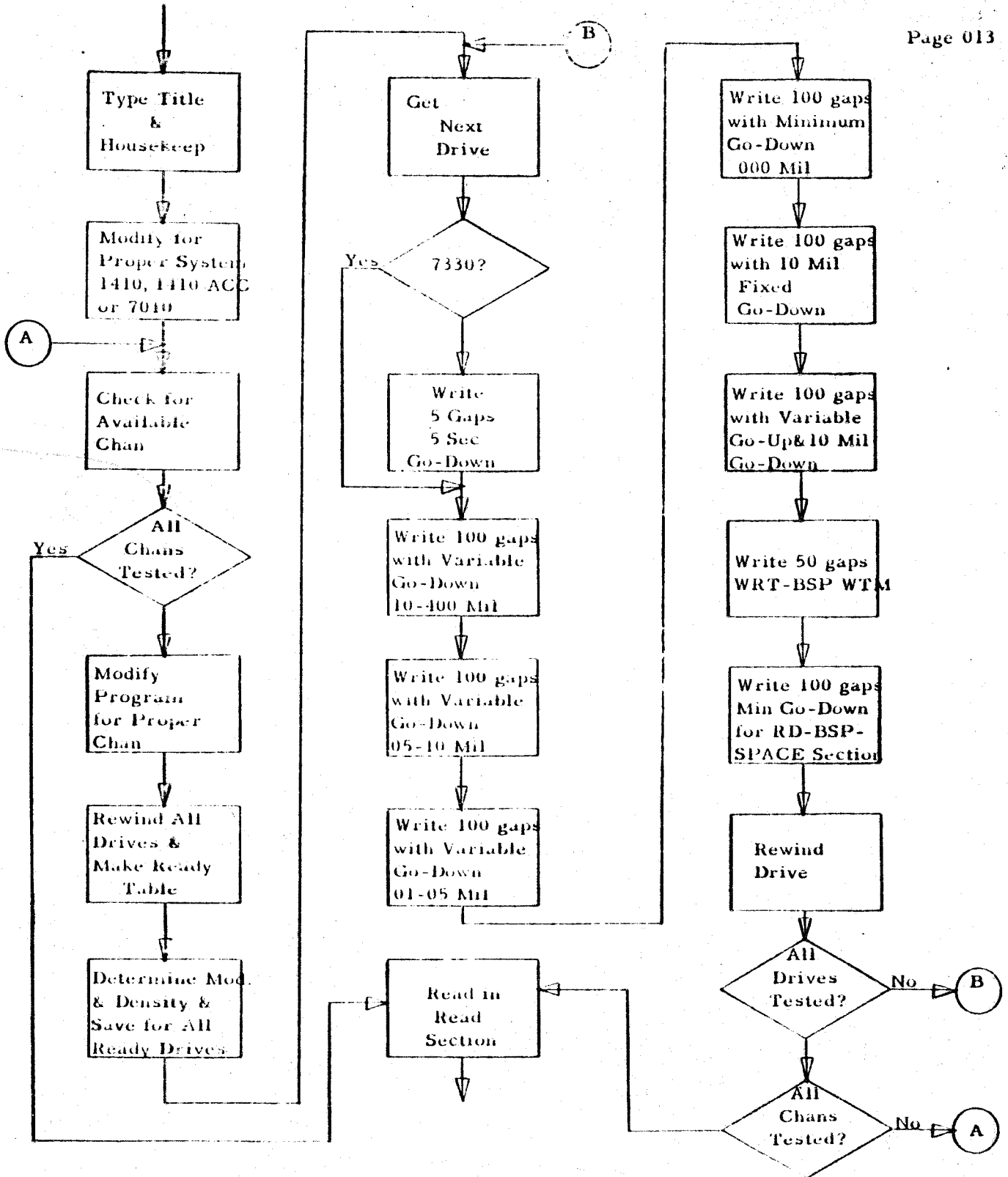


X HIGH X MED X LOW

WRITE SECTION

T022

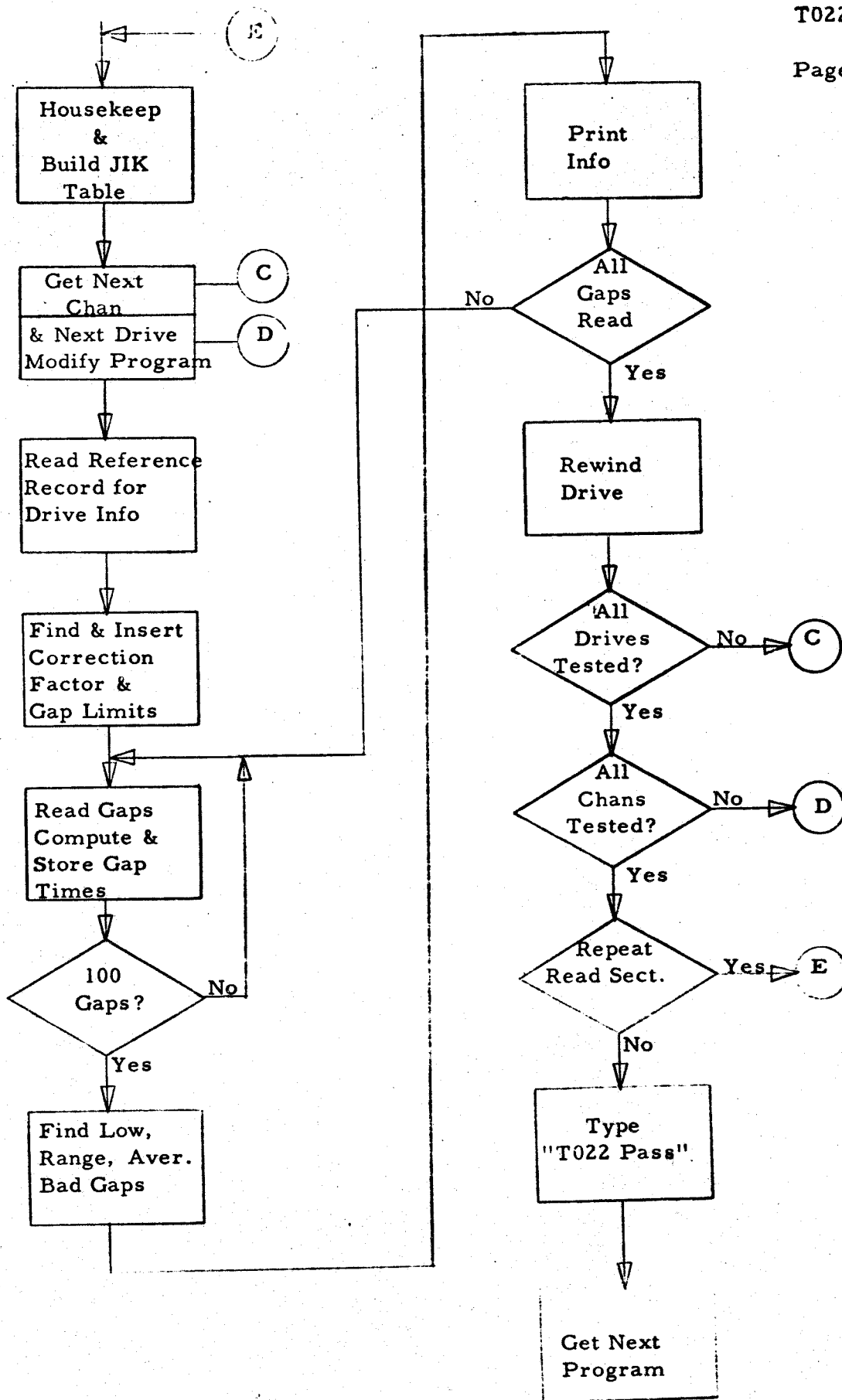
Page 013



READ SECTION

T022.

Page 014



MILLISECOND TO INCH CONVERSION TABLE

MSEC	7330	729-2	729-4	MSEC	7330	729-2	729-4
0.1	.0036	.0075	.01125	4.1	.1476	.3075	.46125
0.2	.0072	.0150	.02250	4.2	.1512	.3150	.47250
0.3	.0108	.0225	.03375	4.3	.1548	.3225	.48375
0.4	.0144	.0300	.04500	4.4	.1584	.3300	.49500
0.5	.0180	.0375	.05625	4.5	.1620	.3375	.50625
0.6	.0216	.0450	.06750	4.6	.1656	.3450	.51750
0.7	.0252	.0525	.07875	4.7	.1692	.3525	.52875
0.8	.0288	.0600	.09000	4.8	.1728	.3600	.54000
0.9	.0324	.0675	.10125	4.9	.1764	.3675	.55125
1.0	.0360	.0750	.11250	5.0	.1800	.3750	.56250
1.1	.0396	.0825	.12375	5.1	.1836	.3825	.57375
1.2	.0432	.0900	.13500	5.2	.1872	.3900	.58500
1.3	.0468	.0975	.14625	5.3	.1908	.3975	.59625
1.4	.0504	.1050	.15750	5.4	.1944	.4050	.60750
1.5	.0540	.1125	.16875	5.5	.1980	.4125	.61875
1.6	.0576	.1200	.18000	5.6	.2016	.4200	.63000
1.7	.0612	.1275	.19125	5.7	.2052	.4275	.64125
1.8	.0648	.1350	.20250	5.8	.2088	.4350	.65250
1.9	.0684	.1425	.21375	5.9	.2124	.4425	.66375
2.0	.0720	.1500	.22500	6.0	.2160	.4500	.67500
2.1	.0756	.1575	.23625	6.1	.2196	.4575	.68625
2.2	.0792	.1650	.24750	6.2	.2232	.4650	.69750
2.3	.0828	.1725	.25875	6.3	.2268	.4725	.70875
2.4	.0864	.1800	.27000	6.4	.2304	.4800	.72000
2.5	.0900	.1875	.28125	6.5	.2340	.4875	.73125
2.6	.0936	.1950	.29250	6.6	.2376	.4950	.74250
2.7	.0972	.2025	.30375	6.7	.2412	.5025	.75375
2.8	.1008	.2100	.31500	6.8	.2448	.5100	.76500
2.9	.1044	.2175	.32625	6.9	.2484	.5175	.77625
3.0	.1080	.2250	.33750	7.0	.2520	.5250	.78750
3.1	.1116	.2325	.34875	7.1	.2556	.5325	.79875
3.2	.1152	.2400	.36000	7.2	.2592	.5400	.81000
3.3	.1188	.2475	.37125	7.3	.2628	.5475	.82125
3.4	.1224	.2550	.38250	7.4	.2664	.5550	.83250
3.5	.1260	.2625	.39375	7.5	.2700	.5625	.84375
3.6	.1296	.2700	.40500	7.6	.2736	.5700	.85500
3.7	.1332	.2775	.41625	7.7	.2772	.5775	.86625
3.8	.1368	.2850	.42750	7.8	.2808	.5850	.87750
3.9	.1404	.2925	.43875	7.9	.2844	.5925	.88875
4.0	.1440	.3000	.45000	8.0	.2880	.6000	.90000

MSEC	7330	729-2	729-4	MSEC	7330	729-2	729-4
8.1	.2916	.6075	.91125	12.3	.4428	.9225	1.38375
8.2	.2952	.6150	.92250	12.4	.4464	.9300	1.39500
8.3	.2988	.6225	.93375	12.5	.4500	.9375	1.40625
8.4	.3024	.6300	.94500	12.6	.4536	.9450	1.41750
8.5	.3060	.6375	.95625	12.7	.4572	.9525	1.42875
8.6	.3096	.6450	.96750	12.8	.4608	.9600	1.44000
8.7	.3132	.6525	.97875	12.9	.4644	.9675	1.45125
8.8	.3168	.6600	.99000	13.0	.4680	.9750	1.46250
8.9	.3204	.6675	1.00125	13.1	.4716	.9825	1.47375
9.0	.3240	.6750	1.01250	13.2	.4752	.9900	1.48500
9.1	.3276	.6825	1.02375	13.3	.4788	.9975	1.49625
9.2	.3312	.6900	1.03500	13.4	.4824	1.0050	1.50750
9.3	.3348	.6975	1.04625	13.5	.4860	1.0125	1.51875
9.4	.3384	.7050	1.05750	13.6	.4896	1.0200	1.53000
9.5	.3420	.7125	1.06875	13.7	.4932	1.0275	1.54125
9.6	.3456	.7200	1.08000	13.8	.4968	1.0350	1.55250
9.7	.3492	.7275	1.09125	13.9	.5004	1.0425	1.56375
9.8	.3528	.7350	1.10250	14.0	.5040	1.0500	1.57500
9.9	.3564	.7425	1.11375	14.1	.5076	1.0575	1.58625
10.0	.3600	.7500	1.12500	14.2	.5112	1.0650	1.59750
10.1	.3636	.7575	1.13625	14.3	.5148	1.0725	1.60875
10.2	.3672	.7650	1.14750	14.4	.5184	1.0800	1.62000
10.3	.3708	.7725	1.15875	14.5	.5220	1.0875	1.63125
10.4	.3744	.7800	1.17000	14.6	.5256	1.0950	1.64250
10.5	.3780	.7875	1.18125	14.7	.5292	1.1025	1.65375
10.6	.3816	.7950	1.19250	14.8	.5328	1.1100	1.66500
10.7	.3852	.8025	1.20375	14.9	.5364	1.1175	1.67625
10.8	.3888	.8100	1.21500	15.0	.5400	1.1250	1.68750
10.9	.3924	.8175	1.22625	15.1	.5436	1.1325	1.69875
11.0	.3960	.8250	1.23750	15.2	.5472	1.1400	1.71000
11.1	.3996	.8325	1.24875	15.3	.5508	1.1475	1.72125
11.2	.4032	.8400	1.26000	15.4	.5544	1.1550	1.73250
11.3	.4068	.8475	1.27125	15.5	.5580	1.1625	1.74375
11.4	.4104	.8550	1.28250	15.6	.5616	1.1700	1.75500
11.5	.4140	.8625	1.29375	15.7	.5652	1.1775	1.76625
11.6	.4176	.8700	1.30500	15.8	.5688	1.1850	1.77750
11.7	.4212	.8775	1.31625	15.9	.5724	1.1925	1.78875
11.8	.4248	.8850	1.32750	16.0	.5760	1.2000	1.80000
11.9	.4284	.8925	1.33875	16.1	.5796	1.2075	1.81125
12.0	.4320	.9000	1.35000	16.2	.5832	1.2150	1.82250
12.1	.4356	.9075	1.36125	16.3	.5868	1.2225	1.83375
12.2	.4392	.9150	1.37250	16.4	.5904	1.2300	1.84500

MSEC	7330	729-2	729-4	MSEC	7330	729-2	729-4
16.5	.5940	1.2375	1.85625	20.7	.7452	1.5525	2.32875
16.6	.5976	1.2450	1.86750	20.8	.7488	1.5600	2.34000
16.7	.6012	1.2525	1.87875	20.9	.7524	1.5675	2.35125
16.8	.6048	1.2600	1.89000	21.0	.7560	1.5750	2.36250
16.9	.6084	1.2675	1.90125	21.1	.7596	1.5825	2.37375
17.0	.6120	1.2750	1.91250	21.2	.7632	1.5900	2.38500
17.1	.6156	1.2825	1.92375	21.3	.7668	1.5975	2.39625
17.2	.6192	1.2900	1.93500	21.4	.7704	1.6050	2.40750
17.3	.6228	1.2975	1.94625	21.5	.7740	1.6125	2.41875
17.4	.6264	1.3050	1.95750	21.6	.7776	1.6200	2.43000
17.5	.6300	1.3125	1.96875	21.7	.7812	1.6275	2.44125
17.6	.6336	1.3200	1.98000	21.8	.7848	1.6350	2.45250
17.7	.6372	1.3275	1.99125	21.9	.7884	1.6425	2.46375
17.8	.6408	1.3350	2.00250	22.0	.7920	1.6500	2.47500
17.9	.6444	1.3425	2.01375	22.1	.7956	1.6575	2.48625
18.0	.6480	1.3500	2.02500	22.2	.7992	1.6650	2.49750
18.1	.6516	1.3575	2.03625	22.3	.8028	1.6725	2.50875
18.2	.6552	1.3650	2.04750	22.4	.8064	1.6800	2.52000
18.3	.6588	1.3725	2.05875	22.5	.8100	1.6875	2.53125
18.4	.6624	1.3800	2.07000	22.6	.8136	1.6950	2.54250
18.5	.6660	1.3875	2.08125	22.7	.8172	1.7025	2.55375
18.6	.6696	1.3950	2.09250	22.8	.8208	1.7100	2.56500
18.7	.6732	1.4025	2.10375	22.9	.8244	1.7175	2.57625
18.8	.6768	1.4100	2.11500	23.0	.8280	1.7250	2.58750
18.9	.6804	1.4175	2.12625	23.1	.8316	1.7325	2.59875
19.0	.6840	1.4250	2.13750	23.2	.8352	1.7400	2.61000
19.1	.6876	1.4325	2.14875	23.3	.8388	1.7475	2.62125
19.2	.6912	1.4400	2.16000	23.4	.8424	1.7550	2.63250
19.3	.6948	1.4475	2.17125	23.5	.8460	1.7625	2.64375
19.4	.6984	1.4550	2.18250	23.6	.8496	1.7700	2.65500
19.5	.7020	1.4625	2.19375	23.7	.8532	1.7775	2.66625
19.6	.7056	1.4700	2.20500	23.8	.8568	1.7850	2.67750
19.7	.7092	1.4775	2.21625	23.9	.8604	1.7925	2.68875
19.8	.7128	1.4850	2.22750	24.0	.8640	1.8000	2.70000
19.9	.7164	1.4925	2.23875	24.1	.8676	1.8075	2.71125
20.0	.7200	1.5000	2.25000	24.2	.8712	1.8150	2.72250
20.1	.7236	1.5075	2.26125	24.3	.8748	1.8225	2.73375
20.2	.7272	1.5150	2.27250	24.4	.8784	1.8300	2.74500
20.3	.7308	1.5225	2.28375	24.5	.8820	1.8375	2.75625
20.4	.7344	1.5300	2.29500	24.6	.8856	1.8450	2.76750
20.5	.7380	1.5375	2.30625	24.7	.8892	1.8525	2.77875
20.6	.7416	1.5450	2.31750	24.8	.8928	1.8600	2.79000

MSEC	7330	729-2	729-4
24.9	.8964	1.8675	2.80125
25.0	.9000	1.8750	2.81250
25.1	.9036	1.8825	2.82375
25.2	.9072	1.8900	2.83500
25.3	.9108	1.8975	2.84625
25.4	.9144	1.9050	2.85750
25.5	.9180	1.9125	2.86875
25.6	.9216	1.9200	2.88000
25.7	.9252	1.9275	2.89125
25.8	.9288	1.9350	2.90250
25.9	.9324	1.9425	2.91375
26.0	.9360	1.9500	2.92500
26.1	.9396	1.9575	2.93625
26.2	.9432	1.9650	2.94750
26.3	.9468	1.9725	2.95875
26.4	.9504	1.9800	2.97000
26.5	.9540	1.9875	2.98125
26.6	.9576	1.9950	2.99250
26.7	.9612	2.0025	3.00375
26.8	.9648	2.0100	3.01500
26.9	.9684	2.0175	3.02625
27.0	.9770	2.0250	3.03750
27.1	.9756	2.0325	3.04875
27.2	.9792	2.0400	3.06000
27.3	.9825	2.0475	3.07125
27.4	.9864	2.0550	3.08250
27.5	.9900	2.0625	3.09375
27.6	.9936	2.0700	3.10500
27.7	.9972	2.0775	3.11625
27.8	1.0008	2.0850	3.12750
27.9	1.0044	2.0925	3.13875
28.0	1.0080	2.1000	3.15000
28.1	1.0116	2.1075	3.16125
28.2	1.0152	2.1150	3.17250
28.3	1.0188	2.1225	3.18375
28.4	1.0224	2.1300	3.19500
28.5	1.0260	2.1375	3.20625
28.6	1.0296	2.1450	3.21750
28.7	1.0332	2.1525	3.22875
28.8	1.0368	2.1600	3.24000

APPENDIX A

Gap Specifications in Milliseconds

<u>Model</u>	<u>Low</u>	<u>High</u>
729 II and V	9.20 MS	12.100 MS
729 IV and VI	6.150 MS	8.200 MS
7330	19.000 MS	24.300 MS

IRG TEST FOR 1410/7010 SYSTEMS

CT ADDR INSTRJCTION

OPCOD OPERAND

PGLIN LABEL

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDR	INSTRJCTION
1002	LINES	36				
1003	ORG	1230			01230	
1004	DC	@	@	15	01244	
1005	ORG	1245			01245	
1006	DC	@208+R@	SEQUENCE NO. AND TOP MEM ADDRESS	5	01249	
1007	ORG	1250			01250	
1008	TITL	DCW	@T022@	4	01250	
1009	SUFFIX D	DC	@@,G	1	01254	
1010	*					
1011	* STANDARD SYSTEM CONTROL CARD					
1012	*					
1013						
1014	SYSL	DC	@ @ 0-1410,1-14101,X-7010	1	01256	
1015		£1 DC	@ @ 0,1,3,5,7,9-10,20,40,60,80,100K	1	01257	
1016		£2 DC	@ @ SPARE	1	01258	
1017		£3 DC	@ @ 1,2-CHNL1 100,132 CHAR PRINTER	1	01259	
1018		£4 DC	@ @ 1,2-CHNL2 100,132 CHAR PRINTER	1	01260	
1019		£6 DC	@ @ SPARES	2	01262	
1020		£7 DC	@ @ 1 - OVERLAP	1	01263	
1021		£8 DC	@ @ 1 - PRIORITY ALERT	1	01264	
1022		£11 DC	@ @ SPARES	3	01267	
1023		£12 DC	@ @ 1 - CHANNEL ONE PRESENT	1	01268	
1024		£13 DC	@ @ 1 - CHANNEL TWO PRESENT	1	01269	
1025		£14 DC	@ @ 1 - CHANNEL THREE PRESENT	1	01270	
1026		£15 DC	@ @ 1 - CHANNEL FOUR PRESENT	1	01271	
1027		£17 DC	@ @ SPARES	2	01273	
1028		£18 DC	@ @ 1 - 1401 COMPATIBILITY	1	01274	
1029		£19 DC	@ @ 1 - TIMER INTERRUPT	1	01275	
1030		£20 DC	@ @ 1 - REAL TIME CLOCK	1	01276	
1031		£21 DC	@ @ 1 - RELOCATE AND PROTECT	1	01277	
1032		£22 DC	@ @ 1 - FLOATING POINT ARITHMETIC	1	01278	
1033		£31 DC	@ @ SPARES	9	01287	
1034		£32 DC	@ @ SPARES	1	01288	
1035		ORG	1000		01000	

COL

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRJCTION
1037	* STANDARD TADS					
1038	*		NOT 1			
1039	TAD0	DC	@ @ TYPE OUTPUT	1	01000	BYPASS ALL TYPE
1040	TAD1	DC	@ @ NO LOOPS	1	01001	LOOP
1041	TAD2	DC	@ @ NO ERROR HALTS	1	01002	HALT ON ERROR
1042	TAD3	DC	@ @ ONE PROGRAM PASS	1	01003	REPEAT PROGRAM
1043	* SPECIAL TADS					
1044	TAD4	DC	@ @	1	01004	
1045	TAD5	DC	@ @ PRINT BAD GAPS	1	01005	BYPASS BAD GAP
1046	TAD6	DC	@ @ NO TAPE OUTPUT	1	01006	OUTPUT ON TAPE
1047	TAD7	DC	@ @ TYPE AVERAGES	1	01007	TYPE GRAPH
1048		DCW	@ @	1	01008	
1049	UNIT	DCW	@ @ CHAR INDICATING MODEL & DENSITY	1	01009	
1050		DCW	@ @ 1 7330 200 BPI	1	01010	
1051		DCW	@ @ 2 7330 556 BPI	1	01011	
1052		DCW	@ @ 3 729 4 OR 6 200 BPI	1	01012	
1053		DCW	@ @ 4 729 4 OR 6 556 BPI	1	01013	
1054		DCW	@ @ 5 729 6 800 BPI	1	01014	
1055		DCW	@ @ 6 729 2 OR 5 200 BPI	1	01015	
1056		DCW	@ @ 7 729 2 OR 5 556 BPI	1	01016	
1057		DCW	@ @ 8 729 5 800 BPI	1	01017	
1058		DCW	@ @	1	01018	
1059	*					
1060	* ALTER ROUTINE					
1061	*					
1062	ITR	SBR	ITREXT&S	7	01019	G 01086 B
1063	ITR1	RCP	ITR2&4	10	01026	M %T0 01061 R
1064		BNT1	ITREXT ^S	7	01036	R 01081 B ^S
1065		BEX1	ITR1,M	7	01043	R 01026 M ^S
1066		BAL	ITR2	7	01050	R 01057 M ^C
1067	ITR2	RCPW	0	10	01057	L %T0 00000 R ^S
1068		BEX1	ITR2,M ^S	7	01067	R 01057 M ^S
1069		BAL	*&1	7	01074	R 01081 M ^C
1070	ITREXT	B	0	7	01081	J 00000

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1072	•					
1073	•	STANDARD	TYPE ROUTINE			
1074	•					
1075	TYP1	SBR	TYP2E5	7	01088	G 01107 B
1076		SBR	TYP3E8	7	01095	G 01141 B
1077	TYP2	SCNRG	0,C	12	01102	D 00000 00000 Q
1078		SAR	TYP4E5	7	01114	G 01162 A
1079		BCE	TYP4,TAD0,1	12	01121	B 01157 01000 I
1080	TYP3	WCP	0	10	01133	M 310 00000 M
1081		BCBI	TYP3	7	01143	R 01133 Z
1082		BA1	*E1	7	01150	R 01157 M
1083	TYP4	B	0	7	01157	J 00000
1084	IIP	DCW	21454H2	5	01168	
1085		DCW	21292H2	5	01173	
1086		DCW	20484F2	5	01178	
1087	ICT	DCW	20CC002	5	01183	
1088		DCW	20C0002	5	01188	
1089		DCW	2000002	5	01193	
1090		DCW	20C0002	5	01198	
1091		DCW	2000002	5	01203	
1092		DCW	2000002	5	01208	
1093		DCW	2000002	5	01213	
1094		DCW	20CC002	5	01218	
1095		DCW	20C0002	5	01223	
1096		DCW	2000002	5	01228	
1097	NEG	DCW	2NEGA2	3	01231	
1098		ORG	1290		01290	
1099	•					
1100	•		CHANNEL ALTER ROUTINE			
1101	•					
1102	C+STT	SBR	CHSTR2E5	7	01290	G 01683 B
1103		MLNA	STARAD,SCAN210	12	01297	D 06531 01342 /
1104		SW	25	6	01309	• 00025
1105		S	X1	6	01315	S 00029
1106		A	ONES,X1	11	01321	A 06502 00029

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1107	SCAN	SCNLB	09999,0	12	01332	D 09999 00000 -
1108		SBR	ADDHLD	7	01344	G 06541 B
1109		A	ONES,ADDHLD	11	01351	A 06502 06541
1110		C	ADCHLD,STOPAD	11	01362	C 06541 06536
1111		BE	CHSTR	7	01373	J 01678 S
1112		MLNA	ADCHLD,MLC&S	12	01380	D 06541 01397 /
1113	PLC	MLCS	0,BC&I1	12	01392	D 00000 01415 3
1114	BCH	BCE	CHINS,K1,7	12	01404	B 01463 06553 7
1115		BCE		1	01416	B
1116		BCE		1	01417	B
1117		BCE	STINS	6	01418	B 01548
1118		BCE		1	01424	B
1119		BCE		1	01425	B
1120		BCE		1	01426	B
1121		BCE	OLINS	6	01427	B 01579
1122	UPDATE	S	GNES,ADDHLD	11	01433	S 06502 06541
1123		MLNA	ADCHLD,SCAN&I0	12	01444	D 06541 01342 /
1124		B	SCAN	7	01456	J 01332
1125	CHINS	MLNA	ADCHLD,MLCX&I0	12	01463	D 06541 01485 /
1126	PLCX	MLCS	CHCODE,0&X1	12	01475	D 06542 000+0 3
1127		NOP		1	01487	N
1128	TDUSM	B	UPDATE	7	01488	J 01433
1129		A	THREES,ADDHLD	11	01495	A 06503 06541
1130		MLNA	ADCHLD,CTD&I0	12	01506	D 06541 01528 /
1131	CTD	MLNS	TD,0	12	01518	D 06808 00000 1
1132		S	THREES,ADDHLD	11	01530	S 06503 06541
1133		B	UPDATE	7	01541	J 01433
1134	STINS	MLNA	ADCHLD,MLCF&I0	12	01548	D 06541 01570 /
1135	PLCH	MLCS	CHSTAT,0	12	01560	D 06543 00000 3
1136		B	UPDATE	7	01572	J 01433
1137	CLINS	A	SIX,ADDHLD	11	01579	A 06545 06541
1138		MLNA	ADCHLD,MLCC&S	12	01590	D 06541 01607 /
1139	MLCO	MLCS	0,BCS&I1	12	01602	D 00000 01625 3
1140	BGS	BCE	SEIOL,K2,1	12	01614	B 01636 06557 1
1141		BCE		1	01626	B

PGLIN	LABEL	OPCODE	OPERAND	CHARACTER & PURPOSE	COL	CT	ADDRS	INSTRUCTION
1142		BCE			13	1	01627	B
1143		BCE			14	1	01628	B
1144		B	REDUCE		15	7	01629	J 01660
1145	SETOL	MLNA	ADCHLD,MLCL&10		16-24	12	01636	D 06541 01658 /
1146	MLCL	MLCS	BOLM,0		25	12	01648	D 06544 00000 3
1147	REDUCE	S	SIX,ADCHLD		26	11	01660	S 06545 06541
1148		B	UPDATE		27	7	01671	J 01433
1149	CHSTTR	B	0		28	7	01678	J 00000
1150		DCW	GM		29	1	01685	
1151		ORG	1289		30		01289	
1152								
1153								
1154		ORG	1289	CHARACTER & PURPOSE	COL			
1155	CHN1	DC	2 2 1 - PAPER TAPE READER		13	1	01289	
1156		DC	2 2 1 - CCNSOLE PRINTER		14	1	01290	
1157		DC	2 2 1 - TAPES 729/7330		15	1	01291	
1158		DC	2 2 SPARES		16-24	9	01300	
1159		DC	2 2 R,S,C - 1402,1442,7223 READER		25	1	01301	
1160		DC	2 2 B - READER COLUMN BINARY FEAT.		26	1	01302	
1161		DC	2 2 P - 1402 PUNCH		27	1	01303	
1162		DC	2 2 B - PUNCH COLUMN BINARY FEAT.		28	1	01304	
1163		DC	2 2 P - 1403 PRINTER		29	1	01305	
1164		DC	2 2 A,N - ALPHA,NUMERIC PRINT CHAIN		30	1	01306	
1165		DC	2 2 1,2 - 100,132 CHAR PRINT BUFFER		31	1	01307	
1166		DC	2 2 F - 1301 FILE		32	1	01308	
1167		DC	2 2 1 THRU 0 - 1 THRU 10 FILE MODULE33		33	1	01309	
1168		DC	2 2 1 THRU 0 - 1 THRU 10 ACCESSES		34	1	01310	
1169		DC	2 2 R - 1311 IMPAC		35	1	01311	
1170		DC	2 2 1 THRU 5 - 1 THRU 5 IMPAC MODULE36		36	1	01312	
1171		DC	2 2 1 - SEEK OVERLAP FEATURE		37	1	01313	
1172		DC	2 2 1 - SCAN FEATURE		38	1	01314	
1173		DC	2 2 1 - TRACK RECORD FEATURE		39	1	01315	
1174		DC	2 2 F - 1405 FILE		40	1	01316	
1175		DC	2 2 1,2,3 - 1,2,3 ARMS IN MODULE 0		41	1	01317	
1176		DC	2 2 1,2,3 - 1,2,3 ARMS IN MODULE 1		42	1	01318	

CT ADDR INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDR	INSTRUCTION
1177		030 DC	0 0 1,2,3 - 1,2,3 ARMS IN MCDULE 2	1	01319	
1178		031 DC	0 0 1,2,3 - 1,2,3 ARMS IN MCDULE 3	1	01320	
1179		032 DC	0 0 1,2,3 - 1,2,3 ARMS IN MCDULE 4	1	01321	
1180		033 DC	0 0 1 - 775C ON THIS CHANNEL	1	01322	
1181		034 DC	0 0 1 - 774C ON THIS CHANNEL	1	01323	
1182		035 DC	0 0 1 - 144C/1460 ON THIS CHANNEL	1	01324	
1183		036 DC	0 0 1 - CFAN HAS CHANNEL EXTENDER	1	01325	
1184		037 DC	0 0 1 - LCM SPEED HYPER TAPE	1	01326	
1185		038 DC	0 0 1,2,3-1C5C-1,2,OR BOTH ADAPTERS	1	01327	
1186		055 DC	0 0 SPARES	17	01344	
1187		056 DC	0 0 SPARES	1	01345	
1188		*****				
1189		*STANDARD CHANNEL 2 CONTROL CARD.				
1190		ORG	1346 CHARACTER & PURPOSE		01346	
1191	CF-N2	DC	0 0 1 - PAPER TAPE READER	1	01346	
1192		01 DC	0 0 1 - CONSOLE PRINTER	1	01347	
1193		02 DC	0 0 1 - TAPES 729/7330	1	01348	
1194		011 DC	0 0 SPARES	9	01357	
1195		012 DC	0 0 R,S,C - 1402,1442,7223 READER	1	01358	
1196		013 DC	0 0 B - READER COLUMN BINARY FEAT.	1	01359	
1197		014 DC	0 0 P - 14C2 PUNCH	1	01360	
1198		015 DC	0 0 B - PUNCH COLUMN BINARY FEAT.	1	01361	
1199		016 DC	0 0 P - 1403 PRINTER	1	01362	
1200		017 DC	0 0 A,N - ALPHA,NUMERIC PRINT CHAIN	1	01363	
1201		018 DC	0 0 1,2 - 1C0,132 CHAR PRINT BUFFER	1	01364	
1202		019 DC	0 0 F - 1301 FILE	1	01365	
1203		020 DC	0 0 1 THRU C - 1 THRU 10 FILE MODULE33	1	01366	
1204		021 DC	0 0 1 THRU C - 1 THRU 10 ACCESSES	1	01367	
1205		022 DC	0 0 R - 1311 IMPAC	1	01368	
1206		023 DC	0 0 1 THRU 5 - 1 THRU 5 IMPAC MODULE36	1	01369	
1207		024 DC	0 0 1 - SEEK OVERLAP FEATURE	1	01370	
1208		025 DC	0 0 1 - SCAN FEATURE	1	01371	
1209		026 DC	0 0 1 - TRACK RECORD FEATURE	1	01372	
1210		027 DC	0 0 F - 1405 FILE	1	01373	
1211		028 DC	0 0 1,2,3 - 1,2,3 ARMS IN MCDULE 0	1	01374	

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1212		£29 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 1	1	01375	
1213		£30 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 2	1	01376	
1214		£31 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 3	1	01377	
1215		£32 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01378	
1216		£33 DC	£ £ 1 - 775C ON THIS CHANNEL	1	01379	
1217		£34 DC	£ £ 1 - 774C ON THIS CHANNEL	1	01380	
1218		£35 DC	£ £ 1 - 144C/1460 ON THIS CHANNEL	1	01381	
1219		£36 DC	£ £ 1 - CHAN HAS CHANNEL EXTENDER	1	01382	
1220		£37 DC	£ £ L - LCM SPEED HYPER TAPE	1	01383	
1221		£38 DC	£ £ 1,2,3-1050-1,2,GR BOTH ADAPTERS	1	01384	
1222		£55 DC	£ £ SPARES	17	01401	
1223		£56 DC	£ £ SPARES	1	01402	
1224		*****				
1225		*\$STANDARD CHANNEL 3 CONTROL CARD.				
1226		ORG	1403 CHARACTER & PURPOSE			COL
1227	CHN3	DC	£ £ 1 - PAPER TAPE READER	1	01403	13
1228		£1 DC	£ £ 1 - CONSOLE PRINTER	1	01404	14
1229		£2 DC	£ £ 1 - TAPES 729/7330	1	01405	15
1230		£11 DC	£ £ SPARES	9	01414	16-24
1231		£12 DC	£ £ R,S,C - 1402,1442,7223 READER	1	01415	25
1232		£13 DC	£ £ B - READER COLUMN BINARY FEAT.	1	01416	26
1233		£14 DC	£ £ P - 1402 PUNCH	1	01417	27
1234		£15 DC	£ £ B - PUNCH COLUMN BINARY FEAT.	1	01418	28
1235		£16 DC	£ £ P - 1403 PRINTER	1	01419	29
1236		£17 DC	£ £ A,N - ALPHA,NUMERIC PRINT CHAIN	1	01420	30
1237		£18 DC	£ £ 1,2 - 1C0,132 CHAR PRINT BUFFER	1	01421	31
1238		£19 DC	£ £ F - 1301 FILE	1	01422	32
1239		£20 DC	£ £ 1 THRU 0 - 1 THRU 10 FILE MODULE	1	01423	33
1240		£21 DC	£ £ 1 THRU 0 - 1 THRU 10 ACCESSES	1	01424	34
1241		£22 DC	£ £ R - 1311 IMPAC	1	01425	35
1242		£23 DC	£ £ 1 THRU 5 - 1 THRU 5 IMPAC MODULE	1	01426	36
1243		£24 DC	£ £ 1 - SEEK OVERLAP FEATURE	1	01427	37
1244		£25 DC	£ £ 1 - SCAN FEATURE	1	01428	38
1245		£26 DC	£ £ 1 - TRACK RECORD FEATURE	1	01429	39
1246		£27 DC	£ £ F - 1405 FILE	1	01430	40
1247		£28 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE	1	01431	41

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1248		£29 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 1	1	01432	
1249		£30 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 2	1	01433	
1250		£31 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 3	1	01434	
1251		£32 DC	£ £ 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01435	
1252		£33 DC	£ £ 1 - 775C ON THIS CHANNEL	1	01436	
1253		£34 DC	£ £ 1 - 774C ON THIS CHANNEL	1	01437	
1254		£35 DC	£ £ 1 - 144C/1460 ON THIS CHANNEL	1	01438	
1255		£36 DC	£ £ 1 - CHAN HAS CHANNEL EXTENDER	1	01439	
1256		£37 DC	£ £ L - LCW SPEED HYPER TAPE	1	01440	
1257		£38 DC	£ £ 1,2,3-1C50-1,2,OR BOTH ADAPTERS	1	01441	
1258		£55 DC	£ £ SPARES 52-68	17	01458	
1259		£56 DC	£ £	1	01459	
1260		*****				
1261		•STANDARD CHANNEL 4 CONTROL CARD.				
1262		ORG 1460	CHARACTER & PURPOSE COL		01460	
1263	CHN4	DC £ £	1 - PAPER TAPE READER 13	1	01460	
1264		£1 DC	£ £ 1 - CONSOLE PRINTER 14	1	01461	
1265		£2 DC	£ £ 1 - TAPES 729/7330 15	1	01462	
1266		£11 DC	£ £ SPARES 16-24	9	01471	
1267		£12 DC	£ £ R,S,C - 1402,1442,7223 READER 25	1	01472	
1268		£13 DC	£ £ B - READER COLUMN BINARY FEAT. 26	1	01473	
1269		£14 DC	£ £ P - 14C2 PUNCH 27	1	01474	
1270		£15 DC	£ £ B - PUNCH COLUMN BINARY FEAT. 28	1	01475	
1271		£16 DC	£ £ P - 1403 PRINTER 29	1	01476	
1272		£17 DC	£ £ A,N - ALPHA,NUMERIC PRINT CHAIN 30	1	01477	
1273		£18 DC	£ £ 1,2 - 1C0,132 CHAR PRINT BUFFER 31	1	01478	
1274		£19 DC	£ £ F - 1301 FILE 32	1	01479	
1275		£20 DC	£ £ 1 THRU 0 - 1 THRU 10 FILE MODULE33	1	01480	
1276		£21 DC	£ £ 1 THRU 0 - 1 THRU 10 ACCESSES 34	1	01481	
1277		£22 DC	£ £ R - 1311 IMPAC 35	1	01482	
1278		£23 DC	£ £ 1 THRU 5 - 1 THRU 5 IMPAC MODULE36	1	01483	
1279		£24 DC	£ £ 1 - SEEK OVERLAP FEATURE 37	1	01484	
1280		£25 DC	£ £ 1 - SCAN FEATURE 38	1	01485	
1281		£26 DC	£ £ 1 - TRACK RECORD FEATURE 39	1	01486	
1282		£27 DC	£ £ F - 1405 FILE 40	1	01487	

PGLIN LABEL OPCOD OPERANC CT ADDR INSTRUCTION

PGLIN	LABEL	OPCOD	OPERANC	CT	ADDR	INSTRUCTION
1283		628 DC	6 1,2,3 - 1,2,3 ARMS IN MODULE 0	1	01488	
1284		629 DC	6 1,2,3 - 1,2,3 ARMS IN MODULE 1	1	01489	
1285		630 DC	6 1,2,3 - 1,2,3 ARMS IN MODULE 2	1	01490	
1286		631 DC	6 1,2,3 - 1,2,3 ARMS IN MODULE 3	1	01491	
1287		632 DC	6 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01492	
1288		633 DC	6 1 - 775C ON THIS CHANNEL	1	01493	
1289		634 DC	6 1 - 774C ON THIS CHANNEL	1	01494	
1290		635 DC	6 1 - 144C/1460 ON THIS CHANNEL	1	01495	
1291		636 DC	6 1 - CFAN HAS CHANNEL EXTENDER	1	01496	
1292		637 DC	6 L - LCH SPEED HYPER TAPE	1	01497	
1293		638 DC	6 1,2,3-1050-1,2,CR BOTH ADAPTERS	1	01498	
1294		655 DC	6 SPARES 52-68	17	01515	
1295		656 DC	6	1	01516	
1296		ORG	1686		01686	

PRINT ROUTINE

PGLIN	LABEL	OPCOD	OPERANC	CT	ADDR	INSTRUCTION
1297						
1298						
1299						
1300	PRINT	SBR	PREXTCS	7	01686	G 01776 B
1301	BCHA1	BAL	*61	7	01693	R 01700 M
1302		BCV	OVFLO	7	01700	J 01778 0
1303	WATE	BPC8	*-13	7	01707	J 01700 R
1304		MLCWS	WMGM,333	12	01714	D 06518 00333 7
1305	WRITE	W	201	10	01726	M 320 00201 M
1306	BCHA2	BCB1	*-16	7	01736	R 01726 2
1307	BCHA4	BNR1	TRY2	7	01743	R 01833 1
1308	BCHA5	BHL1	BR100	7	01750	R 01808 -
1309	BCHA6	BAL	PRRR	7	01757	R 01827 M
1310		CS	332	6	01764	/ 00332
1311		CS		1	01770	/
1312	PREXT	B	0	7	01771	J 00000 G
1313	CVFLC	BAL	*61	7	01778	R 01785 M
1314		CC	1	2	01785	F 1
1315	BCHA8	BCB1	BCHA1	7	01787	R 01693 2
1316	BCHA9	BAL	PRRR	7	01794	R 01827 M
1317		B	WATE	7	01801	J 01707

GC TO PRINT

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1318	BR100	MLCWS	WMGM,301	12	01808	D 06518 00301 7
1319		B	WRITE	7	01820	J 01726
1320	PRERR	H	WRITE	6	01827	. 01726
1321	TRY2	NCPWM		1	01833	N
1322		B	MOVZ	7	01834	J 01848
1323		B	TYPIT	7	01841	J 01934
1324	POV2	MLNA	EPREPR,STARAC	12	01848	D 07104 06531 /
1325		CW	TRY2&1	6	01860	□ 01834
1326		MLNA	EPRI,STOPAD	12	01866	D 07109 06536 /
1327		MLCS	LOZEN,CHCODE	12	01878	D 06494 06542 3
1328		MLCS	XCFAN,CHSTAT	12	01890	D 06495 06543 3
1329		B	CHSTT	7	01902	J 01290
1330		MLNA	CHK1,STOPAD	12	01909	D 07114 06536 /
1331		MLNA	WRTEX	6	01921	D 07119
1332		B	BCPA1	7	01927	J 01693
1333	TYPIT	MLCWS	WMGM,251	12	01934	D 06518 00251 7
1334	TYPITA	WCP	201	10	01946	M XT0 00201 W
1335		BA1	*-16	7	01956	R 01946 M
1336		CS	299	6	01963	/ 00299
1337	TYPITB	SW	201,GRPT&1	11	01969	. 00201 05891
1338	TYPITC	CW	GRA&1	6	01980	□ 04170
1339		B	PREXT	7	01986	J 01771
1340	POS	DCW	AP0S0	3	01995	
1341	JUNK	DCW	2 2.G	1	01996	
1342		ORG	2000		02000	
1343	START	NCPWM		1	02000	N
1344		B	CS9	7	02001	J 02025
1345	TILNC	WCP	TITL	10	02008	M XT0 01250 W
1346		BA1	TILNO	7	02018	R 02008 M
1347	CS9	SW	START&1	6	02025	. 02001
1348		CS	99	6	02031	/ 00099
1349		SW	34,44	11	02037	. 00034 00044
1350		SW	68,73	11	02048	. 00068 00073
1351		SW	90,95	11	02059	. 00090 00095
1352		SW	80,85	11	02070	. 00080 00085

PRINT TITLE

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1358		SW	35,25	11	02081	00035 00025
1359		CW	BFI	6	02092	02196
1360		SW	BRE	6	02098	02218
1361		DCW	0NNNN0	4	02107	
1362		NOP		1	02108	N
1363	MRSW	B	MRCW	7	02109	J 07174
1364		BCE	OMAC,SY1,0	12	02116	B 02232 01256 0
1365		BCE	IMAC,SY1,I	12	02128	B 02246 01256 I
1366		B	XMAC	7	02140	J 02290
1367	CHK1	BCE	CH1,SY1&12,1	12	02147	B 02334 01268 I
1368	CHK2	BCE	CH2,SY1&13,1	12	02159	B 02385 01269 I
1369	CHK3	BCE	CH3,SY1&14,1	12	02171	B 02436 01270 I
1370	CHK4	BCE	CH4,SY1&15,1	12	02183	B 02487 01271 I
1371		NOPWM		1	02195	N
1372	BFI	B	FINIS	7	02196	J 05165
1373		B	NEX1	7	02203	J 00400
1374	88	B	CHSTT	7	02210	J 01290
1375		NOP		1	02217	N
1376	BRE	B	REWA	7	02218	J 02614
1377		B	RRA	7	02225	J 02786
1378	OMAC	NOP		1	02232	N
1379		S	X14	6	02233	S 00094
1380		B	CHK1	7	02239	J 02147
1381	IMAC	NOP		1	02246	N
1382		MLNA	HUN1,X14	12	02247	D 05345 00094 /
1383		MLNS	FIVE,X9	12	02259	D 06491 00069 I
1384		MLNS	FIVE,X10	12	02271	D 06491 00074 I
1385		B	CHK1	7	02283	J 02147
1386	XMAC	NOP		1	02290	N
1387		MLNA	HUN2,X14	12	02291	D 06233 00094 /
1388		MLNA	TEN,X9	12	02303	D 06477 00069 /
1389		MLNA	TEN,X10	12	02315	D 06477 00074 /
1390		B	CHK1	7	02327	J 02147
1391	CHI	MLNS	ONE,CHAN	12	02334	D 06498 06807 I
1392		MLCS	PERCT,CHCODE	12	02346	D 06492 06542 3

INTEROGATE FOR MACHINE TYPE INTEROGATE FOR AVAILABLE CHANNEL

READ IN READ SECTION CHANNEL ALTER

TO REWIND ALL DRIVES TO UPDATE READ SECTION

SET UP FOR 1410

SET UP FOR 1410I

SET UP FOR 7010

MODIFY FOR

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1394		MLCS	RCHAN,CHSTAT	12	02358	D 06493 06543 3
1395	IB1	D	ON	8	02377	
1396		B	BB	7	02378	J 02210
1397						
1398	CH2	MLNS	TWO,CHAN	12	02385	D 05346 06807 1
1399		MLCS	LOZEN,CHCODE	12	02397	D 06494 06542 3
1400		MLCS	XCHAN,CHSTAT	12	02409	D 06495 06543 3
1401	IB2	D	ON	8	02428	
1402		B	BB	7	02429	J 02210
1403						
1404	CH3	MLNS	THRE,CHAN	12	02436	D 06499 06807 1
1405		MLCS	DOLAR,CHCODE	12	02448	D 06496 06542 3
1406		MLCS	THRE,CHSTAT	12	02460	D 06499 06543 3
1407	IB3	D	ON	8	02479	
1408		B	BB	7	02480	J 02210
1409						
1410	CH4	MLNS	FOUR,CHAN	12	02487	D 06500 06807 1
1411		MLCS	EXCLA,CHCODE	12	02499	D 06497 06542 3
1412		MLCS	ONE,CHSTAT	12	02511	D 06498 06543 3
1413	IB4	D	ON	8	02530	
1414		B	BB	7	02531	J 02210
1415						
1416	CHT	MLCS	CHAN,*G12	12	02538	D 06807 02561 3
1417		BCE	CHK2,G5.1	12	02550	B 02159 06350 1
1418		BCE	CHK3	6	02562	B 02171
1419		BCE	CHK4	6	02568	B 02183
1420	L0D	B	BFI-1	7	02574	J 02195
1421						
1422	BSP	SBR	BSEX&5	7	02581	G 02612 8
1423		BSP	11	5	02588	U XUI B
1424		BCB1	*-11	7	02593	R 02588 2
1425		BAL	BSPER	7	02600	R 06652 M
1426	BSEX	B	0	7	02607	J 00000
1427	*					
1428						

* REWIND ALL DRIVES TO LOAD POINT

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1430	REWA	MLNS	ONE,REWING3	12	02614	D 06498 02680 I
1431		MLNS	ONE,X4	12	02626	D 06498 00044 I
1432		NOPWM		1	02638	N
1433	IBA	B	REDON	7	02639	J 02764
1434		MLNA	ZEROS,UNIT&9	12	02646	D 06508 01018 /
1435		MLNA	ZEROS,UNIT&4	12	02658	D 06508 01013 /
1436		BAV	*&1	7	02670	J 02677 Z
1437	REWIND	RWD	11	5	02677	U &U1 R
1438		BNRI	REWAD	7	02682	R 02727 I
1439		BCB1	REWIND	7	02689	R 02677 Z
1440		BAL	*&1	7	02696	R 02703 M
1441		MLNS	ZERO,UNIT&X4	12	02703	D 05347 01409 I
1442	IBUP	MLNS	X4,LD&11	12	02715	D 00044 03945 I
1443	REWAD	A	ONE,X4	11	02727	A 06498 00044
1444		MLNS	X4,REWING3	12	02738	D 00044 02680 I
1445		BAV	REDON	7	02750	J 02764 Z
1446		B	REWIND	7	02757	J 02677
1447	REDON	S	X4	6	02764	S 00044
1448	NEXTD	A	ONE,X4	11	02770	A 06498 00044
1449		B&E	RDY,UNIT&X4,M	12	02781	W 02807 01409 M
1450		BAV	NEW	7	02793	J 03288 Z
1451		B	NEXTD	7	02800	J 02770
1452	RDY	MLNS	X4,TD	12	02807	D 00044 06808 I
1453		CH	TDUSH	6	02819	D 01488
1454	CC	B	CHSTT	7	02825	J 01290
1455		SW	TDUSH,GMO	11	02832	R 01488 05820
1456	WTARR	WT	11,TMAR	10	02843	M &J1 05720 W
1457		BCB1	*-16	7	02853	R 02843 Z
1458		BAL	WTARR	7	02860	R 02843 M
1459		WT	11,TMAR	10	02867	M &J1 05720 W
1460		BCB1	*-16	7	02877	R 02867 Z
1461		BAL	WTARR	7	02884	R 02843 M
1462		B	BSP	7	02891	J 02581
1463		B	BSP	7	02898	J 02581
1464		S	DENCT	6	02905	S 05718

INITIALIZE INST.
 BYPASS MAKING READY TABLE
 ZERO UNIT
 INDICATORS
 REWIND
 RESET INTERLOCK
 INDICATE DRIVE READY
 INDICATE LAST DRIVE
 TRY NEXT
 DRIVE
 BRANCH IF COMPLETE
 ZERO IX 4
 UPDATE UNIT NO.
 BRANCH IF RDY
 TO WRITE SECTION
 NEXT DRIVE
 SAVE DRIVE NO.
 WRITE 100 CHAR RECORD
 CHECK FOR BUSY
 CHECK FOR ERRORS
 WRITE 100 CHAR RECORD
 CHECK FOR BUSY
 CHECK FOR ERRORS
 TO BACKSPACE ROUTINE
 TO BACKSPACE ROUTINE
 ZERO DENSITY COUNT

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRJCTION
1466		S		1	02911	S
1467	SPAC	CU	ZU1,A	5	02912	U ZU1 A
1468	JIK	D	ADE	7	02917	J 02938 K
1469		BCB1	SPAC	7	02924	R 02912 2
1470		B	JIK	7	02931	J 02917
1471						
1472	ADE	A	DENTM&X10,DENCT	11	02938	A 05PP9 05718
1473		BA1	*E1	7	02949	R 02956 M
1474		CU	ZU1,A	5	02956	U ZU1 A
1475		BCB1	ADE	7	02961	R 02938 2
1476		BA1	*E1	7	02968	R 02975 M
1477	AMO	A	MODTM&X9,MODCT	11	02975	A 05PM4 05713
1478		D	REW	7	02986	J 03000 K
1479		B	AMO	7	02993	J 02975
1480						
1481	REW	RWD	11	5	03000	U ZU1 R
1482		BCB1	REW	7	03005	R 03000 2
1483		BA1	*E1	7	03012	R 03019 M
1484		CW	GMO	6	03019	R 05820
1485		C	MODCT,MSEC1	11	03025	C 05713 05794
1486		BH	MO29S	7	03036	J 03198 U
1487		C	DENCT,MSEC2	11	03043	C 05718 05799
1488		BH	MO29F	7	03054	J 03108 U
1489		A	ONE,UNIT&X4	11	03061	A 06498 01#09
1490		C	DENCT,MSEC3	11	03072	C 05718 05804
1491		BL	NEXTD	7	03083	J 02770 T
1492		A	ONE,UNIT&X4	11	03090	A 06498 01#09
1493		B	NEXTD	7	03101	J 02770
1494						
1495	MO29F	C	DENCT,MSEC4	11	03108	C 05718 05809
1496		A	SIX,UNIT&X4	11	03119	A 06545 01#09
1497		BH	COM	7	03130	J 03144 U
1498	MV	B	NEXTD	7	03137	J 02770
1499	COM	C	DENCT,MSEC6	11	03144	C 05718 05819

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1493		BF	M8	7	03155	J 03180 U
1494		A	ONE,UNITEX4	11	03162	A 06498 01#09
1495		B	MV	7	03173	J 03137
1496	M8	A	TWC,UNITEX4	11	03180	A 06346 01#09
1497		B	NEXTD	7	03191	J 02770
1498	M029S	C	DEACT,MSEC4	11	03198	C 05718 05809
1499		A	THRE,UNITEX4	11	03209	A 06499 01#09
1500		BF	COMI	7	03220	J 03234 U
1501	M4	B	NEXTD	7	03227	J 02770
1502	COMI	C	DENCT,MSEC5	11	03234	C 05718 05814
1503		BF	MVI	7	03245	J 03270 U
1504		A	ONE,UNITEX4	11	03252	A 06498 01#09
1505		B	M4	7	03263	J 03227
1506	MVI	A	TWC,UNITEX4	11	03270	A 06346 01#09
1507		B	NEXTD	7	03281	J 02770
1508	*					
1509	* WRITE SECTION					
1510	*					
1511	NEW	MLNS	ZERO,X4	12	03288	D 06347 00044 1
1512	NEWTC	BAL	*E1	7	03300	R 03307 M
1513		A	ONE,X4	11	03307	A 06498 00044
1514		BAV	CWT	7	03318	J 02538 Z
1515		BCE	NEH TD,UNITEX4,	12	03325	B 03300 01#09
1516		MLNS	X4,TD	12	03337	D 00044 06808 1
1517		BCE	M3C,UNITEX4,1	12	03349	B 05893 01#09 1
1518		BCE	M30,UNITEX4,2	12	03361	B 05893 01#09 2
1519	CD	CW	TDLSH	6	03373	D 01488
1520		B	CHSTT	7	03379	J 01290
1521		SW	TDUSH	6	03386	, 01488
1522		MLNS	UNITEX4,REFER63	12	03392	D 01#09 06803 1
1523		MLCS	UNITEX4,*E12	12	03404	D 01#09 03427 3
1524		BCE	MD1,G3,1	12	03416	B 03471 06320 1
1525		BCE	MD2	6	03428	B 03508
1526		BCE	MD3	6	03434	B 03539
1527		BCE	MD4	6	03440	B 03576

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1528		BCE	MDS	6	03446	B 03607
1529		BCE	MD6	6	03452	B 03649
1530		BCE	MD7	6	03458	B 03686
1531		BCE	MDE	6	03464	B 03717
1532		H		1	03470	.
1533	PD1	MLCA	D2,DENSI 200 BPI	12	03471	D 05823 06820 T
1534		SM	GMI	6	03483	, 05927
1535	MA	MLCA	M73,MODEL INDICATE 7330	12	03489	D 05738 06816 T
1536		B	A	7	03501	J 03759
1537	PD2	PLCA	D5,DENSI 556 BPI	12	03508	D 05826 06820 T
1538		CW	GMI	6	03520	□ 05927
1539		SM	GMZ	6	03526	, 06249
1540		B	MA	7	03532	J 03489
1541	PD3	MLCA	D2,DENSI 200 BPI	12	03539	D 05823 06820 T
1542		SM	GMI	6	03551	, 05927
1543	PB	MLCA	MIV,MODEL INDICATE MOD 4 OR 6	12	03557	D 05744 06816 T
1544		B	A	7	03569	J 03759
1545	PD4	MLCA	D5,DENSI 556 BPI	12	03576	D 05826 06820 T
1546		CW	GMI	6	03588	□ 05927
1547		SM	GMZ	6	03594	, 06249
1548		B	MB	7	03600	J 03557
1549	PD5	PLCA	D8,DENSI 800 BPI	12	03607	D 05829 06820 T
1550		CW	GM1,GM2	11	03619	□ 05927 06249
1551		MLCA	M6,MODEL INDICATE MOD 6	12	03630	D 05750 06816 T
1552		B	A	7	03642	J 03759
1553	MD6	MLCA	D2,DENSI 200 BPI	12	03649	D 05823 06820 T
1554		SH	GMI	6	03661	, 05927
1555	PC	PLCA	M11,MODEL INDICATE MOD 2 OR 5	12	03667	D 05726 06816 T
1556		B	A	7	03679	J 03759
1557	PD7	MLCA	D5,DENSI 556 BPI	12	03686	D 05826 06820 T
1558		CW	GMI	6	03698	□ 05927
1559		SH	GM2	6	03704	, 06249
1560		B	MC	7	03710	J 03667
1561	PD8	MLCA	D8,DENSI 800 BPI	12	03717	D 05829 06820 T
1562		CW	GM1,GM2	11	03729	□ 05927 06249

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRJCTION
1573		MLCA	M5,MODEL	12	03740	D 05732 06816 T
1574		B	A	7	03752	J 03759
1575	A	S	GRP	6	03759	S 05801
1576		BNQ	ITR	7	03765	J 01019 Q
1577	D	MLCWS	WMGM,9999	12	03772	D 06518 09999 7
1578		MLCWS	RM,9998	12	03784	D 05928 09998 7
1579		MLNA	G2,8&5	12	03796	D 07124 03825 /
1580		S	GAP	6	03808	S 06804
1581	RS	S	SET	6	03814	S 06825
1582	B	MLNS	G2,GRP	12	03820	D 05759 06801 1
1583		S	ONE,8&5	11	03832	S 06498 03825
1584		MLCS	GRP,*&12	12	03843	D 06801 03866 3
1585		BCE	AJ,G2,1	12	03855	B 03953 05759 1
1586		BCE	G	6	03867	B 04443
1587		BCE	F	6	03873	B 04351
1588		BCE	E	6	03879	B 04253
1589		BCE	D	6	03885	B 04209
1590		BCE	I	6	03891	B 04654
1591		BCE	H	6	03897	B 04535
1592		BCE	K	6	03903	B 04866
1593		BCE	L	6	03909	B 05172
1594	RWD	RWD	11	5	03915	U &J1 R
1595		BCB1	RWD	7	03920	R 03915 2
1596		BAL	REWER	7	03927	R 06605 M
1597	LD	BCE	CWT,X4,9	12	03934	B 02538 00044 9
1598		B	NEWTO	7	03946	J 03300
1599	AJ	BCE	RS,UNITEX4,1	12	03953	B 03814 01+09 1
1600		BCE	RS,UNITEX4,2	12	03965	B 03814 01+09 2
1601		B	J	7	03977	J 04750
1602	M	SBR	MEX&5	7	03984	G 04174 B
1603		WT	11,REFER	10	03991	M &U1 05800 M
1604		BCB1	*-16	7	04001	R 03991 2
1605		BAL	WRTER	7	04008	R 05445 M
1606		B	WTM	7	04015	J 04176
1607	WREC	MLNA	SUB,DEVAR	12	04022	D 05330 05335 /

INDICATE MOD 5

ZERO GROUP NO

ZERD GAP NO

ZERO SET NO

BRANCH IF GRP 7

BRANCH IF GRP 4

BRANCH IF GRP 3

BRANCH IF GRP 2

BRANCH IF GRP 1

BRANCH IF GRP 6

BRANCH IF GRP 5

BRANCH IF GRP 8

BRANCH IF GRP 9

REWIND

BRANCH IF BUSY

BRANCH ANY ERRORS

BRANCH IF LAST DRIVE

BRANCH IF

7330

STORE BAR FOR RETURN

WRITE REFERENCE REC.

BRANCH IF BUSY

BRANCH ANY ERRORS

GO TO WTM

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1609		MLCA	IXC,X12	12	04034	D 06243 00084 T
1610	WRV	WT	11,REFER	10	04046	M XJ1 05800 M
1611		BCB1	*-16	7	04056	R 04046 Z
1612		BA1	WRTER	7	04063	R 05445 M
1613		NOP		1	04070	N
1614	DELBR	B	DELAY	7	04071	J 06250
1615	HVAR	WT	11,TMAR	10	04078	M XJ1 05720 M
1616		BCB1	*-16	7	04088	R 04078 Z
1617		BA1	WRTER	7	04095	R 05445 M
1618		A	ONE,GAP	11	04102	A 06498 06804
1619		BCE	INCR,VARD,1	12	04113	B 05830 06478 1
1620		BAV	RG	7	04125	J 04139 Z
1621		B	WREC	7	04132	J 04022
1622	RG	MLNA	ZERO,GAP	12	04139	D 05347 06804 /
1623		A	ONE,SET	11	04151	A 06498 06825
1624		B	WTM	7	04162	J 04176
1625	MEX	B	0	7	04169	J 00000
1626	WTM	SBR	WTEX&5	7	04176	G 04207 B
1627		WTM	11	5	04183	U XJ1 M
1628		BCB1	*-11	7	04188	R 04183 Z
1629		BA1	WTMER	7	04195	R 05294 M
1630	WTEX	B	0	7	04202	J 00000
1631	*					
1632	*		MINIMUM DELAY ROUTINE			
1633	*					
1634	D	CW	DELBR	6	04209	D 04071
1635		S	VARD	6	04215	S 06478
1636	BM	B	M	7	04221	J 03984
1637		C	TEN,SET	11	04228	C 06477 06825
1638		BE	RS	7	04239	J 03814 S
1639		B	BM	7	04246	J 04221
1640	*					
1641	*		1 TO 5 VARIABLE DELAY ROUTINE			
1642	*					
1643	E	MLNS	ONE,VARD	12	04253	D 06498 06478 1

INDICATE VARIABLE

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1645		MLCA	VM1E&X14,INC INCREMENT	12	04265	D 051L3 06238 T
1646		MLCA	VM1E5E&X14,IXC SMALL DELAY	12	04277	D 051L8 06243 T
1647		MLNA	VM1E10E&X14,INS INCREMENT	12	04289	D 051V3 06248 /
1648		MLNA	VM1E15E&X14,SUB BIG DELAY	12	04301	D 051V8 06330 /
1649		SW	DELBR	6	04313	, 04071
1650	BV1	B	M BRANCH TO WRITE SEC.	7	04319	J 03984
1651		C	TEN,SET SETS COMPLETE	11	04326	C 06477 06825
1652		BE	RS BRANCH IF YES	7	04337	J 03814 S
1653		B	BV1 BRANCH IF NO	7	04344	J 04319
1654	*					
1655			* 5 TO 10 VARIABLE DELAY ROUTINE			
1656	*					
1657	F	MLNS	ONE,VARD INDICATE VARIABLE	12	04351	D 06498 06478 1
1658		MLCA	VM5E&X14,INC INCREMENT	12	04363	D 051V3 06238 T
1659		MLCA	VM5E5E&X14,IXC SMALL DELAY	12	04375	D 051V8 06243 T
1660		MLNA	VM5E10E&X14,INS INCREMENT	12	04387	D 051J3 06248 /
1661		MLNA	VM5E15E&X14,SUB BIG DELAY	12	04399	D 051J8 06330 /
1662	BV2	B	M BRANCH TO WRITE SEC.	7	04411	J 03984
1663		C	TEN,SET SET COMPLETE	11	04418	C 06477 06825
1664		BE	RS BRANCH IF YES	7	04429	J 03814 S
1665		B	BV2 BRANCH IF NO	7	04436	J 04411
1666	*					
1667			* 10 TO 400 VARIABLE DELAY ROUTINE			
1668	*					
1669	G	MLNS	ONE,VARD INDICATE VARIABLE	12	04443	D 06498 06478 1
1670		MLCA	VM10E&X14,INC INCREMENT	12	04455	D 051P3 06238 T
1671		MLCA	VM10E5E&X14,IXC SMALL DELAY	12	04467	D 051P8 06243 T
1672		MLNA	VM10E10E&X14,INS INCREMENT	12	04479	D 051Q3 06248 /
1673		MLNA	VM10E15E&X14,SUB BIG DELAY	12	04491	D 051Q8 06330 /
1674	BV3	B	M BRANCH TO WRITE SEC.	7	04503	J 03984
1675		C	TEN,SET SETS COMPLETE	11	04510	C 06477 06825
1676		BE	RS BRANCH IF YES	7	04521	J 03814 S
1677		B	BV3 BRANCH IF NO	7	04528	J 04503

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRJCTION
1679	*	10	MSEC VARIABLE GO UP AND FIXED GO DOWN			
1680	*					
1681	H	MLNS	ONE,VARD INDICATE VARIABLE	12	04535	D 06498 06478 I
1682		MLNA	F5,X15	12	04547	D 06489 00099 /
1683		SW	GOVAR	6	04559	, 05879
1684		MLCA	FM10&X14,INC INCREMENT	12	04565	D 051R3 06238 T
1685		MLCA	FM10&5&X14,IXC SMALL DELAY	12	04577	D 051R8 06243 T
1686		MLNA	FM10&10&X14,INS INCREMENT	12	04589	D 06M.3 06248 /
1687		MLNA	FM10&15&X14,SUB BIG DELAY	12	04601	D 05M.8 06330 /
1688	BVL	B	M BRANCH TO WRITE SEC.	7	04613	J 03984
1689		C	TEN,SET SETS COMPLETE	11	04620	C 06477 06825
1690	REL	BE	REL BRANCH IF YES	7	04631	J 04645 S
1691		B	BVL BRANCH IF NO	7	04638	J 04613
1692		SW	REFER&50	6	04645	, 05850
1693		CW	GOVAR	6	04651	□ 05879
1694		B	RS BRANCH TO RESET	7	04657	J 03814
1695	*					
1696	*	10	MSEC FIXED GO UP AND GO DOWN			
1697	*					
1698	I	D	DELBR SET SWITCH	6	04664	, 04071
1699		MLCA	FM10&X14,INC INCREMENT	12	04670	D 051R3 06238 T
1700		MLCA	FM10&5&X14,IXC SMALL DELAY	12	04682	D 051R8 06243 T
1701		MLNA	FM10&10&X14,INS INCREMENT	12	04694	D 05M.3 06248 /
1702		MLNA	FM10&15&X14,SUB BIG DELAY	12	04706	D 05M.8 06330 /
1703	BVF	B	M BRANCH TO WRITE SEC.	7	04718	J 03984
1704		C	TEN,SET SETS COMPLETE	11	04725	C 06477 06825
1705		BE	RS BRANCH IF YES	7	04736	J 03814 S
1706		B	BVF BRANCH IF NO	7	04743	J 04718
1707	*					
1708	*	5	SEC GO DOWN ROUTINE			
1709	*					
1710	J	S	VARD NOT A VARIABLE	6	04750	S 06478
1711		MLNS	FIVE,GAP	12	04756	D 06491 06804 I
1712		MLCA	FM5&X14,INC INCREMENT	12	04768	D 06MJ3 06238 T
1713		MLCA	FM5&5&X14,IXC SMALL DELAY	12	04780	D 06MJB 06243 T
1714		MLNA	FM5&10&X14,INS INCREMENT	12	04792	D 06MK3 06248 /

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1703		MLNA	FM5E15EX14,SUB BIG DELAY	12	04804	D 06MK8 06330 /
1704		SW	DELBR	6	04816	, 04071
1705	BF5	B	M	7	04822	J 03984
1706		SW	SET	6	04829	, 06825
1707		C	ONE,SET	11	04835	C 06498 06825
1708		CW	SET	6	04846	□ 06825
1709		BE	RS	7	04852	J 03814 S
1710		B	BF5	7	04859	J 04822
1711	*					
1712	*		WRITE,BACKSPACE & WTM ROUTINE			
1713	*					
1714	K	MLCA	FM10EX14,INC	12	04866	D 05IR3 06238 T
1715		MLCA	FM1C&5EX14,IXC SMALL DELAY	12	04878	D 05IR8 06243 T
1716		PLNA	FM10E1C&X14,INS INCREMENT	12	04890	D 06M.3 06248 /
1717		MLNA	FM1C&15EX14,SUB BIG DELAY	12	04902	D 06M.8 06330 /
1718		S	VARD NOT A VARIABLE	6	04914	S 06478
1719		WT	11,REFER WRITE REFERENCE REC.	10	04920	M XUI 06800 W
1720		BCB1	--16 BRANCH IF BUSY	7	04930	R 04920 Z
1721		BAL	WRTER BRANCH ANY ERROR	7	04937	R 05445 M
1722		B	WTM BRANCH TO WTM	7	04944	J 04176
1723	WRTR	MLNA	SUB,DEVAR	12	04951	D 06330 06335 /
1724		MLCA	IXC,X12	12	04963	D 06243 00084 T
1725		WT	11,REFER WRITE RECORD	10	04975	M XUI 06800 W
1726		BCB1	--16	7	04985	R 04975 Z
1727		BAL	WRTER	7	04992	R 05445 M
1728		WT	11,9800 WRITE RECORD	10	04999	M XUI 09800 W
1729		BCB1	--16 BRANCH IF BUSY	7	05009	R 04999 Z
1730		BAL	WRTER BRANCH ANY ERROR	7	05016	R 05445 M
1731		B	DELAY BRANCH TO DELAY	7	05023	J 06250
1732		B	BSP TO BACKSPACE ROUTINE	7	05030	J 02581
1733		MLNA	SUB,DEVAR	12	05037	D 06330 06335 /
1734		MLCA	IXC,X12	12	05049	D 06243 00084 T
1735		B	DELAY BRANCH TO DELAY	7	05061	J 06250
1736		WT	11,IMAR	10	05068	M XUI 05720 W
1737		BCB1	--16	7	05078	R 05068 Z
1738		BAL	WRTER	7	05085	R 05445 M

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	INSTRUCTION	CT	ADDRS	INSTRUCTION
1739		A	ONE,GAP	INCREASE GAP COUNT	11	05092	A 06498 06804
1740		BAV	AS		7	05103	J 05117 Z
1741		B	WRTR	BRANCH IF NO	7	05110	J 04951
1742	AS	A	ONE,SET	INCREASE SET COUNT	11	05117	A 06498 06825
1743		B	WTM	BRANCH TO WTM	7	05128	J 04176
1744		C	FIVE,SET	SETS COMPLETE	11	05135	C 06491 06825
1745		BE	RS	BRANCH IF YES	7	05146	J 03814 S
1746		MLNA	ZERC,GAP	ZERO GAP COUNT	12	05153	D 06347 06804 /
1747		B	K	BRANCH IF NO	7	05165	J 04866
1748	*						
1749	*		WRITE FIRST CHARACTER IMS				
1750	*						
1751	L	WT	11,REFER	WRITE REFERENCE REC.	10	05172	M 3U1 06800 M
1752		BCB1	*-16	BRANCH IF BUSY	7	05182	R 05172 Z
1753		BA1	WRTR	BRANCH ANY ERROR	7	05189	R 05445 M
1754		B	WTM	BRANCH TO WTM	7	05196	J 04176
1755	WTMR	WT	11,WMAR		10	05203	M 3U1 05720 M
1756		BCB1	*-16	BRANCH IF BUSY	7	05213	R 05203 Z
1757		BA1	WRTR	BRANCH ANY ERROR	7	05220	R 05445 M
1758		A	ONE,GAP	INCREASE GAP COUNT	11	05227	A 06498 06804
1759		BAV	REG		7	05238	J 05252 Z
1760		B	WTMR	BRANCH IF NO	7	05245	J 05203
1761	REG	A	ONE,SET	INCREASE SET COUNT	11	05252	A 06498 06825
1762		S	GAP	ZERO GAP COUNT	6	05263	S 06804
1763		C	TEN,SET	SETS COMPLETE	11	05269	C 06477 06825
1764		BE	RS	BRANCH IF YES	7	05280	J 03814 S
1765		B	L	BRANCH IF NO	7	05287	J 05172
1766	WTMR	SBR	WTPEXES		7	05294	G 05376 B
1767		B	TYPI		7	05301	J 01088
1768		DCH	3MIM FAILED,G		10	05317	
1769		B	STER		7	05319	J 07023
1770		B	BSP	TO BACKSPACE ROUTINE	7	05326	J 02581
1771		SKP	11	ERASE TAPE	5	05333	U 3U1 E
1772		BCB1	*-11		7	05338	R 05333 2
1773		BA1	*E1		7	05345	R 05352 M

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1787		WTM	11	5	05352	U ZUL M
1788		BCBI	*-11	7	05357	R 05352 2
1789		BAI	WTMER&7	7	05364	R 05301 M
1790	WTMEX	B	0	7	05371	J 00090
1791	GOV	SBR	GOVEX&5	7	05378	G 05443 B
1792		CW	REFER&X15	6	05385	H 06HMO
1793		A	TWO,X15 INCREASE	11	05391	A 06346 00099
1794		SW	REFER&X15 WRITE FIELD	6	05402	0 06HYO
1795		C	X15,TWT	11	05408	C 00099 06651
1796		BU	GOVEX	7	05419	J 05438 /
1797		MLNA	F5,X15	12	05426	D 06489 00099 /
1798	GOVEX	B	0	7	05438	J 00000
1799						
1800	WRTER	SBR	WRTEX&5	7	05445	G 05707 0
1801		B	TYFL	7	05452	J 01088
1802		DCW	@WRITE FAILED,G	12	05470	
1803		B	STER	7	05472	J 07023
1804		BCE	WRTEX,GRP,7	12	05479	B 05702 06801 7
1805		BCE	WRTEX,GRP,8	12	05491	B 05702 06801 8
1806		BCE	WRTEX,GRP,9	12	05503	B 05702 06801 9
1807	WBP	B	BSP	7	05515	J 02581
1808		B	BSP	7	05522	J 02581
1809		RT	11,JUNK	10	05529	M ZUL 01996 R
1810		BCBI	*-16	7	05539	R 05529 2
1811		BWLI	WBP	7	05546	R 05515 -
1812		BAI	*61	7	05553	R 05560 M
1813		B	BSP	7	05560	J 02581
1814		B	BSP	7	05567	J 02581
1815		RT	11,JUNK	10	05574	M ZUL 01996 R
1816		BCDI	*-16	7	05584	R 05574 2
1817		BAI	*61	7	05591	R 05598 M
1818		D	BTI	7	05598	J 05619 K
1819		B	BSP	7	05605	J 02581
1820		B	EXB	7	05612	J 05664

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
1822	DSP	CU	ZUL,A	5	05619	U ZUL A
1823		BCBI	*-11	7	05624	R 05619 Z
1824		BAL	*EI	7	05631	R 05638 M
1825		CU	ZUL,A	5	05638	U ZUL A
1826		BCBI	*-11	7	05643	R 05638 Z
1827		BAL	*EI	7	05650	R 05657 M
1828		B	BSP	7	05657	J 02581
1829	EXB	WLNS	ZERO,GAP	12	05664	D 05317 06804 1
1830		SKP	11	5	05675	U ZUL E
1831		BCBI	*-11	7	05681	R 05676 Z
1832		BAL	*EI	7	05688	R 05695 M
1833		B	MEX	7	05695	J 04169
1834	WRTEX	B	D	7	05702	J 00000
1835	MODCT	DCW	0000000	5	05713	
1836	DENCT	DCW	0	5	05713	
1837	*					
1838	* CONSTANTS					
1839	*					
1840		DRG	5720		05720	
1841	TMAR	DCW	0MA	1	05720	
1842	MII		02 OR 50	6	05726	
1843	M5	DCW	0 5 0	6	05732	
1844	M73	DCW	0 7330 0	6	05738	
1845	MIV		04 OR 69	6	05744	
1846	M6	DCW	0 5 0	6	05750	
1847	G2	DCW	003612347	0	05759	
1848	MODTM	DCW	00221	5	05764	
1849		DCW	00176	5	05769	
1850		DCW	00064	5	05774	
1851	DENTM	DCW	00259	5	05779	
1852		DCW	00215	5	05784	
1853		DCW	00084	5	05789	
1854	MSEC1	DCW	00500	5	05794	
1855	MSEC2	DCW	10000	5	05799	
1856	MSEC3	DCW	18000	5	05804	

END

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1844	PSEC4	DCW	03500	5	05809	
1845	PSEC5	DCW	01300	5	05814	
1846	PSEC6	DCW	01500	5	05819	
1847	GMO	DC	2MA	1	05820	
1848	C2	DCW	200	3	05823	
1849	D5		556	3	05826	
1850	D8		80C	3	05829	
1851	INCRE	SBR	INCEX&5	7	05830	G 05891 8
1852		MLNA	SUB,DEVAR	12	05837	D 06330 06335 /
1853		S	INC,IXC	11	05849	S 06238 06243
1854		BZ	MINC	7	05860	J 07074 V
1855	ADIN	S	INS,SUB	11	05867	S 06248 06330
1856		NOPMM		1	05878	N
1857	GOVAR	B	GOV	7	05879	J 05378
1858	INCEX	B	0	7	05886	J 00000
1859	P30	MLCA	X73EX9,X13	12	05893	D 05R/6 00089 T
1860		B	CD	7	05905	J 03373
1861	X73	DCW	20C58Pa	5	05916	
1862		DCW	20C82Na	5	05921	
1863		DCW	20235Pa	5	05926	
1864	GMI	DC	2MA	1	05927	
1865	RM	DCW	2Pa	1	05928	
1866	VM1	DCW	20C00Na	5	05933	
1867		DCW	20C50Na	5	05938	
1868			0CC00	5	05943	
1869		DCW	20C001a	5	05948	
1870	VM5	DCW	20C00Na	5	05953	
1871		DCW	20C50Na	5	05958	
1872			0CC00	5	05963	
1873		DCW	00C27	5	05968	
1874	VM10	DCW	20C011a	5	05973	
1875		CCW	20131La	5	05978	
1876		DCW	00C20	5	05983	
1877		DCW	02053	5	05988	
1878	FM10	CCW	20CC0Ca	5	05993	

INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS
1879		DCW	20CC00.a	5	05998
1880			0CC00	5	06003
1881		DCW	00C53	5	06008
1882	FM5	DCW	20CC00.a	5	06013
1883		DCW	20CC00.a	5	06018
1884			00C00	5	06023
1885		DCW	26773	5	06028
1886	VM11	DCW	200000a	5	06033
1887		DCW	20C600.a	5	06038
1888			00C00	5	06043
1889		DCW	20CC001a	5	06048
1890	VM51	DCW	20C000a	5	06053
1891		DCW	20C600.a	5	06058
1892			00C00	5	06063
1893		DCW	00C31	5	06068
1894	VM101	DCW	20CC00.a	5	06073
1895		DCW	20CC00.a	5	06078
1896		DCW	00C25	5	06083
1897		DCW	02563	5	06088
1898	FM101	DCW	20CC00.a	5	06093
1899		DCW	20CC00.a	5	06098
1900			00C00	5	06103
1901		DCW	00C63	5	06108
1902	FM51	DCW	20CC00.a	5	06113
1903		DCW	20CC00.a	5	06118
1904			00C00	5	06123
1905		DCW	32C51	5	06128
1906	VM1X	DCW	20C010a	5	06133
1907		DCW	201800.a	5	06138
1908			00C00	5	06143
1909		DCW	20CC001a	5	06148
1910	VM5X	DCW	20C010a	5	06153
1911		DCW	201800.a	5	06158
1912			00C00	5	06163
1913		DCW	00C92	5	06168
1914	VM10X	DCW	20C000a	5	06173

159
4/15/64
PAGE 27
139

IRG TEST FOR 1410/7010 SYSTEMS

T022
INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1915		DCW	20010.a	5	06178	
1916		DCW	00072	5	06183	
1917		DCW	07385	5	06188	
1918	FH10X	DCW	20000.a	5	06193	
1919		DCW	20000.a	5	06198	
1920			00000	5	06203	
1921		DCW	00185	5	06208	
1922	FH5X	DCW	20000.a	5	06213	
1923		DCW	20000.a	5	06218	
1924		DCW	00000	5	06223	
1925		DCW	92592	5	06228	
1926	HUN2	DCW	00200	5	06233	
1927	INC	DCW	00000	5	06238	
1928	IXC	DCW	00000	5	06243	
1929	INS	DCW	00000	5	06248	
1930	GM2	DC	aMa	1	06249	
1931	DELAY	SBR	EX65	7	06250	G 06311 B
1932		SCNRR	9999EX13,9999EX13	12	06257	D 09128 09128 Y
1933	SRED	S	REDUC,DEVAR	11	06269	S 06325 06335
1934		BZ	SCN	7	06280	J 06294 V
1935		B	SRED	7	06287	J 06269
1936	SCN	SCNRR	9999EX12,9999EX12	12	06294	D 09198 09198 Y
1937	EX	B	0	7	06306	J 00000
1938	G3	DCW	87654321	8	06320	
1939	REDUC	DCW	00001	5	06325	
1940	SUB	DCW	00000	5	06330	
1941	DEVAR	DCW	00000	5	06335	
1942	Z05	DCW	00000	5	06340	
1943	HUN1	DCW	00100	5	06345	
1944	TWO		2	1	06346	
1945	ZERO	DCW	0	1	06347	
1946	G5	DCW	321	3	06350	
1947	*					
1948	* READ CORRECTION FACTOR TABLE					
1949	*					
1950	CF1	DCW	103501 7330 200 BPI	6	06351	

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
1951		DCW	100322 7330 556 BPI	6	06362	
1952		DCW	002163 4 - 6 200 BPI	6	06368	
1953		DCW	00C784 4 - 6 556 BPI	6	06374	
1954		DCW	000535 MOD 6 800 BPI	6	06380	
1955		DCW	003276 2 - 5 200 BPI	6	06386	
1956		DCW	00C907 2 - 5 556 BPI	6	06392	
1957	TAB	DCW	00C808 MOD 5 800 BPI	6	06398	
1958	SYC	DCW	00170 1410 INSTRUCT TIME	5	06403	
1959		DCW	00150 1410I INSTRUCT TIME	5	06408	
1960		DCW	00C50 7010 INSTRUCT TIME	5	06413	
1961	*					
1962	* STCRE BAR AREA					
1963	*					
1964	LOC	DCW	00000	5	06418	
1965		DCW	00000	5	06423	
1966		DCW	00000	5	06428	
1967		DCW	00000	5	06433	
1968		DCW	00C00	5	06438	
1969		DCW	00000	5	06443	
1970		DCW	00000	5	06448	
1971		DCW	00000	5	06453	
1972		DCW	00C00	5	06458	
1973		DCW	00C00	5	06463	
1974	G1	DCW	643259871	9	06472	
1975	LPTIM	DCW	000	3	06475	
1976	TEN	DCW	21Ca	2	06477	
1977	VARD	DCW	2 a	1	06478	
1978	TLS	DCW	0	1	06479	
1979	CORF	DCW	20000Ma ^q	5	06484	
1980	F5	DCW	00050	5	06489	
1981	FIVE	DCW	05	2	06491	
1982	PERCT	DCW	2%a	1	06492	
1983	RCHAN	DCW	2Ra	1	06493	
1984	LOZEN	DCW	2aa	1	06494	
1985	XCHAN	DCW	2Xa	1	06495	

IRG TEST FOR 1410/7010 SYSTEMS

CT ADDR INSTRUCTION

OPCOD OPERAND
 NUMBER OF JIK INST

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDR	INSTRUCTION
1986	DOLAR		0	1	06496	
1987	EXCLA	DCW	2.2	1	06497	
1988	CNE		1	1	06498	
1989	THRE		3	1	06499	
1990	FOUR		4	1	06500	
1991		DCW	5	1	06501	
1992	ONES	DCW	1	1	06502	
1993	THREES	DCW	3	1	06503	
1994	ZEROS	DCW	2	5	06508	
1995	F50	DCW	400	3	06511	
1996	FF	DCW	00045	5	06516	
1997	SEVN	DCW	7	1	06517	
1998	WPGM	DCW	2.2	1	06518	
1999	NEX1	ECU	400			
2000	REST	DCW	2JC2000 2.6	7	06519	
2001	STARAD	DCW	WRTX	5	06531	05702
2002	STOPAD	DCW	CHK1	5	06536	02147
2003	ADCHLD	DCW	00000	5	06541	
2004	CHCODE	DCW	0	1	06542	
2005	CHSTAT		0	1	06543	
2006	BOLOP		1	1	06544	
2007	SIX		6	1	06545	
2008	K1	DCW	2J13XRULM2	8	06553	
2009	K2		243212	4	06557	
2010	INSTA	DCW	2000000000M2	9	06566	
2011	LPTA	DCW	000	3	06569	
2012		DCW	000	3	06572	
2013		DCW	000	3	06575	
2014		DCW	000	3	06578	
2015		DCW	000	3	06581	
2016		DCW	000	3	06584	
2017		DCW	000	3	06587	
2018		DCW	000	3	06590	
2019		DCW	000	3	06593	
2020		DCW	000	3	06596	
2021	LOW	DCW	00000	5	06601	

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2088		B	GT	7	07321	J 07247
2089	GE	MLCS	ON,SYS1E14	12	07328	D 07370 01270 3
2090		B	HT	7	07340	J 07259
2091	H1	MLCS	ON,SYS1E15	12	07347	D 07370 01271 3
2092		B	IT	7	07359	J 07271
2093		DCW	a a	4	07369	
2094	CN	DCW	a1a	1	07370	
2095	CALT	SBR	CHSTTR&S	7	07371	G 01683 B
2096		MLNA	STARAD,SCAN&10	12	07378	D 06531 01342 /
2097		SW	25	6	07390	, 00025
2098		S	X1	6	07396	S 00029
2099		A	ONES,X1	11	07402	A 06502 00029
2100		SCNLB	09599,0	12	07413	D 09999 00000 -
2101		SBR	ADCHLD	7	07425	G 06541 B
2102		A	ONES,ADCHLD	11	07432	A 06502 06541
2103		C	ADCHLD,STOPAD	11	07443	C 06541 06536
2104		BE	CHSTTR	7	07454	J 01678 S
2105		MLNA	ADCHLD,MLC&S	12	07461	D 06541 01397 /
2106		MLCS	0,BCH&11	12	07473	D 00000 01415 3
2107		BCE	CHINS,K1,7	12	07485	B 01463 06553 7
2108		BCE		1	07497	B
2109		BCE		1	07498	B
2110		BCE	STINS	6	07499	B 01548
2111		BCE		1	07505	B
2112		BCE		1	07506	B
2113		BCE		1	07507	B
2114		BCE	OLINS	6	07508	B 01579
2115		S	ONES,ADCHLD	11	07514	S 06502 06541
2116		MLNA	ADCHLD,SCAN&10	12	07525	D 06541 01342 /
2117		B	SCAN	7	07537	J 01332
2118		MLNA	ADCHLD,MLCX&10	12	07544	D 06541 01485 /
2119		MLCS	CHCODE,0E&X1	12	07556	D 06542 000#0 3
2120		NOP		1	07568	N
2121		B	UPCATE	7	07569	J 01433
2122		A	THREES,ACDFLD	11	07576	A 06503 06541
2123		MLNA	ADCHLD,CID&1C	12	07587	D 06541 01528 /

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2141		MLNS	TD,0	12	07599	D 06808 00000 1
2142		S	THREES,ADDHLD	11	07611	S 06503 06541
2143		B	UPDATE	7	07622	J 01433
2144		MLNA	ADDHLD,MLC&10	12	07629	D 06541 01570 /
2145		MLCS	CHSTAT,0	12	07641	D 06543 00000 3
2146		B	UPDATE	7	07653	J 01433
2147		A	SIX,ADDHLD	11	07660	A 06545 06541
2148		MLNA	ADDHLD,MLC0&5	12	07671	D 06541 01607 /
2149		MLCS	0,BCS&11	12	07683	D 00000 01625 3
2150		BCE	SETOL,K2,1	12	07695	B 01636 06557 1
2151		BCE		1	07707	B
2152		BCE		1	07708	B
2153		BCE		1	07709	B
2154		B	REDUCE	7	07710	J 01660
2155		MLNA	ADDHLD,MLCL&10	12	07717	D 06541 01658 /
2156		MLCS	BOLOM,0	12	07729	D 06544 00000 3
2157		S	SIX,ADDHLD	11	07741	S 06545 06541
2158		B	UPDATE	7	07752	J 01433
2159		B	O	7	07759	J 00000
2160		DCW	@M@	1	07766	
2161	MTYP	SBR	MRCWX&5	7	07767	G 07288 B
2162		BNQ	ITR	7	07774	J 01019 Q
2163		BCE	MTYG,TAD7,1	12	07781	B 07800 01007 1
2164		B	MRCW&7	7	07793	J 07181
2165	MTYG	MLNA	T258,TYPIT&8	12	07800	D 07858 01954 /
2166		MLCS	TYPITB,TYPITC	12	07812	D 01969 01980 7
2167		MLNA	T299,TYPIT&10	12	07824	D 07851 01944 /
2168		CW	202	6	07836	□ 00202
2169		SBR	TYPITB&10	7	07842	G 01979 B
2170		B	MRCW&7	7	07849	J 07181
2171	T258	DCW	@258@	3	07858	
2172	T299	DCW	@299@	3	07861	
2173		ORG	9973		09973	

IRG TEST FOR 1410/7010 SYSTEMS

CT ADDR INSTRUCTION

7 09973 J 03645 K
 11 09980 A 06498 06475
 7 09991 J 07166
 J07055

PGLIN	LABEL	OPCOD	OPERAND	SEQUENCE NO. AND TOP MEM ADDRESS	COL
2175	JK	D	BTT	RESBR	
2176		A	ONE,LPTIM		
2177		B	OFS		
2178		EX	P2		
2179	*				
2180	*		READ SECTION		
2181	*				
2182		ORG	1230		01230
2183		DC	a		15 01244
2184		ORG	1245		01245
2185		DC	a209#R@		5 01249
2186		DCW	aT022@		4 01253
2187		D	DC	a@a,G	1 01254
2188	*				
2189	*		STANDARD SYSTEM CONTROL CARD		
2190	*				
2191		ORG	1256		01256
2192		DC	a a	0-1410,1-14101,X-7010	1 01256
2193		a a	a a	MEMORY SIZE 0-10K,1-20K	1 01257
2194		a a	a a	SPARE	1 01258
2195		a a	a a	CH1 PRINTER 1-100,2-132	1 01259
2196		a a	a a	CH2 PRINTER 1-100,2-132	1 01260
2197		a a	a a	CH3 PRINTER 1-100,2-132	1 01261
2198		a a	a a	CH4 PRINTER 1-100,2-132	1 01262
2199		a a	a a	1 IF OVERLAP	1 01263
2200		a a	a a	1 IF PRIORITY ALERT	1 01264
2201		a a	a a	SPARES	3 01267
2202		a a	a a	1 IF CHAN 1 PRESENT	1 01268
2203		a a	a a	1 IF CHAN 2 PRESENT	1 01269
2204		a a	a a	1 IF CHAN 3 PRESENT	1 01270
2205		a a	a a	1 IF CHAN 4 PRESENT	1 01271
2206		a a	a a	SPARES	17 01288
2207		ORG	1000		01000
2208	*		STANDARD TADS		
2209	*				

NOT 1 1

IRG TEST FOR 1410/7010 SYSTEMS

CT ADDR INSTRUCTION

PGLIN	LABEL	OPCOD	OPERAND	BYPASS ALL TYPE
2194		DC	0 0	TYPE CLPUT
2195		DC	0 0	NO LCQPS LOOP
2196		DC	0 0	NO ERRCR HALTS HALT ON ERROR
2197		DC	0 0	CNE PROGRAM PASS REPEAT PROGRAM

* SPECIAL TACS

2199				
2200		CC	0 0	
2201		CC	0 0	PRINT BAD GAPS BYPASS BAD GAP
2202		CC	0 0	NO TAPE OUTPUT OUTPUT CN TAPE
2203		CC	0 0	TYPE AVERAGES TYPE GRAPH
2204		DCM	0 0	
2205		DCM	0 0	CHAR INDICATING MODEL & DENSITY
2206		DCM	0 0	1 7330 200 BPI
2207		DCM	0 0	2 7330 556 BPI
2208		DCM	0 0	3 729 4 OR 6 200 BPI
2209		DCM	0 0	4 729 4 OR 6 556 BPI
2210		DCM	0 0	5 729 6 800 BPI
2211		DCM	0 0	6 729 2 OR 5 200 BPI
2212		DCM	0 0	7 729 2 OR 5 556 BPI
2213		DCM	0 0	8 729 5 800 BPI
2214		DCM	0 0	

* ALTER ROUTINE

2215				
2216				
2217				
2218		SBR	ITREXT65	STORE BAR FOR RETURN
2219		RCP	ITR264	ENTER LOC TO BE ALTERED
2220		BNT1	ITREXT	
2221		BEX1	ITR1,M	RETURN IF ANY BUT WLR
2222		BA1	ITR2	RESET I/O INTERLOCK
2223		RCPW	0	ENTER DATA
2224		BEX1	ITR2,M	RETURN IF ANY BUT WLR
2225		BA1	*E1	RESET I/O INTERLOCK
2226		B	0	RETURN TO PROGRAM
2227				

* STANDARD TYPE ROUTINE

2228				
2229				

1	01000	
1	01001	
1	01002	
1	01003	
1	01004	
1	01005	
1	01006	
1	01007	
1	01008	
1	01009	
1	01010	
1	01011	
1	01012	
1	01013	
1	01014	
1	01015	
1	01016	
1	01017	
1	01018	
7	01019	G 01086 B
10	01026	M 270 01061 R
7	01036	R 01081 B
7	01043	R 01026 M
7	01050	R 01057 G
10	01057	L 270 00000 R
7	01067	R 01057 M
7	01074	R 01081 G
7	01081	J 00000

PGLIN	LABEL	OPCOD	OPERAND	STORE MESSAGE ADDRESS	CT	ADDRS	INSTRUCTION
2230		SBR	TYP2E5		7	01088	G 01107 B
2231		SBR	TYP3E8	SAME AS ABOVE	7	01095	G 01141 B
2232		SCNRG	0,C	FIND RETURN ADDRESS	12	01102	D 00000 00000 Q
2233		SAR	TYP4E5	SET RETURN ADDRESS	7	01114	G 01162 A
2234		BCE	TYP4,TADC,1	BYPASS IF TADO IS A 1	12	01121	B 01157 01000 I
2235		MCP	0	TYPE	10	01133	M 210 00000 M
2236		BCB1	TYP3	BRANCH IF BUSY	7	01143	R 01133 Z
2237		BA1	*E1	RESET I/O INTERLOCK	7	01150	R 01157 M
2238		B	C	RETURN TO PROGRAM	7	01157	J 00000
2239		DCW	21454H2		5	01168	
2240		DCW	21292H2		5	01173	
2241		DCW	20484F2		5	01178	
2242		DCW	2000002		5	01183	
2243		DCW	2000002		5	01188	
2244		DCW	2000002		5	01193	
2245		DCW	2000002		5	01198	
2246		DCW	2000002		5	01203	
2247		DCW	2000002		5	01208	
2248		DCW	2000002		5	01213	
2249		DCW	2000002		5	01218	
2250		DCW	2000002		5	01223	
2251		DCW	2000002		5	01228	
2252		DCW	2NEG2		3	01231	
2253		ORG	1290			01290	
2254	*						
2255	*						
2256	*						
CHANNEL ALTER ROUTINE							
2257		SBR	CHSTR&5		7	01290	G 01683 B
2258		MLNA	STARAD,SCAN&10		12	01297	D 06531 01342 /
2259		SW	25		6	01309	, 00025
2260		S	X1		6	01315	S 00029
2261		A	ONES,X1		11	01321	A 06502 00029
2262		SCNLB	09599,0		12	01332	D 09999 00000 -
2263		SBR	ADCHLD		7	01344	G 06541 B
2264		A	ONES,ADHLD		11	01351	A 06502 06541

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	GPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2265		C	ADCHLD,STOPAD	11	01362	C 06541 06536
2266		BE	CHSTTR	7	01373	J 01678 S
2267		MLNA	ADCHLD,MLC&5	12	01380	D 06541 01397 /
2268		MLCS	C,BC&11	12	01392	D 00000 01415 3
2269		BCE	CHINS,K1,7	12	01404	B 01463 06553 7
2270		BCE		1	01416	B
2271		BCE		1	01417	B
2272		BCE	STINS	6	01418	B 01548
2273		BCE		1	01424	B
2274		BCE		1	01425	B
2275		BCE		1	01426	B
2276		BCE	OLINS	6	01427	B 01579
2277		S	ONES,ADDHLD	11	01433	S 06502 06541
2278		MLNA	ADCHLD,SCAN&10	12	01444	D 06541 01342 /
2279		B	SCAN	7	01456	J 01332
2280		MLNA	ADCHLD,MLCX&10	12	01463	D 06541 01485 /
2281		MLCS	CHCODE,0&X1	12	01475	D 06542 000#0 3
2282		NOP		1	01487	N
2283		B	UPDATE	7	01488	J 01433
2284		A	THREES,ADDHLD	11	01495	A 06503 06541
2285		MLNA	ADCHLD,CTD&10	12	01506	D 06541 01528 /
2286		MLNS	TD,0	12	01518	D 06808 00000 1
2287		S	THREES,ADDHLD	11	01530	S 06503 06541
2288		B	UPDATE	7	01541	J 01433
2289		MLNA	ADCHLD,MLCX&10	12	01548	D 06541 01570 /
2290		MLCS	CHSTAT,0	12	01560	D 06543 00000 3
2291		B	UPDATE	7	01572	J 01433
2292		A	SIX,ADDHLD	11	01579	A 06545 06541
2293		MLNA	ADCHLD,MLC0&5	12	01590	D 06541 01607 /
2294		MLCS	O,BCS&11	12	01602	D 00000 01625 3
2295		BCE	SETOL,K2,1	12	01614	B 01636 06557 1
2296		BCE		1	01626	B
2297		BCE		1	01627	B
2298		BCE		1	01628	B
2299		B	REDUCE	7	01629	J 01660

IRG TEST FOR 1410/701C SYSTEMS

CT	ADDRS	INSTRUCTION
12	01636	D 06541 01658 /
12	01648	D 06544 00000 3
11	01660	S 06545 06541
7	01671	J 01433
7	01678	J 00000
1	01685	
	01289	

PGLIN	LABEL	OPCOD	OPERAND	COL
2300		MLNA	ADCHLD,MLCL1E10	
2301		MLCS	BOLOM,0	
2302		S	SIX,ADCHLD	
2303		B	UPDATE	
2304		B	0	
2305		CCM	GMG	
2306		ORG	1289	
2307			*****	
2308			**STANDARD CHANNEL 1 CONTROL CARD.	
2309		ORG	1289	CHARACTER & PURPOSE
2310		DC	1 - PAPER TAPE READER	13
2311		11 DC	1 - CCNSOLE PRINTER	14
2312		12 DC	1 - TAPES 729/7330	15
2313		11 DC	6 SPARES	16-24
2314		12 DC	R,S,C - 1402,1442,7223 READER	25
2315		13 DC	B - READER COLUMN BINARY FEAT.	26
2316		14 DC	P - 1402 PUNCH	27
2317		15 DC	B - PUNCH COLUMN BINARY FEAT.	28
2318		16 DC	P - 1403 PRINTER	29
2319		17 DC	A,N - ALPHA,NUMERIC PRINT CHAIN	30
2320		18 DC	1,2 - 1C0,132 CHAR PRINT BUFFER	31
2321		19 DC	F - 1301 FILE	32
2322		20 DC	1 THRU C - 1 THRU 1C FILE MODULE	33
2323		21 DC	1 THRU G - 1 THRU 10 ACCESSES	34
2324		22 DC	R - 1311 IMPAC	35
2325		23 DC	1 THRU 5 - 1 THRU 5 IMPAC MODULE	36
2326		24 DC	1 - SEEK OVERLAP FEATURE	37
2327		25 DC	1 - SCAN FEATURE	38
2328		26 DC	1 - TRACK RECORD FEATURE	39
2329		27 DC	F - 1405 FILE	40
2330		28 DC	1,2,3 - 1,2,3 ARMS IN MCDULE	0 41
2331		29 DC	1,2,3 - 1,2,3 ARMS IN MCDULE	1 42
2332		30 DC	1,2,3 - 1,2,3 ARMS IN MCDULE	2 43
2333		31 DC	1,2,3 - 1,2,3 ARMS IN MCDULE	3 44
2334		32 DC	1,2,3 - 1,2,3 ARMS IN MCDULE	4 45

CT	ADDRS	INSTRUCTION
	01289	
1	01289	
1	01290	
1	01291	
9	01300	
1	01301	
1	01302	
1	01303	
1	01304	
1	01305	
1	01306	
1	01307	
1	01308	
1	01309	
1	01310	
1	01311	
1	01312	
1	01313	
1	01314	
1	01315	
1	01316	
1	01317	
1	01318	
1	01319	
1	01320	
1	01321	

INSTRUCTION

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
2335		833 DC	8 8 1 - 7750 ON THIS CHANNEL	1	01322	
2336		834 DC	8 8 1 - 7740 ON THIS CHANNEL	1	01323	
2337		835 DC	8 8 1 - 1440/1460 ON THIS CHANNEL	1	01324	
2338		836 DC	8 8 1 - CFAN HAS CHANNEL EXTENDER	1	01325	
2339		837 DC	8 8 L - LCW SPEED HYPER TAPE	1	01326	
2340		838 DC	8 8 1,2,3-1050-1,2,OR BOTH ADAPTERS	1	01327	
2341		855 DC	8 8 SPARES	17	01344	
2342		856 DC	8 8 52-68	1	01345	
2343		*****				
2344		*\$STANDARD	CPANNEL 2 CONIRGL CARD.			
2345		ORG	1346 CHARACTER & PURPOSE			COL
2346		DC	8 8 1 - PAPER TAPE READER	1	01346	13
2347		81 DC	8 8 1 - CONSOLE PRINTER	1	01347	14
2348		82 DC	8 8 1 - TAPES 729/7330	1	01348	15
2349		811 DC	8 8 SPARES	9	01357	16-24
2350		812 DC	8 8 R,S,C - 1402,1442,7223 READER	1	01358	25
2351		813 DC	8 8 B - READER COLUMN BINARY FEAT.	1	01359	26
2352		814 DC	8 8 P - 1402 PUNCH	1	01360	27
2353		815 DC	8 8 B - PUNCH COLUMN BINARY FEAT.	1	01361	28
2354		816 DC	8 8 P - 1403 PRINTER	1	01362	29
2355		817 DC	8 8 A,N - ALPHA,NUMERIC PRINT CHAIN	1	01363	30
2356		818 DC	8 8 1,2 - 100,132 CHAR PRINT BUFFER	1	01364	31
2357		819 DC	8 8 F - 1301 FILE	1	01365	32
2358		820 DC	8 8 1 THRU 0 - 1 THRU 10 FILE	1	01366	MODULE33
2359		821 DC	8 8 1 THRU 0 - 1 THRU 10 ACCESSSES	1	01367	34
2360		822 DC	8 8 R - 1311 IMPAC	1	01368	35
2361		823 DC	8 8 1 THRU 5 - 1 THRU 5 IMPAC	1	01369	MODULE36
2362		824 DC	8 8 1 - SEEK OVERLAP FEATURE	1	01370	37
2363		825 DC	8 8 1 - SCAN FEATURE	1	01371	38
2364		826 DC	8 8 1 - TRACK RECORD FEATURE	1	01372	39
2365		827 DC	8 8 F - 1405 FILE	1	01373	40
2366		828 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE	1	01374	0 41
2367		829 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE	1	01375	1 42
2368		830 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE	1	01376	2 43
2369		831 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE	1	01377	3 44

CT ADDR INSTRUCTION

IRG TEST FOR 1410/7C10 SYSTEMS

PG LIN	LABEL	OPCOD	OPERAND	CT	ADDR	INSTRUCTION
2370		032 DC	0 0 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01378	
2371		033 DC	0 0 1 - 775C CN THIS CHANNEL	1	01379	
2372		034 DC	0 0 1 - 774C CN THIS CHANNEL	1	01380	
2373		035 DC	0 0 1 - 144C/1460 ON THIS CHANNEL	1	01381	
2374		036 DC	0 0 1 - CFAN FAS CHANNEL EXTENDER	1	01382	
2375		037 DC	0 0 1 - LCW SPEED HYPER TAPE	1	01383	
2376		038 DC	0 0 1,2,3-1C5C-1,2,CR BOTH ADAPTERS	1	01384	
2377		055 DC	0 0 0 SPARES	17	01401	
2378		056 DC	0 0 0	1	01402	
2379		*****				
2380		*\$STANDARD CHANNEL 3 CONTROL CARD.				
2381		ORG	14C3 CHARACTER & PURPOSE		01403	
2382		DC	0 0 1 - PAPER TAPE READER	1	01403	
2383		01 DC	0 0 1 - CCNSOLE PRINTER	1	01404	
2384		02 DC	0 0 1 - TAPES 729/7330	1	01405	
2385		011 DC	0 0 0 SPARES	9	01414	
2386		012 DC	0 0 R,S,C - 1402,1442,7223 READER	1	01415	
2387		013 DC	0 0 B - READER COLUMN BINARY FEAT.	1	01416	
2388		014 DC	0 0 P - 14C2 PUNCH	1	01417	
2389		015 DC	0 0 B - PUNCH COLUMN BINARY FEAT.	1	01418	
2390		016 DC	0 0 P - 14C3 PRINTER	1	01419	
2391		017 DC	0 0 A,N - ALPHA,NUMERIC PRINT CHAIN	1	01420	
2392		018 DC	0 0 1,2 - 1C0,132 CHAR PRINT BUFFER	1	01421	
2393		019 DC	0 0 F - 1301 FILE	1	01422	
2394		020 DC	0 0 1 THRU 0 - 1 THRU 10 FILE MODULE33	1	01423	
2395		021 DC	0 0 1 THRU 0 - 1 THRU 10 ACCESSES	1	01424	
2396		022 DC	0 0 R - 1311 IMPAC	1	01425	
2397		023 DC	0 0 1 THRU 5 - 1 THRU 5 IMPAC MODULE36	1	01426	
2398		024 DC	0 0 1 - SEEK OVERLAP FEATURE	1	01427	
2399		025 DC	0 0 1 - SCAN FEATURE	1	01428	
2400		026 DC	0 0 1 - TRACK RECORD FEATURE	1	01429	
2401		027 DC	0 0 F - 1405 FILE	1	01430	
2402		028 DC	0 0 1,2,3 - 1,2,3 ARMS IN MODULE 0	1	01431	
2403		029 DC	0 0 1,2,3 - 1,2,3 ARMS IN MODULE 1	1	01432	
2404		030 DC	0 0 1,2,3 - 1,2,3 ARMS IN MODULE 2	1	01433	

CT ADDR INSTRUCTION

PGLIN	LABEL	OPCCD	OPERAND	CT	ADDR	INSTRUCTION
2405		831 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE 3	1	01434	
2406		832 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01435	
2407		833 DC	8 8 1 - 7750 ON THIS CHANNEL	1	01436	
2408		834 DC	8 8 1 - 7740 ON THIS CHANNEL	1	01437	
2409		835 DC	8 8 1 - 1440/1460 ON THIS CHANNEL	1	01438	
2410		836 DC	8 8 1 - CFAN HAS CHANNEL EXTENDER	1	01439	
2411		837 DC	8 8 L - LCM SPEED HYPER TAPE	1	01440	
2412		838 DC	8 8 1,2,3-1C50-1,2,OR BOTH ADAPTERS	1	01441	
2413		855 DC	8 8 SPARES	17	01458	
2414		856 DC	8 8	1	01459	
2415	*****					
2416	**STANDARD CHANNEL 4 CONTROL CARD.					
2417		ORG 1460	CHARACTER & PURPOSE			COL
2418		DC	8 8 1 - PAPER TAPE READER	1	01460	13
2419		81 DC	8 8 1 - CONSOLE PRINTER	1	01461	14
2420		82 DC	8 8 1 - TAPES 729/7330	1	01462	15
2421		811 DC	8 8 SPARES	9	01471	16-24
2422		812 DC	8 8 R,S,C - 1402,1442,7223 READER	1	01472	25
2423		813 DC	8 8 B - READER COLUMN BINARY FEAT.	1	01473	26
2424		814 DC	8 8 P - 1402 PUNCH	1	01474	27
2425		815 DC	8 8 B - PUNCH COLUMN BINARY FEAT.	1	01475	28
2426		816 DC	8 8 P - 1403 PRINTER	1	01476	29
2427		817 DC	8 8 A,N - ALPHA,NUMERIC PRINT CHAIN	1	01477	30
2428		818 DC	8 8 1,2 - 100,132 CHAR PRINT BUFFER	1	01478	31
2429		819 DC	8 8 F - 1301 FILE	1	01479	32
2430		820 DC	8 8 1 THRU 0 - 1 THRU 10 FILE MODULES	1	01480	33
2431		821 DC	8 8 1 THRU 0 - 1 THRU 10 ACCESSES	1	01481	34
2432		822 DC	8 8 R - 1311 IMPAC	1	01482	35
2433		823 DC	8 8 1 THRU 5 - 1 THRU 5 IMPAC MODULES	1	01483	36
2434		824 DC	8 8 1 - SEEK OVERLAP FEATURE	1	01484	37
2435		825 DC	8 8 1 - SCAN FEATURE	1	01485	38
2436		826 DC	8 8 1 - TRACK RECORD FEATURE	1	01486	39
2437		827 DC	8 8 F - 1405 FILE	1	01487	40
2438		828 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE 0	1	01488	41
2439		829 DC	8 8 1,2,3 - 1,2,3 ARMS IN MODULE 1	1	01489	42

IRG TEST FOR 1410/701C SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2440		£30 DC	2 1,2,3 - 1,2,3 ARMS IN MODULE 2	1	01490	
2441		£31 DC	2 1,2,3 - 1,2,3 ARMS IN MODULE 3	1	01491	
2442		£32 DC	2 1,2,3 - 1,2,3 ARMS IN MODULE 4	1	01492	
2443		£33 DC	2 1 - 775C ON THIS CHANNEL	1	01493	
2444		£34 DC	2 1 - 7740 ON THIS CHANNEL	1	01494	
2445		£35 DC	2 1 - 144C/1460 ON THIS CHANNEL	1	01495	
2446		£36 DC	2 1 - CFAN HAS CHANNEL EXTENDER	1	01496	
2447		£37 DC	2 1 - LCW SPEED HYPER TAPE	1	01497	
2448		£38 DC	2 1,2,3-1C50-1,2,OR BOTH ADAPTERS	1	01498	
2449		£55 DC	2 2 SPARES	17	01515	
2450		£56 DC	2 69	1	01516	
2451		ORG	1686		01686	
2452	*					
2453	*		PRINT ROUTINE			
2454	*					
2455		SBR	PREXT£5	7	01686	G 01776 B
2456		BAI	*£1	7	01693	R 01700 M
2457		BCY	OVFLO	7	01700	J 01778 2
2458		BPCB	*-13	7	01707	J 01700 R
2459		PLCWS	WMGM,333	12	01714	D 06518 00333 7
2460		W	201	10	01726	M 320 00201 W
2461		BCBI	*-16	7	01736	R 01726 2
2462		BNRI	TRY2	7	01743	R 01833 1
2463		BWLI	BR100	7	01750	R 01808 -
2464		BAI	PRERR	7	01757	R 01827 M
2465		CS	332	6	01764	/ 00332
2466		CS		1	01770	/
2467		B	0	7	01771	J 00000 G
2468		BAI	*£1	7	01778	R 01785 M
2469		CC	1	2	01785	F 1
2470		BCBI	BCPA1	7	01787	R 01693 2
2471		BAI	PRERR	7	01794	R 01827 M
2472		B	WATE	7	01801	J 01707
2473		PLCWS	WMGM,301	12	01808	D 06518 00301 7
2474		B	WRITE	7	01820	J 01726

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN LABEL OPCOD OPERAND H WRITE H PRINTER ERROR HALT

PGLIN	LABEL	OPCOD	OPERAND	H	WRITE	H	PRINTER ERROR HALT
2475						6	01827 * C1726
2476		NOPWM				1	01833 N
2477		B	MOV2			7	01834 J C1848
2478		B	TYPII			7	01841 J C1934
2479		MLNA	εPRERR,STARAD			12	01848 D C5765 06531 /
2480		CW	TRY2&I			6	01860 □ C1834
2481		MLNA	εPRINT,STOPAD			12	01866 D C5770 06536 /
2482		MLCS	LOZEN,CHCODE			12	01878 D C6494 06542 3
2483		MLCS	XCFAN,CHSTAT			12	01890 D C6495 06543 3
2484		B	CHSTI			7	01902 J 01290
2485		MLNA	εCFKI,STOPAD			12	01909 D C5775 06536 /
2486		MLNA	εHRTEX			6	01921 D C5780
2487		B	BCHAI			7	01927 J 01693
2488		MLCWS	WMGM,251			12	01934 D 06518 00251 7
2489		WCP	201			10	01946 M 210 00201 M
2490		BAI	--16			7	01956 R C1946 M
2491		CS	299			6	01963 / C0299
2492		SW	201,GRPT&I			11	01969 * C0201 05891
2493		CW	GRA&I			6	01980 □ 04170
2494		B	PREXT			7	01986 J C1771
2495		CCW	αPOSA			3	01995
2496		CCW	α α.G			1	01996
2497		ORG	2000				02000
2498		NOPWM				1	02000 N
2499		B	CS9			7	02001 J C2025
2500		WCP	TITL			10	02008 M 210 01250 M
2501		BAI	TILNO			7	02018 R C2008 M
2502		SW	START&I			6	02025 * C2001
2503		CS	99			6	02031 / C0099
2504		SW	34,44			11	02037 * C0034 00044
2505		SW	68,73			11	02048 * C0068 00073
2506		SW	90,95			11	02059 * C0090 00095
2507		SW	80,85			11	02070 * C0080 00085
2508		SW	35,25			11	02081 * C0035 00025
2509		CW	BFI			6	02092 □ C2196

PRINT TITLE

PGLIN	LABEL	GPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2510		SW	BRE	6	02098	02218
2511		DCW	ANNNA	4	02107	
2512		NOP		1	02108	N
2513		B	MTYP	7	02109	J 07767
2514		BCE	OMAC,SYSL,0	12	02116	B 02232 01256 0
2515		BCE	IMAC,SYSL,1	12	02128	B 02246 01256 1
2516		B	XMAC	7	02140	J 02290
2517		BCE	CH1,SYSL12,1	12	02147	B 02334 01268 1
2518		BCE	CH2,SYSL13,1	12	02159	B 02385 01269 1
2519		BCE	CH3,SYSL14,1	12	02171	B 02436 01270 1
2520		BCE	CH4,SYSL15,1	12	02183	B 02487 01271 1
2521		NCPWM		1	02195	N
2522		B	FINIS	7	02196	J 05165
2523		B	NEXI	7	02203	J 00400
2524		B	CHSTT	7	02210	J 01290
2525		NOP		1	02217	N
2526		B	REWA	7	02218	J 02614
2527		B	RRR	7	02225	J 02786
2528		NOP		1	02232	N
2529		S	X14	6	02233	S 00094
2530		B	CHK1	7	02239	J 02147
2531		NOP		1	02246	N
2532		MLNA	HUN1,X14	12	02247	D 06345 00094 /
2533		MLNS	FIVE,X9	12	02259	D 06491 00069 1
2534		MLNS	FIVE,X10	12	02271	D 06491 00074 1
2535		B	CHK1	7	02283	J 02147
2536		NOP		1	02290	N
2537		MLNA	HUN2,X14	12	02291	D 06233 00094 /
2538		MLNA	TEA,X9	12	02303	D 06477 00069 /
2539		MLNA	TEA,X10	12	02315	D 06477 00074 /
2540		B	CHK1	7	02327	J 02147
2541		MLNS	ONE,CHAN	12	02334	D 06498 06807 1
2542		MLCS	PERCT,CHCODE	12	02346	D 06492 06542 3
2543		MLCS	RCFAN,CHSTAT	12	02358	D 06493 06543 3
2544		NCPWM		1	02370	N

READ IN READ SECTION
CHANNEL ALTER

TO REWIND ALL DRIVES
TO UPDATE READ SECTION

SET UP FOR 1410

SET UP FOR 1410I

SET UP FOR 7010

MODIFY FOR
CHANNEL ONE

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2545		B	*E1	7	02371	J 02378
2546		B	BB	7	02378	J 02210
2547		MLNS	TWC,CHAN	12	02385	D 06346 06807 1
2548		MLCS	LOZEN,CHCODE	12	02397	D 06494 06542 3
2549		MLCS	XCFAN,CHSTAT	12	02409	D 06495 06543 3
2550		NCPWM		1	02421	N
2551		B	*E1	7	02422	J 02429
2552		B	BB	7	02429	J 02210
2553		MLNS	THRE,CHAN	12	02436	D 06499 06807 1
2554		MLCS	DOLAR,CHCODE	12	02448	D 06496 06542 3
2555		MLCS	TYRE,CHSTAT	12	02460	D 06499 06543 3
2556		NCPWM		1	02472	N
2557		B	*E1	7	02473	J 02480
2558		B	BB	7	02480	J 02210
2559		MLNS	FOUR,CHAN	12	02487	D 06500 06807 1
2560		MLCS	EXCLA,CHCODE	12	02499	D 06497 06542 3
2561		MLCS	ONE,CHSTAT	12	02511	D 06498 06543 3
2562		NCPWM		1	02523	N
2563		B	*E1	7	02524	J 02531
2564		B	BB	7	02531	J 02210
2565		MLCS	CHAN,*E12	12	02538	D 06807 02561 3
2566		BCE	CHK2,G5,1	12	02550	B 02159 06350 1
2567		BCE	CHK3	6	02562	B 02171
2568		BCE	CHK4	6	02568	B 02183
2569		B	BFI-1	7	02574	J 02195
2570		SBR	BSEX65	7	02581	G 02612 B
2571		BSP	11	5	02588	U 201 B
2572		BCB1	*-11	7	02593	R 02588 2
2573		BA1	BSPER	7	02600	R 06652 M
2574		B	0	7	02607	J 00000
2575		ORG	5720		05720	
2576		DCW	2MG	1	05720	
2577			22 OR 52	6	05726	
2578		DCW	2 5 2	6	05732	
2579		DCW	2 7330 2	6	05738	

TO 18DAG FOR CH1 TABLE

TO 18DAG FOR CH2 TABLE

TO 18DAG FOR CH3 TABLE

TO 18DAG FOR CH4 TABLE

TRY NEXT CHAN

STORE BAR
BACKSPACE
CHECK FOR BUSY
CHECK FOR ERRORS
RETURN

IRG TEST FOR I410/701C SYSTEMS

PGLIN	LABEL	OPCOD	CPERAND	CT	ADDRS	INSTRUCTION
2580			04 OR 6a	6	05744	
2581		DCW	a 6 a	6	05750	
2582		DCW	985612347	9	05759	
2583		DCW	00221	5	05764	
2584		DCW	00176	5	05769	
2585		DCW	00064	5	05774	
2586		DCW	00273	5	05779	
2587		DCW	00224	5	05784	
2588		DCW	00084	5	05789	
2589		DCW	08500	5	05794	
2590		DCW	15000	5	05799	
2591		DCW	20000	5	05804	
2592		DCW	03500	5	05809	
2593		DCW	01300	5	05814	
2594		DCW	01900	5	05819	
2595		DC	g aMa	1	05820	
2596		DCW	200	3	05823	
2597			556	3	05826	
2598			80C	3	05829	
2599		SBR	INCEX&5	7	05830	G 05891 B
2600		MLNA	SUB,DEVAR	12	05837	D 06330 06335 /
2601		S	INC,IXC	11	05849	S 06238 06243
2602		BZ	MINC	7	05860	J 07074 V
2603		A	INS,SUB	11	05867	A 06248 06330
2604		NCPWH		1	05878	M
2605		B	GOV	7	05879	J 05378
2606		B	0	7	05886	J 00000
2607		MLCA	X73EX9,X13	12	05893	D 05R/6 00089 T
2608		B	CD	7	05905	J 03373
2609		DCW	a0058Pa	5	05916	
2610		DCW	a0082Na	5	05921	
2611		DCW	a0235Pa G	5	05926	
2612		DC	aMa	1	05927	
2613		DCW	a+a	1	05928	
2614		DCW	a0000Na	5	05933	
2615		DCW	a0050Na	5	05938	

CT ADDR INSTRUCTION

PGLIN LABEL OPCOD GPERAND

2616			00C00	5	05943
2617		DCM	20C0012	5	05948
2618		DCM	20CCCC6	5	05953
2619		DCM	20050N2	5	05958
2620			00C00	5	05963
2621		DCM	00C27	5	05968
2622		DCM	20C01L2	5	05973
2623		DCM	20131L2	5	05978
2624		DCM	00C20	5	05983
2625		DCM	02C53	5	05988
2626		DCM	20C00.2	5	05993
2627		DCM	20CCC.2	5	05998
2628			00C00	5	06003
2629		DCM	00053	5	06008
2630		DCM	20CCC.2	5	06013
2631		DCM	20C00.2	5	06018
2632			00C00	5	06023
2633		DCM	26773	5	06028
2634		DCM	20C0002	5	06033
2635		DCM	20060.2	5	06038
2636			00C00	5	06043
2637		DCM	20C0012	5	06048
2638		DCM	20C0002	5	06053
2639		DCM	20C60.2	5	06058
2640			00C00	5	06063
2641		DCM	00031	5	06068
2642		DCM	20C00.2	5	06073
2643		DCM	20C00.2	5	06078
2644		DCM	00C25	5	06083
2645		DCM	C2563	5	06088
2646		DCM	20C00.2	5	06093
2647		DCM	20C00.2	5	06098
2648			00C00	5	06103
2649		DCM	00C63	5	06108
2650		DCM	20C00.2	5	06113

PGLIN	LABEL	GPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2651		DCW	20000.2	5	06118	
2652			00C00	5	06123	
2653		DCW	32C51	5	06128	
2654		DCW	20C01Q2	5	06133	
2655		DCW	20180.2	5	06138	
2656		DCW	20C0C12	5	06143	
2657		DCW	00C18	5	06148	
2658		DCW	20001Q2	5	06153	
2659		DCW	20180.2	5	06158	
2660			00C00	5	06163	
2661		DCW	00C92	5	06168	
2662		DCW	20C00J2	5	06173	
2663		DCW	20C10.2	5	06178	
2664		DCW	00072	5	06183	
2665		DCW	07385	5	06188	
2666		DCW	20C00.2	5	06193	
2667		DCW	20C0C.2	5	06198	
2668			00000	5	06203	
2669		DCW	00185	5	06208	
2670		DCW	20C00.2	5	06213	
2671		DCW	20C00.2	5	06218	
2672		DCW	00C00	5	06223	
2673		DCW	92592	5	06228	
2674		DCW	00200	5	06233	
2675		DCW	00000	5	06238	
2676		DCW	00C00	5	06243	
2677		DCW	00C00	5	06248	
2678		DC	20C.2	1	06249	
2679		SBR	EX25	7	06250	G 06311 B
2680		SCNRR	9999EX13,9999EX13	12	06257	D 09129 09129 Y
2681		S	REUC.DEVAR	11	06269	S 06325 06335
2682		BZ	SCN	7	06280	J 06294 Y
2683		B	SRED	7	06287	J 06269
2684		SCNRR	9999EX12,9999EX12	12	06294	D 09199 09199 Y
2685		B	0	7	06306	J 00000

STORE BAR FOR RETURN

INSTRUCTION

PGLIN	LABEL	CPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2686		DCW	87654321	8	06320	
2687		DCW	00C01	5	06325	
2688		DCW	0C000	5	06330	
2689		DCW	00000	5	06335	
2690		DCW	0C0C0	5	06340	
2691		DCW	00100	5	06345	
2692			2	1	06346	
2693		DCW	0	1	06347	
2694		DCW	321	3	06350	
2695		DCW	103501 7330 200 BPI	6	06356	
2696		DCW	100322 7330 556 BPI	6	06362	
2697		DCW	002163 4 - 6 200 BPI	6	06368	
2698		DCW	0C0784 4 - 6 556 BPI	6	06374	
2699		DCW	0C0535 MCD 6 800 BPI	6	06380	
2700		DCW	003276 2 - 5 200 BPI	6	06386	
2701		DCW	0C0987 2 - 5 556 BPI	6	06392	
2702		DCW	0C0808 MCD 5 800 BPI	6	06398	
2703		DCW	00170 1410 INSTRUCT TIME	5	06403	
2704		DCW	00150 14101 INSTRUCT TIME	5	06408	
2705		DCW	00C50 7010 INSTRUCT TIME	5	06413	
2706		DCW	00C00	5	06418	
2707		DCW	00G00	5	06423	
2708		DCW	00000	5	06428	
2709		DCW	00C00	5	06433	
2710		DCW	00000	5	06438	
2711		DCW	00000	5	06443	
2712		DCW	00000	5	06448	
2713		DCW	0C0C0	5	06453	
2714		DCW	0C000	5	06458	
2715		DCW	00000	5	06463	
2716		DCW	643259871	9	06472	
2717		DCW	00C	3	06475	
2718		DCW	0100	2	06477	
2719		DCW	0 0	1	06478	
2720		DCW	0	1	06479	

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2721		DCM	0 00C00M2	5	06484	
2722		DCM	00C50	5	06489	
2723		DCM	05	2	06491	
2724			000	1	06492	
2725			000	1	06493	
2726			000	1	06494	
2727			000	1	06495	
2728			000	1	06496	
2729			000	1	06497	
2730		DCM	1	1	06498	
2731			3	1	06499	
2732			4	1	06500	
2733		CCM	5	1	06501	
2734		DCM	1	1	06502	
2735		DCM	3	1	06503	
2736		DCM	2	5	06508	
2737		DCM	40C	3	06511	
2738		DCM	00C45	5	06516	
2739		DCM	7	1	06517	
2740		DCM	000	1	06518	
2741		DCM	2JC200 a,G	7	06525	
2742		DCM	WRTEX	5	06531	05702
2743		DCM	CHK1	5	06536	02147
2744		DCM	00C00	5	06541	
2745			0	1	06542	
2746			0	1	06543	
2747			1	1	06544	
2748			6	1	06545	
2749		DCM	2J13XRULM2	8	06553	
2750			000000000	4	06557	
2751		DCM	00C00000000	9	06566	
2752		DCM	00C	3	06569	
2753		DCM	00C	3	06572	
2754		DCM	00C	3	06575	
2755		DCM	00C	3	06578	
2756		DCM	00C	3	06581	

NUMBER OF JIK INST

PGLIN	LABEL	GPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2757		CCW	00C	3	06584	
2758		DCW	00C	3	06587	
2759		DCW	00C	3	06590	
2760		DCW	00C	3	06593	
2761		DCW	00C	3	06596	
2762		DCW	00C00	5	06601	
2763		DCW	00C	3	06604	
2764		SBR	REHEX&5	7	06605	G 06645 B
2765		B	TYPI	7	06612	J 01088
2766		DCW	REWIND FAILED&G	13	06631	
2767		B	STER	7	06633	J 07023
2768		B	0	7	06640	J 00000
2769		DCW	00220	5	06651	
2770		SBR	BSPEX&5	7	06652	G 06689 B
2771		B	TYPI	7	06659	J 01088
2772		DCW	28SP FAILEC&G	10	06675	
2773		B	STER	7	06677	J 07023
2774		B	0	7	06684	J 00000
2775		SBR	SPAEX&5	7	06691	G 06730 B
2776		B	TYPI	7	06698	J 01088
2777		DCW	2SPACE FAILEC&G	12	06716	
2778		B	STER	7	06718	J 07023
2779		B	0	7	06725	J 00000
2780		DCW	2LINE 1DU	50	06781	
2781		B	PG	7	06782	J 04360
2782		H		1	06789	.
2783		CCW	00000	5	06794	
2784		ORG	*EXCO		06800	
2785		DA	1X50,G		06800	
2786			1,2		06801	
2787			5,5		06804	
2788			8,8		06807	
2789			9,9		06808	
2790			12,17		06816	
2791			19,21		06820	

LOW RANGE AVER 3

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2752			25126		05825	
2753		CRG	REFER&27		05827	
2794		DCW	SCREEP IS a	14	05840	
2755		ORG	REFER&51		06851	
2796		DC	a M M P C P G G M a	44	06894	
2797		DC	a M M G G M P G G M a	44	05938	
2758		DC	a M M G G M P G G M a	44	05982	
2799		DC	a M M G G M P G G M a	40	07022	
2800		SBR	STEX&5	7	07023	G 07047 B
2801		BCE	*68,TAC2,1	12	07030	B 07049 01002 I
2802		B	0	7	07042	J 00000
2803		H	STEX	6	07049	. 07042
2804		BCE	699,422,2	12	07055	B 00699 00422 X
2805		B	START	7	07067	J 02000
2806		MLCA	INC,IXC	12	07074	D 06238 06243 T
2807		B	ADIN	7	07086	J 05867
2808		DCW	09972	5	07097	
2809		DCW	00	2	07099	
2810		DCW	SPRERR	5	07104	01827
2811		DCW	SPRINT	5	07109	01686
2812		DCW	EFINIS	5	07114	05165
2813		DCW	6CHK1	5	07119	02147
2814		DCW	EG2	5	07124	05759
2815	PING	DCW	2000002	5	07129	
2816	PAXG	DCW	2000002	5	07134	
2817		CRG	7166		07166	
2818		BAV	GVF	7	07166	J 03391 Z
2819		DCW	2Ja	1	07173	
2820	*					
2821		SBR	MRCW&5	7	07174	G 07286 B
2822		CM	MRSW	6	07181	0 02109
2823		MRCWG	REST,1	12	07187	D 06519 00001 L
2824		MLCWA	MRST&11,MRSW&6	12	07199	D 07198 02115 X
2825		PLCA	ON-1,SYSL&15	12	07211	D 07369 01271 T
2826		BCE	E1,CHN1&2,1	12	07223	B 07290 01291 I

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2827		BCE	F1,CHN2E2,1	12	07235	B 07309 01348 1
2828		BCE	GE,CHN3E2,1	12	07247	B 07328 01405 1
2829		BCE	H1,CHN4E2,1	12	07259	B 07347 01462 1
2830		PRCWG	CALT,CHN1E1	12	07271	D 07371 01290 L
2831		B	0	7	07283	J 00000
2832		MLCS	ON,SYS1E12	12	07290	D 07370 01268 3
2833		B	FT	7	07302	J 07235
2834		MLCS	ON,SYS1E13	12	07309	D 07370 01269 3
2835		B	GT	7	07321	J 07247
2836		MLCS	ON,SYS1E14	12	07328	D 07370 01270 3
2837		B	HT	7	07340	J 07259
2838		MLCS	ON,SYS1E15	12	07347	D 07370 01271 3
2839		B	IT	7	07359	J 07271
2840		DCM	a a	4	07369	
2841		DCM	a1a	1	07370	
2842		SBR	CHSTRES	7	07371	G 01683 B
2843		MLNA	STARAD,SCANE10	12	07378	D 06531 01342 /
2844		SW	25	6	07390	, 00025
2845		S	X1	6	07396	S 00029
2846		A	ONES,X1	11	07402	A 06502 00029
2847		SCNLB	O9999,C	12	07413	D 09999 00000 -
2848		SBR	ADCHLD	7	07425	G 06541 B
2849		A	ONES,ADCHLD	11	07432	A 06502 06541
2850		C	ADCHLD,STOPAD	11	07443	C 06541 06536
2851		BE	CHSTTR	7	07454	J 01678 S
2852		MLNA	ADCHLD,MLCE5	12	07461	D 06541 01397 /
2853		MLCS	O,BCH611	12	07473	D 00000 01415 3
2854		BCE	CHINS,K1,7	12	07485	B 01463 06553 7
2855		BCE		1	07497	B
2856		BCE		1	07498	B
2857		BCE	STINS	6	07499	B 01548
2858		BCE		1	07505	B
2859		BCE		1	07506	B
2860		BCE		1	07507	B
2861		BCE	OLINS	6	07508	B 01579

PGLIN	LABEL	OPCOD	CPERAND	CT	ADDRS	INSTRUCTION
2862	S		CYES,ACDHLC	11	07514	S C6502 06541
2863	MLNA		ACCHLD,SCAN&10	12	07525	D 06541 01342 /
2864	B		SCAN	7	07537	J 01332
2865	MLNA		ACCHLD,MLCX&10	12	07544	D 06541 01485 /
2866	MLCS		CHCODE,0&X1	12	07556	D 06542 000#0 3
2867	NOP			1	07568	N
2868	B		LPCATE	7	07569	J 01433
2869	A		THREES,ACCHLD	11	07576	A 06503 06541
2870	MLNA		ACCHLD,CTD&10	12	07587	D 06541 01528 /
2871	MLNS		YC,0	12	07599	D 06808 00000 1
2872	S		THREES,ACDHLC	11	07611	S 06503 06541
2873	B		LPCATE	7	07622	J 01433
2874	MLNA		ACCHLD,MLCF&10	12	07629	D 06541 01570 /
2875	MLCS		CHSTAT,0	12	07641	D 06543 00000 3
2876	B		LPCATE	7	07653	J 01433
2877	A		SIX,ACCHLD	11	07660	A 06545 06541
2878	MLNA		ACCHLD,MLCC&5	12	07671	D 06541 01607 /
2879	MLCS		C,BCSE&11	12	07683	D 00000 01625 3
2880	BCE		SETOL,K2,1	12	07695	B 01636 06557 1
2881	BCE			1	07707	B
2882	BCE			1	07708	B
2883	BCE			1	07709	B
2884	B		REDUCE	7	07710	J 01660
2885	MLNA		ACCHLD,MLCLE&10	12	07717	D 06541 01658 /
2886	MLCS		BCLOM,C	12	07729	D 06544 00000 3
2887	S		SIX,ACCHLD	11	07741	S 06545 06541
2888	B		LPCATE	7	07752	J 01433
2889	B		C	7	07759	J 00000
2890	DCW		AM&	1	07766	
2891	SBR		PRCW&5	7	07767	G 07288 B
2892	BNQ		ITR	7	07774	J 01019 Q
2893	BCE		MYG,TAD7,1	12	07781	B 07800 01007 1
2894	B		PRCW&7	7	07793	J 07181
2895	MLNA		T258,TYPITAE&8	12	07800	D 07858 01954 /
2896	MLCWS		TYPIT8,TYPITC	12	07812	D 01969 01980 7

PGLIN	LABEL	OPCOD	COPERAND	MLNA	CT	ADDRS	INSTRUCTION
2897		MLNA	T299,TYPIT&IC		12	07824	D 07861 01944 /
2898		CM	202		6	07836	□ 00202
2899		SBR	TYPITB&IC		7	07842	G 01979 B
2900		B	MRCW&7		7	07849	J 07181
2901		CCM	22582		3	07858	
2902		DCM	22592		3	07861	
2903		ORG	9973			09973	
2904		CCM	226		1	09973	
2905		DC	RESBR		5	09978	03645
2906		DC	226		1	09979	
2907		A	ONE,LPTIM		11	09980	A 06498 06475
2908		B	DES		7	09991	J 07166
2909		DCM	226		1	09998	
2910		ORG	BSEX&7			02614	
2911	N	SM	BFI		6	02614	, 02196
2912		CM	BRE,GRED&1		11	02620	□ 02218 05925
2913		CS	332		6	02631	/ 00332
2914		CS	299		6	02637	/ 00299
2915		MLNA	&FINIS,STARAD		12	02643	D 05785 06531 /
2916		MLCA	PTBR,WATE-1		12	02655	D 07005 01706 Y
2917		BBE	TPCUT,TAC6,1		12	02667	W 06852 01006 I
2918		MLNA	H5C,X3		12	02679	D 06511 00039 /
2919		BBE	TR2,SYS1&4,3		12	02691	W 02747 01260 3
2920	MOVJ	MLCWA	JK&6,JK-1 BUILD		12	02703	D 09979 09972 X
2921		SBR	MOVJ&10		7	02715	G 02713 B
2922		S	ONE,X3		11	02722	S 06498 00039
2923		BZ	REPOV		7	02733	J 02760 V
2924		B	MOVJ		7	02740	J 02703
2925	TR2	SM	TRY2&1		6	02747	, 01834
2926		B	MOVJ		7	02753	J 02703
2927	REPOV	MLNA	J9,MCVJ&10		12	02760	D 07097 02713 /
2928		BNQ	ITR		7	02772	J 01019 Q
2929		B	CHK1		7	02779	J 02147
2930	RRR	MLNA	ZERO,X4		12	02786	D 06347 00044 /
2931		BM	RA,IB1		12	02798	V 02916 02371 I

CLEAR STORAGE
CLEAR OUTPUT AREA

TABLE

RESTORE MOVE

INQUIRY

ZERO IX 4

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
2932		MLCA	ZEROS,UNIT&9	12	02810	D 06508 01018 T
2933		MLCA	ZEROS,UNIT&4	12	02822	D 06508 01013 T
2934	IRA	A	ONE,X4	11	02834	A 06498 00044
2935		BAV	RA	7	02845	J 02916 Z
2936		MLNS	X4,SKPE&3	12	02852	D 00044 02874 I
2937		BAI	*&1	7	02864	R 02871 M
2938	SKP	SKP	11	5	02871	U &U1 E
2939		BNR1	IRA	7	02876	R 02834 1
2940		BCB1	SKP	7	02883	R 02871 2
2941		BAI	*&1	7	02890	R 02897 M
2942		MLNS	ZERO,UNIT&X4	12	02897	D 06347 01#09 1
2943		B	IRA	7	02909	J 02834
2944	RA	A	ONE,X4	11	02916	A 06498 00044
2945		BAV	RDF	7	02927	J 03458 Z
2946		BCE	RA,UNIT&X4	12	02934	B 02916 01#09
2947		MLNS	X4,TD	12	02946	D 00044 06808 1
2948		CW	TDLSW	6	02958	D 01488
2949		SW	WL	6	02964	, 05124
2950		B	CHSTT	7	02970	J 01290
2951		CW	WL	6	02977	D 05124
2952		SW	TDUSW	6	02983	, 01488
2953		RWD	11	5	02989	U &U1 R G
2954		BAI	REWER	7	02994	R 06605 M
2955	RTGP	RT	11,REFER	10	03001	M &U1 06800 R
2956		BCB1	*-16	7	03011	R 03001 2
2957		SW	PGP	6	03018	, 05717 G
2958		BAI	RECER	7	03024	R 05116 M
2959	CU	CU	&U1,A	5	03031	U &U1 A
2960		BCB1	CU	7	03036	R 03031 2
2961		CCW	&J&	1	03043	
2962		DC	AA	5	03048	03057
2963			&K&	1	03049	
2964		B	*-13	7	03050	J 03043
2965	AA	MLNS	REFER&3,TL5	12	03057	D C6803 06479 1
2966	LE	LE	TL5,TAB	12	03069	T 06479 06398 2

UPDATE FOR NEXT DRIVE
 ALL DRIVES CHECKED
 MOVE DRIVE NUMBER
 TURN ON ERASE
 CHECK FOR READY
 CHECK FOR BUSY
 TURN OFF I/O INDICATOR
 INDICATE READY
 TRY NEXT
 UPDATE IX 4
 ALL DRIVES CHECKED
 TRY NEXT DRIVE
 SAVE DRIVE NUMBER
 FOR CHAN ALTER ROUTINE
 ALTER PROGRAM
 REWIND
 BRANCH ANY ERRORS
 READ REFERENCE RECORD
 SPACE
 WAIT FOR TI

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	MOVCE5	CORRECTION FACTOR	CT	ADDRS	INSTRUCTION
2967		SBR				7	03081	G 03093 B
2968	POVC	MLNA		00C00,CORF	MOVE IT	12	03088	D 00000 06484 /
2969		A		SYCEX9,CCRF	ADD INST TIME	11	03100	A 06M#3 06484
2970		Sh		REFERE3		6	03111	, 06803
2971		C		TWC,REFERE3	SET UP	11	03117	C 06346 06803
2972		BL		MNG7	FOR	7	03128	J 03186 T
2973		BE		MNG7	GAP	7	03135	J 03186 S
2974		C		FIVE,REFERE3	LIMITS	11	03142	C 06491 06803
2975		BL		MNG4		7	03153	J 03199 T
2976		BE		MNG4		7	03160	J 03199 S
2977		MLNA		HUN1-1,X11	INDICATE MOD 2 LIMITS	12	03167	D 06344 00079 /
2978		B		MNGC		7	03179	J 03211
2979	MNG7	S		X11		6	03186	S 00079
2980		B		MNGC	INDICATE 7330 LIMITS	7	03192	J 03211
2981	MNG4	MLNA		F5-1,X11		12	03199	D 06488 00079 /
2982	MNGC	MLNA		MIGLEX11,MING	MOVE GAP	12	03211	D 05PC5 07129 /
2983		MLNA		MAGLEX11,MAXG	LIMITS	12	03223	D 05PE0 07134 /
2984		NOP				1	03235	N
2985	PSM	B		PS		7	03236	J 05264
2986	P	MLNA		GLCC,RESBR&5		12	03243	D 05790 03650 /
2987		S		X3		6	03255	S 00039
2988		MLCS		GRP,*E12		12	03261	D 06801 03284 3
2989		BCE		CP,GI,1	BRANCH IF GRP 1	12	03273	B 04616 06472 1
2990		BCE		C	BRANCH IF GRP 7	6	03285	B 04674
2991		BCE		T	BRANCH IF GRP 8	6	03291	B 04694
2992		BCE		Y	BRANCH IF GRP 9	6	03297	B 04713
2993		BCE		BC5	BRANCH IF GRP 5	6	03303	B 04603
2994		BCE		R	BRANCH IF GRP 2	6	03309	B 04622
2995		BCE			BRANCH IF GRP 3	1	03315	B
2996		BCE			BRANCH IF GRP 4	1	03316	B
2997		BCE			BRANCH IF GRP 6	1	03317	B
2998	LRD	B		PSM	PRINT SUMMARY	7	03318	J 04374
2999		BBE		CKNEG,CPI,6	CHECK FOR	12	03325	W 03465 06794 6
3000	MPS	MLCA		NEG,CPG-1	POS CR NEG	12	03337	D 01231 06839 T
3001	MCS	MLCA		CPG,225	CREEP	12	03349	D 06840 00225 T

IRG TEST FOR 1410/701C SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3002		PLCHA	FIELD,232	12	03361	D 05633 00232 X
3003		MCE	CPI,232	11	03373	E 06794 00232
3004		B	PRINT	7	03384	J 01686
3005	CVF	SW	PSH,PGP	11	03391	, 03236 05717
3006		CW	GREDEL,GRPT&I	11	03402	□ 05925 05891 G
3007		BAI	*&I	7	03413	R 03420 M
3008		RWD	11	5	03420	U 2U1 R
3009		BCB1	OVF	7	03425	R 03391 2 G
3010		BAI	REMER	7	03432	R 06605 M
3011		BCE	RDF,X4,9	12	03439	B 03458 00044 9
3012		B	RA	7	03451	J 02916
3013		B	CWT	7	03458	J 02538
3014	RDF	BBE	MPS,CPI,B S	12	03465	W 03337 06794 B
3015	CKNEG	MLCA	POS,CPG-1	12	03477	D 01995 06839 T
3016		B	MCS	7	03489	J 03349
3018		* READ GAP SECTION				
3019		•				
3020	Z	MLNA	ELC,RESBR&S	12	03496	D 05790 03650 /
3021		S	X3	6	03508	S 00039
3022		S	LPTIM	6	03514	S 06475
3023		BAV	*&I	7	03520	J 03527 Z
3024		S	TOTAL	6	03527	S 05683
3025		B	RTAR	7	03533	J 03583 G
3026	EE	BAI	*&I	7	03540	R 03547 M
3027		RT	11,REFER	10	03547	M 2U1 06800 R
3028		BCB1	*-16	7	03557	R 03547 2 G
3029		BAI	RECER	7	03564	R 05116 M
3030	DCU	CU	2U1,A	5	03571	U 2U1 A
3031		BCB1	DCU	7	03576	R 03571 2 G
3032	RTAR	BAI	*&I	7	03583	R 03590 M
3033		SKP	11	5	03590	U 2U1 E G
3034		BAI	*-11	7	03595	R 03590 M
3035		DCW	2J2	1	03602	
3036		DC	RTAR	5	03607	03583
3037		DC	2K2	1	03608	

BRANCH IF LAST DRIVE

TRY NEXT ONE

TRY NEXT CHAN

ZERO TOTAL

TO READ TAPE

READ REFERENCE RECORD

TURN ON ERASE

CHECK FOR BUSY

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCODE	OPERAND	CT	ADDRS	INSTRUCTION
3038		RT	11,REFER	10	03609	M 3U1 06800 R
3039		BAL	RECER	7	03619	R 05116 M
3040		CU	3U1,A	5	03626	U 3U1 A
3041		BCB1	*-11	7	03631	R 03626 2
3042		B	SJK	7	03638	J 07173
3043	*					
3044	* AREA TO SAVE GAP TIMES					
3045	*					
3046	RESBR	SBR	LOC	7	03645	G 06418 B
3047	LPT	MLNA	LPTIM,LPTA&X3	12	03652	D 06475 065F9 /
3048		BAL	*61	7	03664	R 03671 M
3049		S	LPTIM	6	03671	S 06475
3050		A	FIVE,RESBR&5	11	03677	A 06491 03650
3051		A	THRE,X3	11	03688	A 06499 00039
3052		A	CNE,DG	11	03699	A 06498 05636
3053		BCE	CRP,GRP,9	12	03710	B 04855 06801 9
3054		A	CNE,GAP	11	03722	A 06498 06804
3055		BAV	*68	7	03733	J 03747 Z
3056		B	RTAR	7	03740	J 03583
3057	CUA	RT	11,JUNK	10	03747	M 3U1 01996 R
3058		BCB1	CUA	7	03757	R 03747 2
3059		BEFL	FIC	7	03764	R 03778 8
3060		BAL	RECER	7	03771	R 05116 M
3061	FID	BAL	*61	7	03778	R 03785 M
3062		S	X15	6	03785	S 00099
3063		S	X3	6	03791	S 00039
3064	ST	S	6SJK,LOC&X15	11	03797	S 05795 06DA8
3065		MLNA	LOC&X15,HDAR	12	03808	D 06DA8 05643 /
3066		MLNA	LPTA&X3,INSTA-6	12	03820	D 065F9 06560 /
3067		C	SEVN,HDAR-4	11	03832	X 06517 05639
3068		MLNA	HDAR-2,MAR-6	12	03843	D 05641 05650 /
3069		M	INST&X9,MAR	11	03855	@ 050W2 05656
3070		M	TIM&X9,INSTA	11	03866	@ 01JW8 06566
3071		SW	INSTA-4	6	03877	* 06562
3072		A	INSTA,MAR-1	11	03883	A 06566 05655

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3073		CW	INSTA-4	6	03894	□ 06562
3074		A	CORF,MAR-1	11	03900	A 06484 05655
3075		MLNB	MAR-1,TOT&X15	12	03911	D 05655 01AH3 J
3076		B	CLR	7	03923	J 03937
3077		B	CFF	7	03930	J 04005
3078	CLR	SBR	CLX&S	7	03937	G 04003 B
3079		MLZB	REFER&48,FCAR-1	12	03944	D 06848 05642 K
3080		MLZB	REFER&48,MAR-1	12	03956	D 06848 05655 K
3081		MLZB	REFER&48,INSTA-1	12	03968	D 06848 06565 K
3082		S	INSTA	6	03980	S 06566
3083		S	HDAR	6	03986	S 05643
3084		S	MAR	6	03992	S 05656
3085	CLX	B	O	7	03998	J 00000
3086	CFF	C	FF,X15	11	04005	C 06516 00099
3087		BE	GN	7	04016	J 04052 S
3088		A	FIVE,X15	11	04023	A 06491 00099
3089		A	THRE,X3	11	04034	A 06499 00039
3090		B	ST	7	04045	J 03797
3091	GN	B	FIMI	7	04052	J 04066
3092		B	TAX	7	04059	J 04269
3093	FIMI	SBR	FINX&S	7	04066	G 04267 B
3094		MLNA	&LDC,RESBR&S	12	04073	D 05790 03650 /
3095		S	X15	6	04085	S 00099
3096		S	X3	6	04091	S 00039
3097	SC	C	TOT&X15,PING	11	04097	C 01AH3 07129
3098		BF	GPER	7	04108	J 05685 U
3099		C	TOT&X15,PAXG	11	04115	C 01AH3 07134
3100		BL	GPER	7	04126	J 05685 T
3101		C	MIN,TOT&X15	11	04133	C 07016 01AH3
3102		BL	LER	7	04144	J 04224 T
3103	CM	C	MAX,TOT&X15	11	04151	C 07021 01AH3
3104		BF	HER	7	04162	J 04243 U
3105	GRA	NOP		1	04169	N
3106		B	GRAPH	7	04170	J 05801
3107	AG	A	TOT&X15,TOTAL	11	04177	A 01AH3 05683

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3108		C	FF,X15	11	04188	C 06516 00099
3109		BE	GRPT	7	04199	J 05890 S
3110		A	FIVE,X15	11	04206	A 06491 00099
3111		B	SC	7	04217	J 04097
3112	LER	MLNA	TOT&X15,MIN	12	04224	D 01AH3 07016 /
3113		B	CM	7	04236	J 04151
3114	HER	MLNA	TOT&X15,MAX	12	04243	D 01AH3 07021 /
3115		B	GRA	7	04255	J 04169
3116	FIMX	B	O	7	04262	J 00000
3117	TAX	BBE	PRGP1,1004,1	12	04269	W 06782 01004 1
3118		A	ONE,SET	11	04281	A 06498 06825
3119		C	TEN,SET	11	04292	C 06477 06825
3120		BE	MG	7	04303	J 04360 S
3121		BCE	S5,GRP,8	12	04310	B 04341 06801 8
3122		BCE	MG,GRP,7	12	04322	B 04360 06801 7
3123		B	EE	7	04334	J 03540
3124	S5	BCE	MG,SET,5	12	04341	B 04360 06825 5
3125		B	EE	7	04353	J 03540
3126	MG	B	PSM	7	04360	J 04374
3127		B	RTGP	7	04367	J 03001
3128	PSM	SBR	PSMX&5	7	04374	G 04601 B
3129		S	MIN,MAX	11	04381	S 07016 07021
3130		D	DG,TOTAL-6	11	04392	Z 05636 05677
3131		MLCWA	FIELD,250	12	04403	D 05633 00250 X
3132		MLCWA		1	04415	D
3133		MLCWA		1	04416	D
3134		SW	TOTAL-8	6	04417	, 05675
3135		MCE	TOTAL-5,250	11	04423	E 05678 00250
3136		NOPWM		1	04434	N
3137	SWC	MLCA	TOTAL-5,CPI	12	04435	D 05678 06794 Y
3138		NOPWM		1	04447	N
3139	SWS	S	TOTAL-5,CPI	11	04448	S 05678 06794
3140		CW	SWC,SWS	11	04459	□ 04435 04448
3141		CW	TOTAL-8	6	04470	□ 05675
3142		MCE	MAX-1,244	11	04476	E 07020 00244

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3143		MCE	MIN-1,238	11	04487	E 07015 00238
3144		PLNS	GRP,TLG	12	04498	D 06801 05345 I
3145		LE	TLG,TAG	12	04510	T 05345 05615 2
3146		SBR	MOVGE5	7	04522	G 04534 B
3147	POVG	MLCA	0,230	12	04529	D 00000 00230 T
3148		B	PRINT	7	04541	J 01686
3149		S	SET	6	04548	S 06825
3150		MLZB	REFER&48,TCTAL-1	12	04554	D 06848 05682 K
3151		S	TOTAL	6	04566	S 05683
3152		S	MAX	6	04572	S 07021
3153		S	DG	6	04578	S 05636
3154		MLNA	E99599,MIN	12	04584	D 05800 07016 /
3155		PSMX	0	7	04596	J 00000
3156	*					
3157	* PRINT HEADING					
3158	*					
3159	BC5	SW	WL	6	04603	, 05124
3160		B	Z	7	04609	J 03496
3161	CP	SW	SWC	6	04616	, 04435
3162	R	NCP		1	04622	N
3163		CW	WL	6	04623	□ 05124
3164		MLNS	FOURER,FF	12	04629	D 06501 06516 I
3165		MLNS		1	04641	D
3166	EZ	B	Z	7	04642	J 03496
3167		C	TEN,SET	11	04649	C 06477 06825
3168		BU	BZ	7	04660	J 04642 /
3169		B	MG	7	04667	J 04360
3170	C	MLNS	ZERC,FF	12	04674	D 06347 06516 I
3171		PLNS		1	04686	D
3172	S	B	Z	7	04687	J 03496
3173	T	SW	SWS	6	04694	, 04448
3174		CW	PGP	6	04700	□ 05717
3175		B	Z	7	04706	J 03496
3176	Y	S	X3	6	04713	S 00039 G
3177		BA1	•E1	7	04719	R 04726 H

IRG TEST FOR 1410/7C1C SYSTEMS

CT ADDR INSTRUCTION

OPCOD OPERAND

LABEL

PGLIN

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDR	INSTRUCTION
3178		CM	PGP	6	04726	05717
3179		B	YK	7	04732	J 04796
3180	CRT	RT	11,REFER	10	04739	M 2U1 06800 R
3181		BCB1	*-16	7	04749	R 04739 2
3182		BAI	RECEP	7	04756	R 05116 M
3183		CU	2U1,A	5	04763	U 2U1 A
3184		BCB1	*-11	7	04768	R 04763 2
3185		BAI	SPAER	7	04775	R 06691 M
3186	YS	DCW	2J2	1	04782	
3187		DC	YK	5	04787	04796
3188		CC	2K2	1	04788	
3189		B	YS	7	04789	J 04782
3190	YK	CU	2U1,A	5	04796	U 2U1 A
3191		BCB1	YK	7	04801	R 04796 2
3192	YI	DCW	2J2	1	04808	
3193		DC	JB	5	04813	04822
3194		DC	2K2	1	04814	
3195		B	YI	7	04815	J 04808
3196	JB	BAI	SPAER	7	04822	R 06691 M
3197		B	BSP	7	04829	J 02581
3198		CU	2U1,A	5	04836	U 2U1 A
3199		BCB1	*-11	7	04841	R 04836 2
3200		B	SJK	7	04848	J 07173
3201	*****					
3202	CRP	NCP				
3203		A	ONE,JCP	1	04855	N
3204		BAV	*EB	11	04856	A 06498 05684
3205		B	YK	7	04867	J 04881 Z
3206		S	X15	7	04874	J 04796
3207		S	X3	6	04881	S 00099
3208	STC	S	2SJK,LCCX15	6	04887	S 00039
3209		MLNA	LCCX15,FDAR	11	04893	S 05795 06DA8
3210		MLNA	LPTAEX3,INSTA-6	12	04904	D 06DA8 05643 /
3211		C	SEVN,HCAR-4	12	04916	D 065F9 06560 /
3212		MLNA	HDAR-2,MAR-6	11	04928	X 06517 05639
				12	04939	D 05641 05650 /

TO BACKSPACE ROUTINE

ZERO IX 15
AND IX 3

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3213		M	INST&X9,PAR	11	04951	@ 050W2 05656
3214		M	TIP&X9,INSTA	11	04962	@ 01JW8 06566
3215		Sh	INSTA-4	6	04973	, 06562
3216		A	INSTA,MAR-1	11	04979	A 06566 05655
3217		CW	INSTA-4	6	04990	▣ 06562
3218		A	CORF,MAR-1	11	04996	A 06484 05655
3219		PLNG	MAR-1,TOT&X15	12	05007	D 05655 01AH3 J
3220		B	CLR	7	05019	J 03937
3221		C	FF,X15	11	05026	C 06516 00099
3222		BE	GNC	7	05037	J 05073 S
3223		A	FIVE,X15	11	05044	A 06491 00099
3224		A	THRE,X3	11	05055	A 06499 00039
3225		B	STC	7	05066	J 04893
3226	GNC	B	FIMI	7	05073	J 04066
3227		A	ONE,SET	11	05080	A 06498 06825
3228		C	TEN,SET	11	05091	C 06477 06825
3229		BE	LRD	7	05102	J 03318 S
3230		B	CRT	7	05109	J 04739
3231	RECER	SBR	REDEXS	7	05116	G 05163 B
3232		NOP		1	05123	N
3233	WL	BWL1	REDEX	7	05124	R 05158 -
3234		B	WRONG LENGTH OK	7	05131	J 01088
3235		CCW	@ READ FAILED@,G	12	05149	
3236		B	STER	7	05151	J 07023
3237	REDEX	B	O	7	05158	J 00000
3238	FINIS	B	TYPI	7	05165	J 01088
3239		DCW	@TC22 PASS@,G	9	05180	
3240		BCE	20C0,TAC3,1	12	05182	B 02000 01003 1
3241		NCPWH	BRANCH IF REPEAT PROGRAM	1	05194	N
3242	TPEND	B	WTND	7	05195	J 06933
3243		CW	34,44	11	05202	▣ 00034 00044
3244		CW	68,73	11	05213	▣ 00068 00073
3245		CW	90,95	11	05224	▣ 00090 00095
3246		CW	25,35	11	05235	▣ 00025 00035
3247		CW	80,85	11	05246	▣ 00080 00085

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3248		B	NEXI	7	05257	J 00400
3249	PS	SBR	PSX&5	7	05264	G 05343 B
3250		BAI	*&I	7	05271	R 05278 M
3251		CC	I	2	05278	F I
3252		BAI	*&I	7	05280	R 05287 M
3253		CW	GREDE&1,GRPT&1	11	05287	□ 05925 05891
3254		MLCA	REFER&21,HEAD-24	12	05298	D 06821 06757 T
3255		MLCA		1	05310	D
3256		MLCA		1	05311	D
3257		MLCA		1	05312	D
3258		MLCA	HEAD,251 MOVE HEADING	12	05313	D 06781 00251 T
3259		B	PRINT	7	05325	J 01686
3260		CW	PSW	6	05332	□ 03236
3261	PSX	B	C	7	05338	J 00000
3262	TLG	DCW	O	1	05345	
3263		DCW	□ 1 FIXED GO DOWN 5 SEC 7□	30	05375	
3264		DCW	□ 2 VAR GO DOWN 10 - 400 MIL4□	30	05405	
3265		DCW	□ 4 VAR GO DOWN 01 - 05 MIL2□	30	05435	
3266		DCW	□ 3 VAR GO DOWN 05 - 10 MIL3□	30	05465	
3267		DCW	□ 5 MIN GO DOWN 000 MIL1□	30	05495	
3268		DCW	□ 6 FIXED GO DOWN-GO UP 10 MIL6□	30	05525	
3269		DCW	□ 7 VAR GO UP-FIXED GO DOWN 5□	30	05555	
3270		DCW	□ 8 WRT - BSP - MTM 8□	30	05585	
3271	TAG	DCW	□ 9 RD - BSP - SPACE 9□	30	05615	
3272		DCW	□ . 0□	6	05621	
3273		DCW	□ . 0□	6	05627	
3274	FIELD	DCW	□ . 0□	6	05633	
3275	EG	DCW	000	3	05636	
3276	HDAR	DCW	□00000□□,6	7	05643	
3277	MAR	DCW	□0000000000□□,6	12	05656	
3278	INST	DCW	□0036M□	5	05662	
3279		DCW	□0032M□	5	05667	
3280		DCW	□0012M□	5	05672	
3281	TOTAL	DCW	□0000000000M□	11	05683	
3282	JCP	DCW	0	1	05684	
3283	GPFR	SBR	GPEX&5	7	05685	G 05729 B

PGLIN	LABEL	CPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3284		BEE	GPEX,IAD5,1	12	05692	W 05724 01005 1
3285		MLNA	TOTEX15,21C	12	05704	D 01AH3 00210 /
3286		NCP		1	05716	N
3287	PGP	B	PRINT	7	05717	J 01686
3288	GPEX	B	0	7	05724	J 00000
3289	MIGL	DCW	2ASC00E 7330 MIN	5	05735	
3290		DCW	06150 MOD 4-6 MIN	5	05740	
3291		DCW	09200 MOD 2-5 MIN	5	05745	
3292	MAGL	DCW	24300 7330 MAX	5	05750	
3293		DCW	08200 MOD 4-6 MAX	5	05755	
3294		DCW	2A2100E MOD 2 - 5 MAX	5	05760	
3295		LTORG	MAGL&11		05761	
3295			PRERR	5	05765	01827
3295			PRINT	5	05770	01686
3295			CHK1	5	05775	02147
3295			WRTEX	5	05780	05702
3295			FINIS	5	05785	05165
3295			LOC	5	05790	06418
3295			SJK	5	05795	07173
3295			E95999	5	05800	
3296	GRAPH	SBR	GREX&5	7	05801	G 05888 B
3297		MLNS	GRP,*E12	12	05808	D 06801 05831 1
3298		BCE	GREX,G6,9	12	05820	B 05924 05984 9
3299		BCE	GREX	6	05832	B 05883
3300		BCE		1	05838	B
3301		BCE		1	05839	B
3302		LEH	TOTEX15,GRTAB LOOK UP POSITION	12	05840	T 01AH3 06338 6
3303		SBR	GRP&5	7	05852	G 05864 B
3304	GRM	MLNA	0,X8	12	05859	D 00000 00064 /
3305		MLCS	ASTERK,00260CX8	12	05871	D 06991 00K60 3
3306	GREX	B	0	7	05883	J 00000
3307	GRPT	NOPWM		1	05890	N
3308		B	FIMX	7	05891	J 04262
3309		MLCS	XCHAN,00259	12	05898	D 06495 00259 3
3310	GRPG	B	PRINT	7	05910	J 01686

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3311		B	FIMX	7	05917	J 04262
3312	GRED	NCPWM		1	05924	N
3313		B	GREX	7	05925	J 05883
3314		SW	GREDEL,CRPT&I	11	05932	05925 05891
3315		MLCA	GRAD,290	12	05943	D 06014 00290 T
3316		B	PRINT	7	05955	J 01686
3317		MLCA	GRAD1,290	12	05962	D 06044 00290 T
3318		B	GREX	7	05974	J 05883
3319	G6	DCW	8556	4	05984	
3320	GRAD	DCW	2 X X X X X X X	30	06014	
3321	GRAD1	CCW	HIGH	30	06044	
3322		CCW	0124300	7	06051	
3323		DCW	0324026	7	06058	
3324		DCW	0523655	7	06065	
3325		CCW	0723284	7	06072	
3326		CCW	0922813	7	06079	
3327		DCW	1122442	7	06086	
3328		CCW	1322071	7	06093	
3329		CCW	1521700	7	06100	
3330		CCW	1721265	7	06107	
3331		DCW	1920832	7	06114	
3332		CCW	2120399	7	06121	
3333		DCW	2319966	7	06128	
3334		DCW	2519533	7	06135	
3335		DCW	2719100	7	06142	
3336		CCW	0112100	7	06149	
3337		CCW	0311865	7	06156	
3338		DCW	0511634	7	06163	
3339		DCW	0711403	7	06170	
3340		CCW	0911172	7	06177	
3341		CCW	1110941	7	06184	
3342		DCW	1310710	7	06191	
3343		CCW	1510490	7	06198	
3344		CCW	1710275	7	06205	
3345		CCW	1910060	7	06212	

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3346		DCW	21C9845	7	06219	
3347		DCW	2309630	7	06226	
3348		DCW	2509415	7	06233	
3349		DCW	27C9200	7	06240	
3350		DCW	01C82C0	7	06247	
3351		DCW	0308055	7	06254	
3352		DCW	0507885	7	06261	
3353		DCW	07C7715	7	06268	
3354		DCW	09C7545	7	06275	
3355		DCW	11C7375	7	06282	
3356		DCW	1307205	7	06289	
3357		DCW	1507056	7	06296	
3358		DCW	17C6905	7	06303	
3359		DCW	19C6754	7	06310	
3360		DCW	21C6603	7	06317	
3361		DCW	23C6452	7	06324	
3362		DCW	25C6301	7	06331	
3363	GRTAB	DCW	27C6150	7	06338	
3364		ORC	REFER&52		06852	
3365	TPOUT	SBR	TPEX&5	7	06852	G 06888 B
3366		MLCA	TPBR,WATE-1	12	06859	D 06998 01706 T
3367		SW	TPEND	6	06871	0 05195
3368		H	TPEX	6	06877	0 06883
3369	TPEX	B	0	7	06883	J 00000
3370	WRTP	WT	10,201	10	06890	M &UO 00201 M
3371		BCB1	WRTP	7	06900	R 06890 Z
3372		BAL	WRPX	7	06907	R 06927 M
3373		CS	299	6	06914	/ 00299
3374		B	PREXT	7	06920	J 01771
3375	WRPX	H	WRTP	6	06927	0 06890
3376	WTND	SBR	WTX&5	7	06933	G 06989 B
3377		WTM	10	5	06940	U &UO M
3378		BCB1	--11	7	06945	R 06940 Z
3379		BAL	*&1	7	06952	R 06959 M
3380		RWD	10	5	06959	U &UO R

IRG TEST FOR 1410/7010 SYSTEMS

PGLIN	LABEL	OPCOD	OPERAND	CT	ADDRS	INSTRUCTION
3381		BCBI	*-11	7	06964	R 06959 2
3382		BAI	*E1	7	06971	R 06978 M
3383		H	*E1	6	06978	. 06984
3384	WTX	B	0	7	06984	J 00000
3385	ASTERK	DCW	2*2	1	06991	
3386		CCW	2Ja	1	06992	
3387		DC	WRTP	5	06997	06890
3388	TPBR	CC	2 2	1	06998	
3389		CCW	2Ja	1	06999	
3390		CC	OVFLO	5	07004	01778
3391	PTBR	DC	222	1	07005	
3392		H		1	07006	.
3393	AVER	DCW	200002	5	07011	
3394	MIN	DCW	95599	5	07016	
3395	MAX	DCW	200002	5	07021	
3396		END	2000			J02000

END OF ASSEMBLY

1.5 SHOULD RECEIVE P. M.

LINE 9. 5 SEC GO-DOWN

THESE VALUES ARE OBTAINED FROM GAPS PRODUCED BY WRITE, DELAY 5 SECONDS, WRITE A TAPE MARK. THE TEST IS SET TO WRITE 10 GAPS. REFER TO SECTION D (PROGRAM CONTROL) FOR ALTERING THE NUMBER OF GAPS AND/OR THE GO-DOWN TIME.

A MINIMUM GAP OF LESS THAN 9.2 MILLISECONDS FOR A 729-2 OR 6.1 MILLISECONDS FOR A 729-4 INDICATE CONDITIONS THAT CAUSE COUNT-OF-5 PROBLEMS.

LINE 10. 1 BK-SP WRITES (GROUP 8)

THESE VALUES ARE OBTAINED FROM GAPS PRODUCED BY WRITE, WRITE A VARIABLE RECORD, BACKSPACE, WRITE A TAPE MARK. THE PROGRAM IS SET TO BACKSPACE 1 TIME. 100 GAPS ARE FORMED WITHIN THE GROUP. REFER TO SECTION D (PROGRAM CONTROL) FOR ALTERING THE NUMBER OF GAPS AND/OR THE NUMBER OF BACKSPACES.

THE GAPS OF THIS GROUP WHEN COMPARED WITH THOSE OF LINE 8 INDICATE THE AMOUNT OF CREEP IN THE BACKSPACE WRITE OPERATION.

SUBTRACT THE AVERAGE VALUE FOR LINE 8 FROM THAT FOR LINE 10 TO DETERMINE THE AVERAGE CREEP. A LARGE RANGE FOR LINE 10 INDICATES INTERMITTENT BACKSPACE PROBLEMS. CREEP MUST ALWAYS BE POSITIVE.

	729-2	729-4
MINIMUM	0.7 MS	0.4 MS
MAXIMUM	2.7 MS	1.8 MS

LINE 11. BK-SP READ (GROUP 9)

THESE FIGURES ARE OBTAINED FROM 100 BACKSPACE READS OVER VARIABLE LENGTH RECORDS. THE VALUES PRINTED IS THE TIME REQUIRED TO READ FORWARD TO THE FIRST CHARACTER OF THE RECORD AFTER BACKSPACING. IT CAN BE SEEN FROM SEVERAL TAPE UNITS THAT THE LARGER THE VALUES, THE SMALLER THE FORWARD CREEP. THIS IS BECAUSE THEY BOTH DEPEND ON BACKWARD STOP PLUS FORWARD START TIME.

THE IMPORTANT VALUE IN THIS LINE IS THE RANGE. AN INTERMITTENT BACKSPACE TROUBLE MAY SHOW HERE BEFORE SHOWING ANY PLACE ELSE. THE RANGE SHOULD NOT BE 0.6 MILLISECOND LARGER THAN IN LINE 8 (10 MS GO-DOWN).

G. USE OF THE PROGRAM.

RUN THE PROGRAM EACH WEEK OR AT LEAST EVERY TWO WEEKS TO DETERMINE WHETHER ANY TAPE UNITS REQUIRE PREVENTIVE MAINTENANCE. ALSO, USE THIS PROGRAM WHEN TAPE MOTION TROUBLE IS SUSPECTED.

THE PROGRAM INDICATES AND PREDICTS THE NEED FOR PREVENTIVE MAINTENANCE. IT SHOULD NOT BE USED AS A TOOL BUT AS A GUIDE. THE PROGRAM HAS THREE MAIN APPLICATIONS:

DATE							
ENG. CHG. NO.							

IBM 1410 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

- IT INDICATES WHEN A TAPE UNIT NEEDS PREVENTIVE OR CORRECTIVE MAINTENANCE. RUN THE PROGRAM DURING SCHEDULED MAINTENANCE PERIODS. SAVE THE PRINTOUTS FOR COMPARISON AGAINST EACH NEW PRINTOUT FOR THAT DRIVE. THE PRINTOUT WILL RARELY BE EXACTLY THE SAME FROM WEEK TO WEEK. A SUBSTANTIAL CHANGE INDICATES THAT THE CONDITION OF THE DRIVE HAS DETERIORATED.

THE FIGURES GIVEN IN SECTION F (PRINTED RESULTS) WILL AID IN DETERMINING WHAT IS A SUBSTANTIAL CHANGE, BUT, AS A DRIVE GENERATES A HISTORY OF PRINTOUTS, IT CAN BE PREDICTED AS TO WHAT TO EXPECT FROM THE TAPE UNITS ON THE SYSTEM.

THE TAPE TRANSPORT AREA SHOULD BE THOROUGHLY CLEANED BEFORE RUNNING THE TEST TO OBTAIN THE SAME STARTING POINT EACH TIME.

- RUN THE TEST IF THE CUSTOMER IS HAVING TROUBLE THAT IS SUSPECTED TO BE A TAPE MOTION PROBLEM.

DO NOT CLEAN THE TAPE TRANSPORT AREA. KEEP THE CONDITIONS THE SAME. CLEANING THE TAPE TRANSPORT MAY TEMPORARILY CORRECT THE TROUBLE, BUT CLEANING IS NOT A PERMANENT FIX. WHEN THE TROUBLE IS IN THE TAPE TRANSPORT AREA, CORRECT IT BY ADJUSTING THE TAPE DRIVE. GLAZED CAPSTANS AGGRAVATE A COUNT-5 CONDITION.

- DURING THE INSTALLATION PERIOD IT INDICATES WHEN A DRIVE CAN BE CONSIDERED INSTALLED.

THE EXAMPLE VALUES GIVEN IN SECTION F SHOULD BE USEFUL AS A STARTING POINT. COMPARING ONE DRIVE TO THE OTHERS ON THE SAME CHANNEL WILL HELP TO DETERMINE WHEN A DRIVE IS BAD. FOR EXAMPLE, 4 DRIVES OUT 5 HAVE A RANGE OF 1.2 MILLISECONDS. THE 5TH DRIVE HAS A RANGE OF 2.1. THERE IS SOME REASON FOR THIS DRIVE TO STAND OUT. A SIMILAR COMPARISON CAN BE MADE FOR ALL VALUES PRINTED.

DATE								
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