

9M01B

MAIN FRAME DIAGNOSTIC AND RELIABILITY TEST

A. UNIT TESTED - 709 CPU

1. Purpose of Test

- (a) Examine fixed-point and logical arithmetic, word transmission, shifting, control, and logical operations.
- (b) This program (9M01B) contains some routine modifications and additions to 9M01A.

2. Method of Test

- (a) The program is divided in two parts under Sense Switch 5 Control.
- (b) This test employs a short version of 9DEPR which will interrogate sense switches and print a detailed account of error indications.
- (c) Refer to Sense Switch Control Section C-2 for an explanation of Program Operation and Control.

B. MACHINE UNITS AND STORAGE AREA

1. Units required

MF, CF, DSU, CR, PR

2. Storage locations

00030-07767

C. PROGRAM CONTROL

1. Deck

000	9LDO1 Low End Loader
001 - 184	Program Cards and Short Version 9DEPR
185	Transfer Card TRA 00030
186 - 187	2 Blank Cards

2. Sense Switch Control

Switch 1 UP	Test Switch 4
Switch 1 DOWN	Repeat Routine
Switch 2 UP	Indicate Errors
Switch 2 DOWN	Bypass Errors
Switch 3 UP	Print errors if Switch 2 is UP
Switch 3 DOWN	Halt on error if Switch 2 is UP
Switch 4 UP	Proceed to next Routine
Switch 4 DOWN	Loop in Routine 50 times octal and then proceed to next Routine
Switch 5 UP	Bypass long adder test and testing all instructions requiring stops to determine proper execution
Switch 5 DOWN	Perform long adder test and testing all instructions requiring stops to determine proper execution
Switch 6 UP	Call in next diagnostic
Switch 6 DOWN	Repeat test note program prints out "100 Program Passes Complete 9M01" every 100 passes if switch 3 is UP.

D. NORMAL STOPS

06350 DVH Test
06360 DVH Test
06371 DVH Test
06403 VDH Test
06427 ENK Teat - Enter ones in keys
06441 ENK Test - Enter zeros in keys

E. ERROR STOPS

00035 Error in TSX inetruction
00037 Error in TSX instruction
07065 Error in Program with Switch 3 DOWN
or
07103 Display XRC for location of error-XRC has 2-s complement of
error address

F. PRINTOUTS

1. Program identification is printed out before starting the test if Switch 3 is UP.
2. Program prints "100 Program Passes Complete 9M01" if Switch 3 is UP and Switch 6 is DOWN,
3. In an error printout, test LOC is Routine in Error, OPN is Instruction Being Tested and error ADR is Section of Routine in Error.
4. Sample of the printout follows the write-ups.
5. Consult the write-up for 9DEPR for a detailed account of the diagnostic print subroutine.

G. COMMENTS

1. With Switch 5 depressed, the halt tests and the long adder tests are performed on the initial pass, On succeeding passes, the halt tests are bypassed.
2. Prior to checking the contents of index registers after performing the STR instruction and Switch 3 is UP, any error encountered will alter the value 077707 octal initially placed in XRC.
3. The decrement portion of location 07701 contains the 2's complement of the last test address performed correctly.
4. Although indexing has not been checked, it has been used sparingly because of space limitation in a 4K storage.
5. The optional use of XRA is a feature of the convert instructions and is checked in this test. Since indexing has not been tested in 9M01, the C. E, should investigate the correct operation of index registers with any error in the CVR, CAQ or CRQ Routines where an instruction is tagged with XRA.
6. It is possible for the program to appear to be operating error free although the machine is actually malfunctioning. To detect this case, Sense Switch 3 must be UP and Sense Swltch 6 DOWN. Under these conditions, the printer must print "100 Program Passes Complete 9M01". Failure of the printout may indicate that E and I Time are coming up simultaneously in convert instructions.
7. The Release of 9M01B makes 9M01A cbsdete.

	LOCATIONS OF TE8T8	
1. CURSORY TSX	BEGINS AT	00034
2. TOV	BEGINS AT	00041
3. TNO	BEGINS AT	00066
4. TZE	BEGINS AT	00112
5. TNZ	BEGINS AT	00135
6. ALS	BEGINS AT	00152
7. ARS	BEGINS AT	00213
8. LBT	BEGINS AT	00253
9. PBT	BEGINS AT	00270
10. TPL	BEGINS AT	00307
11. TMI	BEGINS AT	00324
12. CLM	BEGINS AT	00341
13. SSP	BEGINS AT	00375
14. SSM	BEGINS AT	00413
15. CHS	BEGINS AT	00431
16. LLS	BEGINS AT	00447
17. LRS	BEGINS AT	00543
18. LGL	BEGINS AT	00632
19. RQL	BEGINS AT	00722
20. TBP	BEGINS AT	01002
21. NOP	BEGINS AT	01017
22. COM	BEGINS AT	01025
23. ADD	BEGINS AT	01064
24. ADM	BEGINS AT	01246
25. SUB	BEGINS AT	01312
26. SBM	BEGINS AT	01463
27. CLA	BEGINS AT	01527
28. CLS	BEGINS AT	01633
29. CAL	BEGINS AT	01670
30. ACL	BEGINS AT	01734
31. STO	BEGINS AT	02010
32. SLW	BEGINS AT	02020
33. STP	BEGINS AT	02044
34. STA	BEGINS AT	02156
35. STD	BEGINS AT	02216
36. CAS	BEGINS AT	02244
37. LDQ	BEGINS AT	02351
38. STQ	BEGINS AT	02376
39. SLQ	BEGINS AT	02425
40. TLQ	BEGINS AT	02464

41. RND	BEGINS AT	02541
42. MPY	BEGINS AT	02551
43. MPR	BEGINS AT	02717
44. DVP	BEGINS AT	02777
45. DCT	BEGINS AT	03045
46. DVH-NO HALTS	BEGINS AT	03114
47. ANA	BEGINS AT	03173
48. ANS	BEGINS AT	03262
49. ORA	BEGINS AT	03331
50. ORS	BEGINS AT	03413
51. TTR	BEGINS AT	03477
52. ETM AND LTM	BEGINS AT	03505
53. PSE SENSE LIGHTS	BEGINS AT	03742
54. MSE SENSE LIGHTS	BEGINS AT	03742
55. PSE SENSE SWITCHES	BEGINS AT	04047
56. STT	BEGINS AT	04114
57. STZ	BEGINS AT	04154
58. XCA	BEGINS AT	04204
59. XCL	BEGINS AT	04275
60. ERA	BEGINS AT	04372
61. LGR	BEGINS AT	04445
62. ZET	BEGINS AT	04533
63. NZT	BEGINS AT	04626
64. LAS	BEGINS AT	04713
65. VLM	BEGINS AT	04773
66. VDP	BEGINS AT	05214
67. VDH-NO HALTS	BEGINS AT	05411
68. CVR	BEGINS AT	05524
69. CAQ	BEGINS AT	05637
70. CRQ	BEGINS AT	06030
71. STL	BEGINS AT	06141
72. STR	BEGINS AT	06162

SENSE SWITCH 5 DOWN

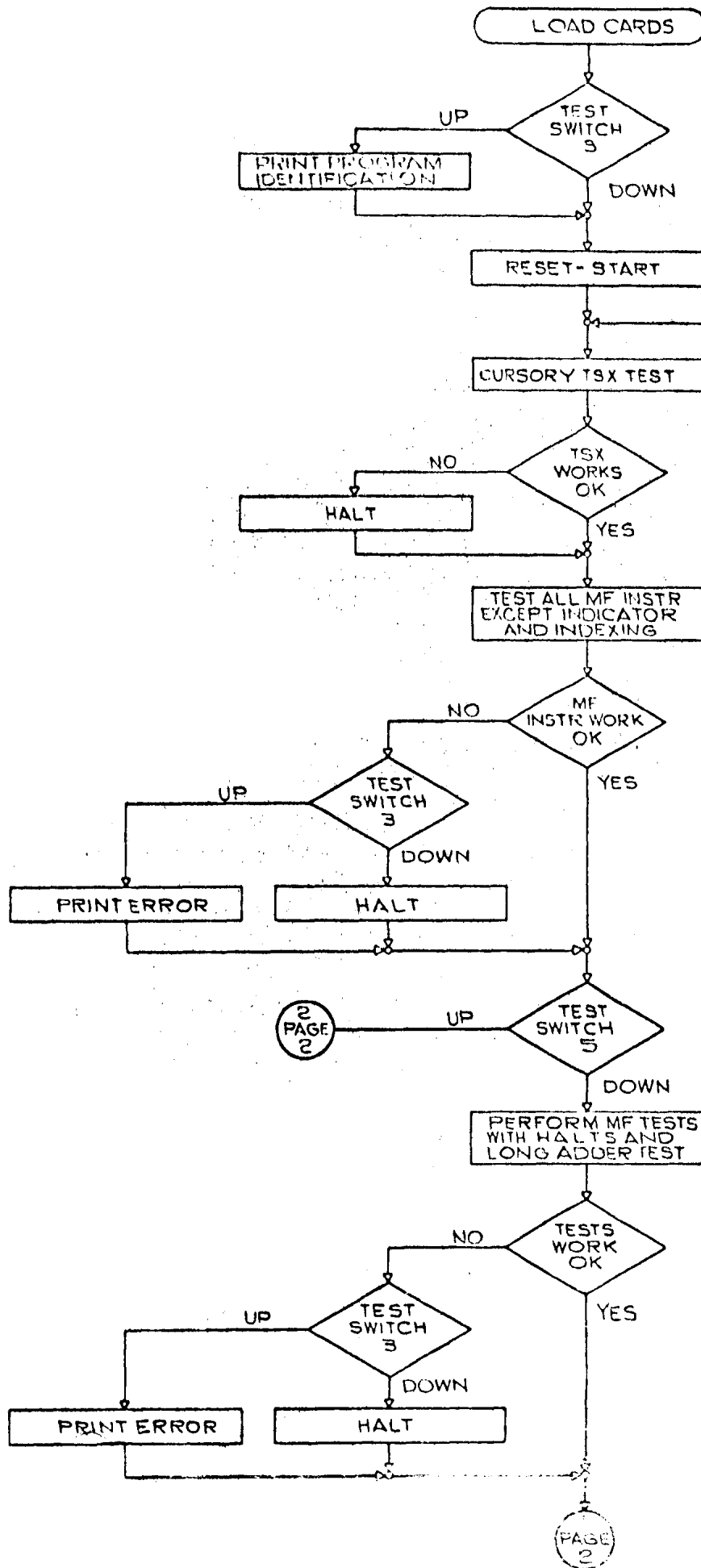
73. M06 ADDER TEST	BEGINS AT	06313
74. M07 ADDER TEST	BEGINS AT	06326
75. DVH-WITH HALTS	BEGINS AT	06346
76. VDH-WITH HALTS	BEGINS AT	06376
77. E NK	BEGINS AT	06427
78. LONG ADDER TEST	BEGINS AT	06452
79. MPY TEST	BEGINS AT	06521
80. MPY/DVP TEST	BEGINS AT	02541

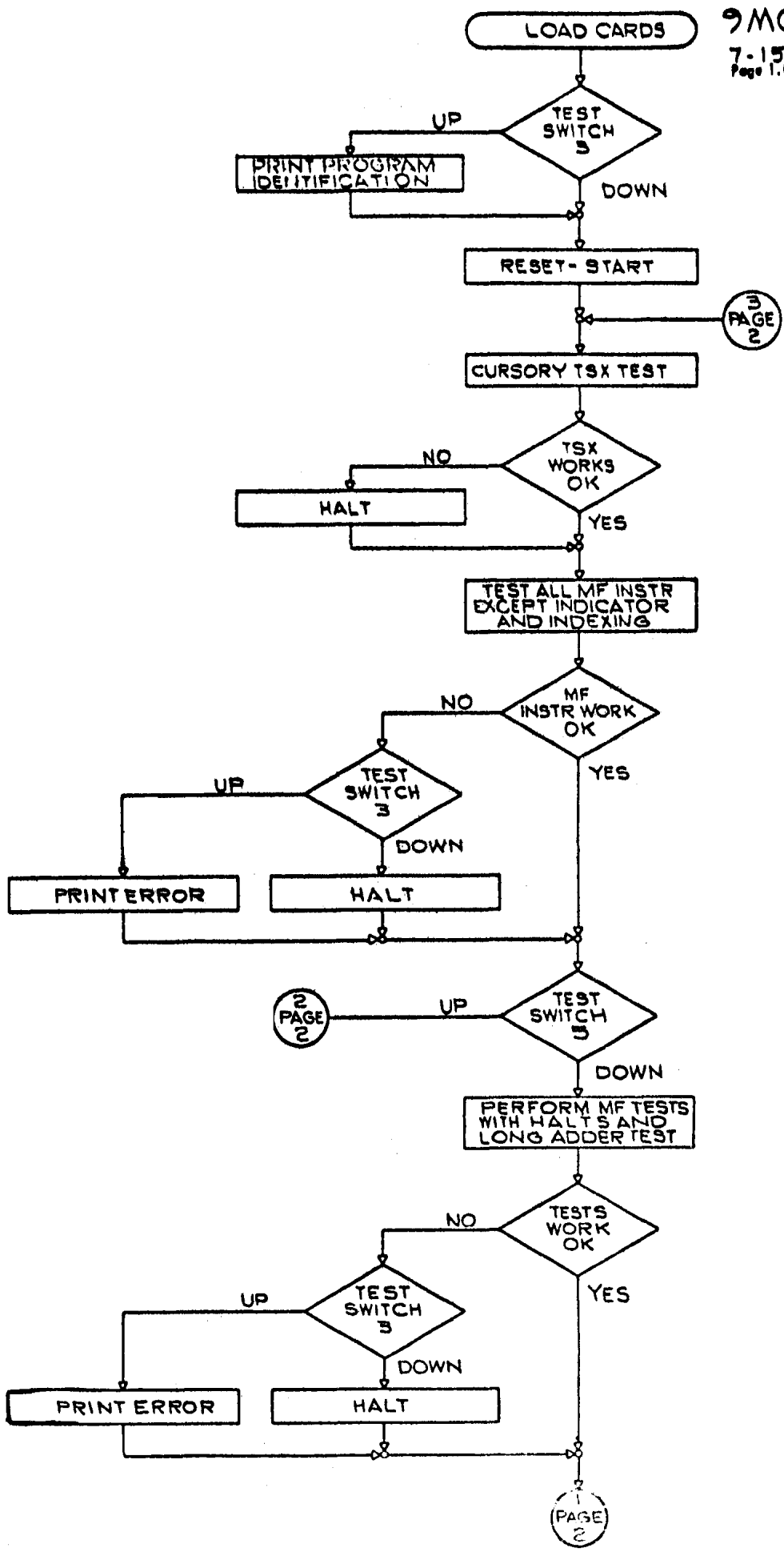
SAMPLE PRINTOUT

NOW PERFORMING DIAGNOSTIC 9M01

TEST LOC 02464, OPN TLQ, ERROR LOC 02467, 0 LOC 000000003617, SW 009001
LITE 0000, MQ 400000000003, XRA 00000, XRB 00000, XRC 75311, TRAP TGR 0
ACC +, Q 0, P, 0,000000000002, DIV CK 0, ACC OVFL 0,
INDS 000000000000, KEYS 002000002467

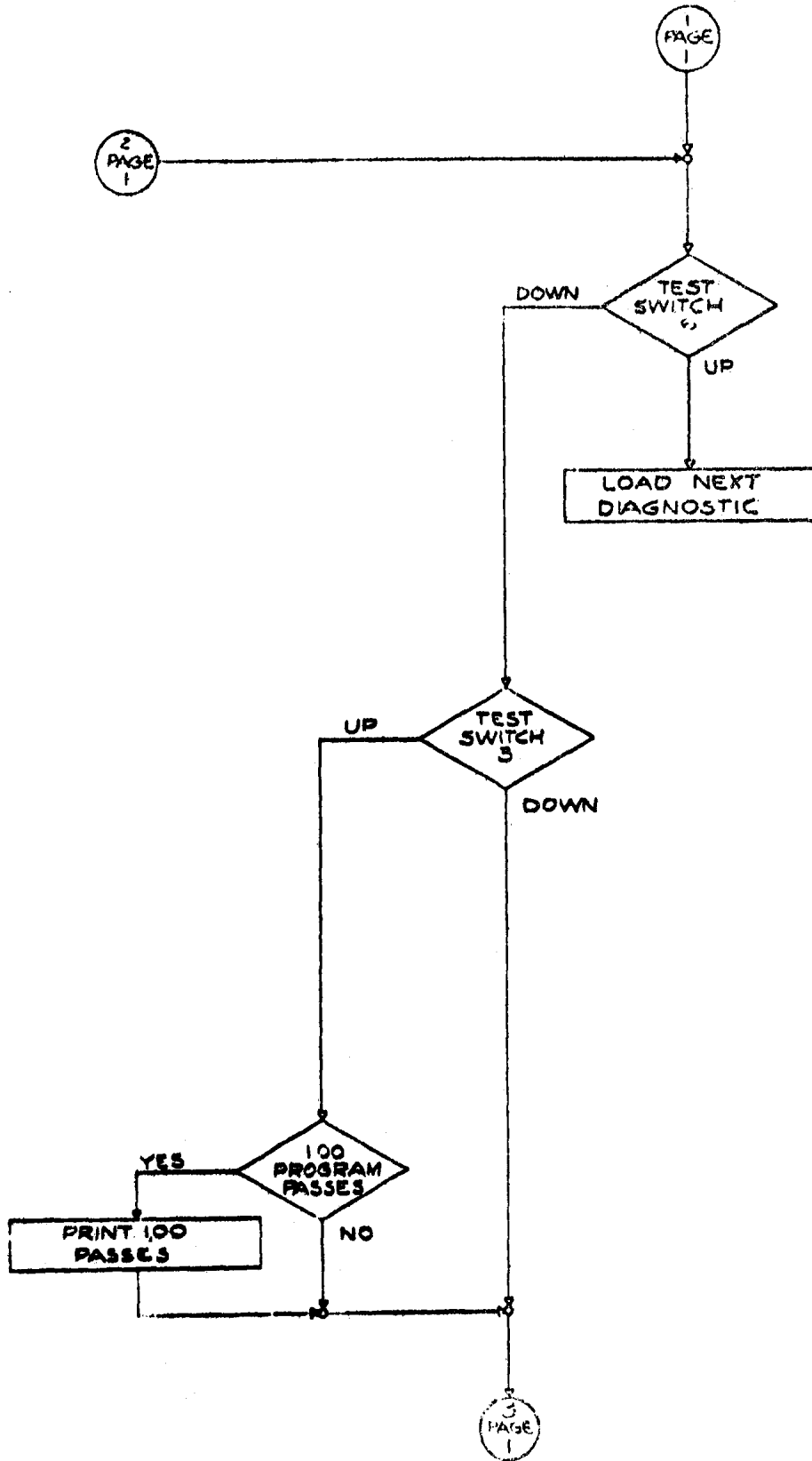
100 PROGRAM PASSES COMPLETE 9M01





9MOIB

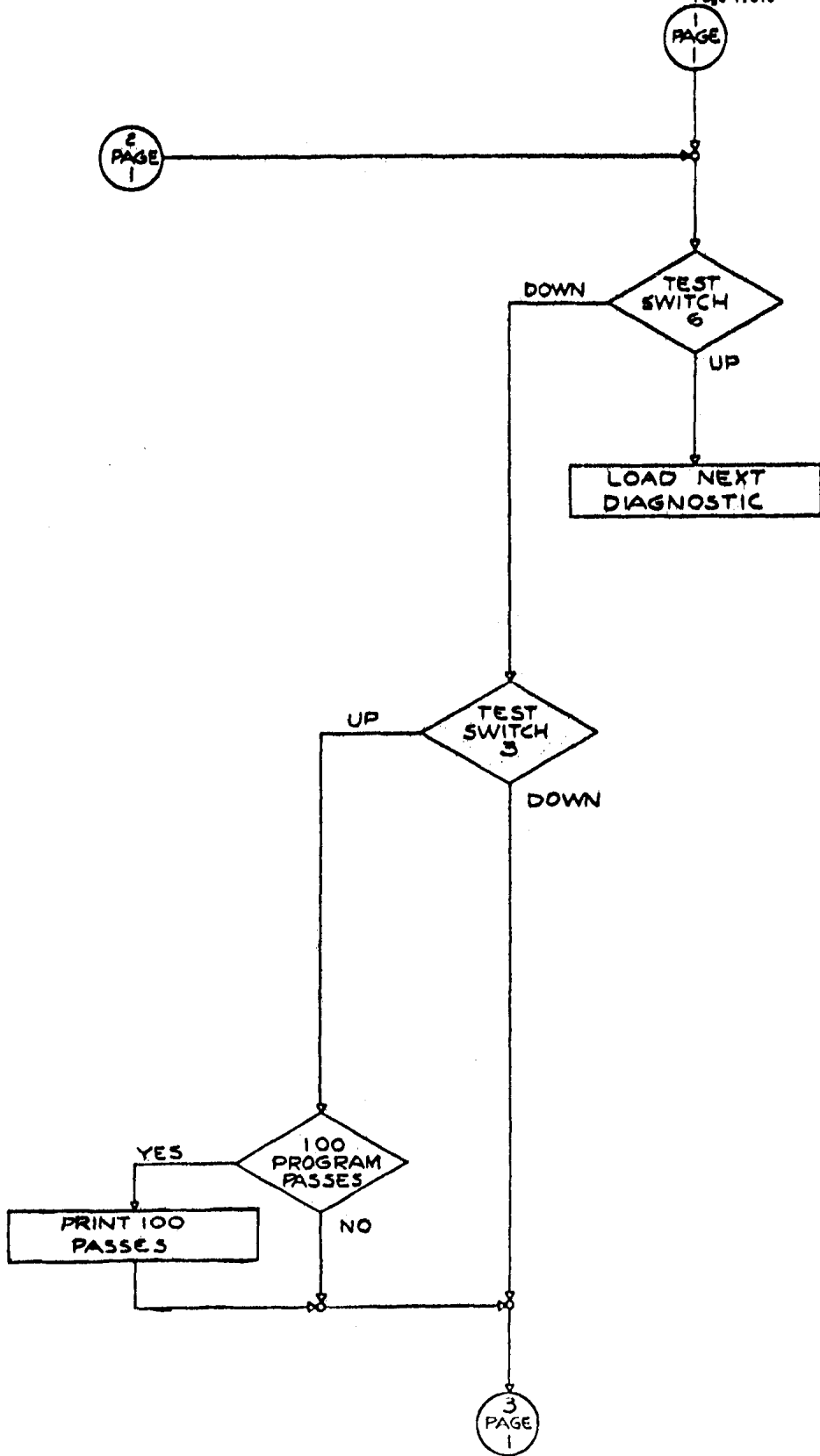
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9M01B

*709 MAIN FRAME TEST EXAMINING FIXED-POINT AND LOGICAL ARITHMETIC
*OPERATIONS, WORD TRANSMISSION OPERATIONS, SHIFTING OPERATIONS,
*CONTROL OPERATIONS AND LOGICAL OPERATIONS

		00030		ORG 24	
00030	0760	00 0	00163	SWT 3	TEST SENSE SWITCH 3
00031	0020	00 0	06630	TRA ID	IDENTIFY PROGRAM
00032	0500	00 0	06564	CLA END+1	RESET
00033	0601	00 0	00000	STO 0	START
					CURSORY TSX TEST
00034	0074	00 4	00036	TSX START, 4	
00035	0000	00 0	00036	HTR START	DID NOT TRA ON TSX
00036	0020	00 4	00005	START TRA 5, 4	BEGIN TEST
00037	0000	00 0	00041	HTR A	WRONG COM IN XRC
					COMMENCE TEST
00040	634665606060			BCD 1TOV	TEST OVERFLOW IN ACC
00041	0140	00 0	00042	A TOV A+1	TURN OFF OVERFLOW TRGR
00042	0140	00 0	00044	TOV A+3	NO GOOD, DID NOT TURN OFF
00043	0020	00 0	00045	TRA A+4	OK
00044	0074	00 4	07042	TSX ERROR, 4	NO GOOD
00045	0074	00 4	07047	TSX OK, 4	OK
00046	0020	00 0	00041	TRA A	REPEAT
00047	634665606060			BCD 1TOV	TEST OVERFLOW ALS
00050	0500	00 0	06751	A7 CLA PTW	PLACE BIT IN ACC 1
00051	0767	00 0	00001	ALS 1	SHOULD OVERFLOW.
00052	0140	00 0	00054	TOV A7+4	OK, SHOULD OVFL
00053	0074	00 4	07042	TSX ERROR, 4	NO GOOD
00054	0074	00 4	07047	TSX OK, 4	OK
00055	0020	00 0	00050	TRA A7	REPEAT
00056	634665606060			BCD 1TOV	TEST OVFL WITH NO
00057	0500	00 0	06675	A8 CLA ZERO	OVERFLOW
00060	0140	00 0	00062	TOV A8+3	SHOULD NOT OVFL
00061	0020	00 0	00063	TRA A8+4	OK, DID NOT OVFL
00062	0074	00 4	07042	TSX ERROR, 4	ERROR
00063	0074	00 4	07047	TSX OK, 4	
00064	0020	00 0	00057	TRA A8	REPEAT
00065	634546606060			BCD 1TNO	TEST TNO WITH NO ACC OVFL
00066	0500	00 0	06675	A9 CLA ZERO	CLEAR ACC
00067	-0140	00 0	00071	TNO A9+3	TEST FOR NO OVFL
00070	0074	00 4	07042	TSX ERROR, 4	NO GOOD
00071	0074	00 4	07047	TSX OK, 4	OK
00072	0020	00 0	00066	TRA A9	REPEAT

00073	634546606060		BCD 1TNO	TEST TNO WITH ACC OVFL
00074	0500 00 0 06751	A10	CLA PTW	PLACE BIT IN ACC 1
00075	0767 00 0 00001		ALS 1	SHIFT TO FORCE OVERFLOW
00076	-0140 00 0 00100		TNO A10+4	SHOULD NOT TRANSFER
00077	0020 00 0 00101		TRA A10+5	OK
00100	0074 00 4 07042		TSX ERROR, 4	
00101	0074 00 4 07047		TSX OK, 4	REPEAT
00102	0020 00 0 00074		TRA A10	
00103	634546606060		BCD 1TNO	DID TNO TURN LIGHT OFF
00104	0140 00 0 00106	A11	TOV A11+2	
00105	0020 00 0 00107		TRA A11+3	OK, DID TURN IT OFF
00106	0074 00 4 07042		TSX ERROR, 4	
00107	0074 00 4 07047		TSX OK, 4	
00110	0020 00 0 00104		TRA A11	REPEAT
00111	637125606060		BCD 1TZE	TEST TZE INST WITH ARS
00112	0771 00 0 00044	A12	ARS 36	CLEAR ACCUMULATOR
00113	0100 00 0 00115		TZE A12+3	TEST FOR ZERO
00114	0074 00 4 07042		TSX ERROR, 4	NO GOOD, DID NOT TRANSFER
00115	0074 00 4 07047		TSX OK, 4	OK
00116	0020 00 0 00112		TRA A12	REPEAT
00117	637125606060		BCD 1TZE	TEST TZE, WITH CLA
00120	0500 00 0 06675	A13	CLA ZERO	BRING IN ZERO
00121	0100 00 0 00123		TZE A13+3	TEST FOR ZERO
00122	0074 00 4 07042		TSX ERROR, 4	NO GOOD DID NOT TRANSFER
00123	0074 00 4 07047		TSX OK, 4	OK
00124	0020 00 0 00120		TRA A13	REPEAT
00125	637125606060		BCD 1TZE	TEST TZE, WITH CLA
00126	0500 00 0 00126	A14	CLA A14	BRING IN NO ZERO
00127	0100 00 0 00131		TZE A14+3	SHOULD NOT TRANSFER
00130	0020 00 0 00132		TRA A14+4	OK, DID NOT TRANSFER
00131	0074 00 4 07042		TSX ERROR, 4	OK
00132	0074 00 4 07047		TSX OK, 4	
00133	0020 00 0 00126		TRA A14	REPEAT
00134	634571606060		BCD 1TNZ	TEST TNZ, ACC NOT ZERO
00135	0500 00 0 00135	A15	CLA A15	BRING IN NON ZERO
00136	-0100 00 0 00140		TNZ A15+3	SHOULD TRANSFER
00137	0074 00 4 07042		TSX ERROR, 4	NO GOOD, DID NOT TRANSFER
00140	0074 00 4 07047		TSX OK, 4	OK
00141	0020 00 0 00135		TRA A15	REPEAT
00142	634571606060		BCD 1TNZ	TEST TNZ, ACC IS ZERO
00143	0500 00 0 06675	A16	CLA ZERO	CLEAR ACC
00144	-0100 00 0 00146		TNZ A16+3	SHOULD NOT TRANSFER

00145	0020	00	0	00147		TRA	A16+4		
00146	0074	00	4	07042		TSX	ERROR,4	GOOD, DID NOT TRANSFER	
00147	0074	00	4	07047		TSX	OK,4		
00150	0020	00	0	00143		TRA	A16		
00151	214362606060					BCD	1ALS	TEST ALS	
00152	0500	00	0	06675	A21	CLA	ZERO	TEST ALS BY MOVING ZERO	
00153	0767	00	0	00010		ALS	8	EIGHT LEFT	
00154	0100	00	0	00156		TZE	A21+4	OK	
00155	0074	00	4	07042		TSX	ERROR,4	PICK UP ONES FROM LEFT	
00156	0074	00	4	07047		TSX	OK,4		
00157	0020	00	0	00152		TRA	A21		
00160	214362606060					BCD	1ALS	TEST ALS, MOVE A ONE	
00161	0500	00	0	06701	A22	CLA	ONE	PLACE ONE IN ACC 35	
00162	-0100	00	0	00165		TNZ	A22+4	OK, ONE IS IN ACC	
00163	0074	00	4	07041		TSX	ERROR-1,4	ERROR IN STARTING	
00164	0020	00	0	00161		TRA	A22		
00165	0140	00	0	00166		TOV	A22+5	TURN OFF OVFL	
00166	0767	00	0	00001		ALS	1		
00167	-0100	00	0	00172		TNZ	A22+9	OK, BIT IS STILL THERE	
00170	0074	00	4	07041		TSX	ERROR-1,4	LOST BIT IN ACC	
00171	0020	00	0	00161		TRA	A22		
00172	0140	00	0	00175		TOV	A22+12	MOVE ON WHEN BIT GETS TO P	
00173	0020	00	0	00166		TRA	A22+5	LOOP ACROSS ACC	
00174	0074	00	4	07042		TSX	ERROR,4	NEVER ENTER, WASTE INST	
00175	0074	00	4	07047		TSX	OK,4		
00176	0020	00	0	00161		TRA	A22		
00177	214362606060					BCD	1ALS	ALS TEST, TEST IN Q POS	
00200	0500	00	0	06751	A23	CLA	PTW	PLACE BIT IN 1	
00201	0767	00	0	00002		ALS	2	MOVE IT TO Q	
00202	-0100	00	0	00205		TNZ	A23+5		
00203	0074	00	4	07041		TSX	ERROR-1,4	LOST BIT IN Q	
00204	0020	00	0	00200		TRA	A23		
00205	0767	00	0	00001		ALS	1	MOVE BIT OUT OF ACC	
00206	0100	00	0	00210		TZE	A23+8	SHOULD BE ZERO NOW	
00207	0074	00	4	07042		TSX	ERROR,4	DID NOT MOVE BIT OUT OF Q	
00210	0074	00	4	07047		TSX	OK,4		
00211	0020	00	0	00200		TRA	A23		
00212	215162606060					BCD	1ARS	ARS TEST	
00213	0500	00	0	06701	A24	CLA	ONE	PUT BIT IN 35 OF ACC	
00214	0140	00	0	00215		TOV	A24+2	TURN OFF OVFL	
00215	-0100	00	0	00220		TNZ	A24+5	OK, BIT IS IN ACC	
00216	0074	00	4	07041		TSX	ERROR-1,4	LOST BIT IN STARTING	
00217	0020	00	0	00213		TRA	A24		
00220	0767	00	0	00042		ALS	34		
00221	-0100	00	0	00224		TNZ	A25	OK, BIT IS IN POS 1	
00222	0074	00	4	07041		TSX	ERROR-1,4		
00223	0020	00	0	00213		TRA	A24		

00224	-0140	00	0	00227	A25	TNO A25+3	OVFL SHOULD BE OFF
00225	0074	00	4	07041		TSX ERROR-1,4	
00226	0020	00	0	00213		TRA A24	
00227	0767	00	0	00001		ALS 1	
00230	0771	00	0	00001		ARS 1	
00231	-0100	00	0	00234		TNZ A26	OK, BIT STILL THERE
00232	0074	00	4	07041		TSX ERROR-1,4	LOST BIT FROM P TO 1
00233	0020	00	0	00213		TRA A24	
00234	0771	00	0	00001	A26	ARS 1	INDICATIONS
00235	0140	00	0	00236		TOV A26+2	TURN OFF OVFL
00236	0767	00	0	00001		ALS 1	
00237	-0140	00	0	00242		TNO A26+6	OVFL SHOULD BE OFF
00240	0074	00	4	07041		TSX ERROR-1,4	
00241	0020	00	0	00213		TRA A24	
00242	0767	00	0	00002		ALS 2	GO OVER TO Q
00243	-0100	00	0	00246		TNZ A26+10	OK, BIT STILL THERE
00244	0074	00	4	07041		TSX ERROR-1,4	LOST BIT
00245	0020	00	0	00213		TRA A24	
00246	0140	00	0	00250		TOV A26+12	OVFL SHOULD BE ON
00247	0074	00	4	07042		TSX ERROR,4	
00250	0074	00	4	07047		TSX OK,4	
00251	0020	00	0	00213		TRA A24	
00252	432263606060					BCD 1LBT	TEST LBT
00253	0500	00	0	06701	A27	CLA ONE	PLACE ONE IN ACC 25
00254	0760	00	0	00001		LBT	
00255	0074	00	4	07042		TSX ERROR,4	DID NOT SENSE ONE BIT
00256	0074	00	4	07047		TSX OK,4	
00257	0020	00	0	00253		TRA A27	
00260	432263606060					BCD 1LBT	TEST LBT
00261	0500	00	0	06675	A28	CLA ZERO	PLACE ZERO IN ACC 35
00262	0760	00	0	00001		LBT	
00263	0020	00	0	00265		TRA A28+4	OK, DID NOT SENSE ONE
00264	0074	00	4	07042		TSX ERROR,4	ERROR SHOULD NOT SKIP
00265	0074	00	4	07047		TSX OK,4	
00266	0020	00	0	00261		TRA A28	
00267	472263606060					BCD 1PBT	PBT TEST
00270	0500	00	0	06675	A29	CLA ZERO	PLACE ZERO IN ACC
00271	0767	00	0	00022		ALS 18	MOVE ZERO INTO P
00272	-0760	00	0	00001		PBT	
00273	0020	00	0	00275		TRA A29+5	OK, SENSED ZERO
00274	0074	00	4	07042		TSX ERROR,4	DID NOT SENSE ONE BIT
00275	0074	00	4	07047		TSX OK,4	
00276	0020	00	0	00270		TRA A29	

00277	472263606060		BCD 1PBT	PBT TEST
00300	0500 00 0 06701	A30	CLA ONE	PLACE ONE ZERO IN ACC 35
00301	0767 00 0 00043		ALS 35	SHIFT ONE TO P POSITION
00302	-0760 00 0 00001		PBT	
00303	0074 00 4 07042		TSX ERROR, 4	DID NOT SKIP WITH ONE IN P
00304	0074 00 4 07047		TSX OK, 4	
00305	0020 00 0 00300		TRA A30	
00306	634743606060		BCD 1TPL	TPL TEST
00307	0500 00 0 06751	A31	CLA PTW	BRING IN PLUS NUMBER
00310	0120 00 0 00312		TPL A31+3	TRANSFER IF OK
00311	0074 00 4 07042		TSX ERROR, 4	ERROR DID NOT TRANSFER
00312	0074 00 4 07047		TSX OK, 4	
00313	0020 00 0 00307		TRA A31	
00314	634743606060		BCD 1TPL	TPL TEST
00315	0500 00 0 06750	A32	CLA MTW	BRING IN MINUS NUMBER
00316	0120 00 0 00320		TPL A32+3	SHOULD NOT TRANSFER
00317	0020 00 0 00321		TRA A32+4	
00320	0074 00 4 07042		TSX ERROR, 4	
00321	0074 00 4 07047		TSX OK, 4	
00322	0020 00 0 00315		TRA A32	
00323	634431606060		BCD 1TMI	TMI TEST
00324	0500 00 0 06750	A33	CLA MTW	BRING IN MINUS NUMBER
00325	-0120 00 0 00327		TMI A33+3	OK, SHOULD TRANSFER
00326	0074 00 4 07042		TSX ERROR, 4	DID NOT TRANSFER
00327	0074 00 4 07047		TSX OK, 4	
00330	0020 00 0 00324		TRA A33	
00331	634431606060		BCD 1TMI	TMI TEST
00332	0500 00 0 06751	A34	CLA PTW	BRING IN PLUS NUMBER
00333	-0120 00 0 00335		TMI A34+3	SHOULD NOT TRANSFER
00334	0020 00 0 00336		TRA A34+4	OK, DID NOT TRANSFER
00335	0074 00 4 07042		TSX ERROR, 4	
00336	0074 00 4 07047		TSX OK, 4	
00337	0020 00 0 00332		TRA A34	
00340	234344606060		BCD 1CLM	CLM TEST, TWO PARTS
00341	0500 00 0 06676	A35	CLA ONES	BRING IN -377777777777
00342	0760 00 0 00000		CLM	
00343	0100 00 0 00346		TZE A35+5	OK, NOW SEE IF SIGN IS SAME
00344	0074 00 4 07041		TSX ERROR-1, 4	DID NOT CLEAR POS 1-35
00345	0020 00 0 00341		TRA A35	
00346	-0120 00 0 00350		TMI A35+7	OK, DID NOT CHANGE SIGN
00347	0074 00 4 07042		TSX ERROR, 4	CHANGED SIGN
00350	0074 00 4 07047		TSX OK, 4	PROCEED
00351	0020 00 0 00341		TRA A35	

00352	234344606060		BCD 1CLM	CLM TEST, TWO PARTS
00353	0500 00 0 06674	A36	CLA PONES	BRING IN +377777777777
00354	0760 00 0 00000		CLM	
00355	0100 00 0 00360		TZE A36+5	OK. NOW SEE IF SIGN IS SAME
00356	0074 00 4 07041		TSX ERROR-1,4	DID NOT CLEAR POS 1-35
00357	0020 00 0 00353		TRA A36	
00360	0120 00 0 00362		TPL A36+7	OK, SIGN UNCHANGED
00361	0074 00 4 07042		TSX ERROR,4	CHANGED SIGN
00362	0074 00 4 07047		TSX OK,4	
00363	0020 00 0 00353		TRA A36	
00364	234344606060		BCD 1CLM	CLM TEST, CHECK OF P ANDQ
00365	0500 00 0 06676	A37	CLA ONES	BRING IN ONES
00366	0767 00 0 00006		ALS 6	SHIFT INTO P AND Q
00367	0760 00 0 00000		CLM	
00370	0100 00 0 00372		TZE A37+5	OK, SHOULD CLEAR P AND Q
00371	0074 00 4 07042		TSX ERROR,4	DID NOT CLEAR P AND Q
00372	0074 00 4 07047		TSX OK,4	
00373	0020 00 0 00365		TRA A37	
00374	626247606060		BCD 1SSP	SSP TEST
00375	0500 00 0 06676	A38	CLA ONES	MAKE ACC SIGN MINUS
00376	0760 00 0 00003		SSP	NOW MAKE POSITIVE
00377	0120 00 0 00401		TPL A38+4	OK, SHOULD TRANSFER
00400	0074 00 4 07042		TSX ERROR,4	DID NOT CHANGE MINUS TO PLUS
00401	0074 00 4 07047		TSX OK,4	
00402	0020 00 0 00375		TRA A38	
00403	626247606060		BCD 1SSP	SSP TEST
00404	0500 00 0 06674	A39	CLA PONES	BRING IN PLUS NUMBER
00405	0760 00 0 00003		SSP	
00406	0120 00 0 00410		TPL A39+4	SHOULD TRANSFER
00407	0074 00 4 07042		TSX ERROR,4	DID NOT TRA, CHANGED SIGN
00410	0074 00 4 07047		TSX OK,4	
00411	0020 00 0 00404		TRA A39	
00412	626244606060		BCD 1SSM	SSM TEST
00413	0500 00 0 06674	A40	CLA PONES	BRING IN PLUS NUMBER
00414	-0760 00 0 00003		SSM	MAKE IT MINUS
00415	-0120 00 0 00417		TMI A40+4	SHOULD TRANSFER
00416	0074 00 4 07042		TSX ERROR,4	DID NOT CHANGE PLUS TO MINUS
00417	0074 00 4 07047		TSX OK,4	
00420	0020 00 0 00413		TRA A40	
00421	626244606060		BCD 1SSM	SSM TEST
00422	0500 00 0 06676	A41	CLA ONES	BRING IN NEGATIVE NUMBER
00423	-0760 00 0 00003		SSM	SHOULD NOT CHANGE
00424	-0120 00 0 00426		TMI A41+4	SHOULD TRANSFER

00425	0074	00	4	07042		TSX ERROR, 4	INADVERTENTLY CHANGED SIGN
00426	0074	00	4	07047		TSX OK, 4	
00427	0020	00	0	00422		TRA A41	
00430	233062606060					BCD 1CHS	CHS TEST
00431	0500	00	0	06674	A42	CLA PONES	BRING IN PLUS NUMBER
00432	0760	00	0	00002		CHS	MAKE IT MINUS
00433	-0120	00	0	00435		TMI A42+4	SHOULD TRANSFER
00434	0074	00	4	07042		TSX ERROR, 4	DID NOT CHANGE SIGNS
00435	0074	00	4	07047		TSX OK, 4	
00436	0020	00	0	00431		TRA A42	
00437	233062606060					BCD 1CHS	CHS TEST
00440	0500	00	0	06676	A43	CLA ONES	BRING IN NEGATIVE NUMBER
00441	0760	00	0	00002		CHS	MAKE IT POSITIVE
00442	0120	00	0	00444		TPL A43+4	SHOULD TRANFER
00443	0074	00	4	07042		TSX ERROR, 4	DID NOT CHANGE MINUS TO PLUS
00444	0074	00	4	07047		TSX OK, 4	
00445	0020	00	0	00440		TRA A43	
00446	434362606060					BCD 1LLS	LLS TEST
00447	0140	00	0	00450	A44	TOV A44+1	TURN OFF OVFL
00450	0560	00	0	06675		LDQ ZERO	BRING ZERO INTO ACC + MQ
00451	0500	00	0	06675		CLA ZERO	SEE IF PICKED UP BITS
00452	0763	00	0	00022		LLS 18	BY SHIFT
00453	0100	00	0	00456		TZE A45	SHOULD TRANFER
00454	0074	00	4	07041		TSX ERROR-1, 4	PICKED UP BI
00455	0020	00	0	00447		TRA A44	
00456	-0600	00	0	07037	A45	STQ TEMP	CHECK FOR MQ PICK UP
00457	0500	00	0	07037		CLA TEMP	OF BITS BY LLS
00460	0100	00	0	00462		TZE A45+4	OK, NO PICK UP
00461	0074	00	4	07042		TSX ERROR, 4	PICKED UP A ONE
00462	0074	00	4	07047		TSX OK, 4	
00463	0020	00	0	00447		TRA A44	REPEAT TO A44
00464	434362606060					BCD 1LLS	LLS TEST
00465	0500	00	0	06675	A46	CLA ZERO	CLEAR ACCUMULATOR
00466	0560	00	0	06701		LDQ ONE	MOVE BIT FROM MQ 35 TO MQ 1
00467	0763	00	0	00042		LLS 34	DOES IT MOVE CORRECTLY
00470	0100	00	0	00473		TZE A47	OK, PROCEED
00471	0074	00	4	07041		TSX ERROR-1, 4	
00472	0020	00	0	00465		TRA A46	
00473	-0600	00	0	07037	A47	STQ TEMP	IS THE BIT STILL IN MQ
00474	0500	00	0	07037		CLA TEMP	
00475	0402	00	0	06751		SUB PTW	
00476	0100	00	0	00500		TZE A47+5	SHOULD TRANFER
00477	0074	00	4	07042		TSX ERROR, 4	LOST THE BIT IN THE MQ

00500	0074	00	4	07047		TSX OK, 4	
00501	0020	00	0	00465		TRA A46	GO BACK UP TO A 46
00502	434362606060					BCD 1LLS	LLS TEST, CHECK FOR SIGNS
00503	0500	00	0	06750	A48	CLA MTW	MAKE ACC NEGATIVE
00504	0560	00	0	06751		LDQ PTW	MAKE MQ POSITIVE
00505	0763	00	0	00000		LLS	
00506	0120	00	0	00510		TPL A48+5	OK, SHOULD TRANSFER
00507	0074	00	4	07042		TSX ERROR, 4	DID NOT CHANGE ACC SIGN
00510	0074	00	4	07047		TSX OK, 4	
00511	0020	00	0	00503		TRA A48	
00512	434362606060					BCD 1LLS	LLS TEST, CHECK FOR SIGNS
00513	0500	00	0	06751	A49	CLA PTW	MAKE ACC POSITIVE
00514	0560	00	0	06750		LDQ MTW	MAKE MQ NEGATIVE
00515	0763	00	0	00000		LLS	
00516	-0120	00	0	00520		TMI A49+5	OK, SHOULD TRANSFER
00517	0074	00	4	07042		TSX ERROR, 4	DID NOT CHANGE ACC SIGN
00520	0074	00	4	07047		TSX OK, 4	
00521	0020	00	0	00513		TRA A49	
00522	434362606060					BCD 1LLS	
00523	0500	00	0	06751	A50	CLA PTW	MAKE ACC POSITIVE
00524	0560	00	0	06751		LDQ PTW	MAKE MQ POSITIVE
00525	0763	00	0	00000		LLS	
00526	0120	00	0	00530		TPL A50+5	SHOULD TRANSFER
00527	0074	00	4	07042		TSX ERROR, 4	CHANGED SIGNS INADVERTENTLY
00530	0074	00	4	07047		TSX OK, 4	
00531	0020	00	0	00523		TRA A50	
00532	434362606060					BCD 1LLS	LLS TEST, CHECK FOR SIGNS
00533	0500	00	0	06750	A51	CLA MTW	MAKE ACC NEGATIVE
00534	0560	00	0	06750		LDQ MTW	MAKE MQ NEGATIVE
00535	0763	00	0	00000		LLS	
00536	-0120	00	0	00540		TMI A51+5	SHOULD TRANSFER
00537	0074	00	4	07042		TSX ERROR, 4	SIGNS CHANGED INADVERTENTLY
00540	0074	00	4	07047		TSX OK, 4	
00541	0020	00	0	00533		TRA A51	
00542	435162606060					BCD 1LRS	LRS TEST
00543	0500	00	0	06701	A52	CLA ONE	PLACE 1 IN ACC 35
00544	0560	00	0	06675		LDQ ZERO	CLEAR MQ
00545	0765	00	0	00043		LRS 35	SHIFT A ONE TO MQ
00546	-0600	00	0	07037		STQ TEMP	STORE MQ IN TEMP STORAGE
00547	0500	00	0	07037		CLA TEMP	BRING CONTENTS OF MQ TO ACC
00550	-0100	00	0	00552		TNZ A52+7	OK, SHOULD STILL HAVE ONE
00551	0074	00	4	07042		TSX ERROR, 4	LOST ONE BIT IN SHIFT
00552	0074	00	4	07047		TSX OK, 4	
00553	0020	00	0	00543		TRA A52	

00554	435162606060		BCD 1LRS	LRS TEST
00555	0560 00 0 06675	A53	LDQ ZERO	CLEAR MQ
00556	0500 00 0 06751		CLA PTW	PLATE BIT IN ACC 1
00557	0765 00 0 00044		LRS 36	MOVE A ONE TO MQ
00560	0100 00 0 00562		TZE A53+5	OK, ACC SHOULD BE CLEAR
00561	0074 00 4 07042		TSX ERROR, 4	DID NOT CLEAR ACC
00562	0074 00 4 07047		TSX OK, 4	
00563	0020 00 0 00555		TRA A53	
00564	435162606060		BCD 1LRS	LRS TEST
00565	0500 00 0 06750	A54	CLA MTW	PLACE BIT IN ACC POS 1
00566	0765 00 0 00042		LRS 34	MOVE IT TO ACC POS 35
00567	0760 00 0 00001		LBT	IS IT THERE
00570	0074 00 4 07042		TSX ERROR, 4	NO
00571	0074 00 4 07047		TSX OK, 4	YES
00572	0020 00 0 00565		TRA A54	
00573	435162606060		BCD 1LRS	LRS TEST, CHECK SIGNS
00574	0500 00 0 06751	A55	CLA PTW	MAKE ACC POSITIVE
00575	0560 00 0 06750		LDQ MTW	MAKE MQ NEGATIVE
00576	0765 00 0 00000		LRS	CHANGE SIGN OF MQ
00577	-0600 00 0 07037		STQ TEMP	STORE IT
00600	0500 00 0 07037		CLA TEMP	BRING IT TO ACC
00601	0120 00 0 00603		TPL A55+7	SHOULD BE PLUS
00602	0074 00 4 07042		TSX ERROR, 4	DID NOT CHANGE SIGNS
00603	0074 00 4 07047		TSX OK, 4	
00604	0020 00 0 00574		TRA A55	
00605	435162606060		BCD 1LRS	LRS TEST, CHECK SIGNS
00606	0500 00 0 06750	A56	CLA MTW	MAKE ACC NEGATIVE
00607	0560 00 0 06751		LDQ PTW	MAKE MQ POSITIVE
00610	0765 00 0 00000		LRS	CHANGE MQ SIGN
00611	-0600 00 0 07037		STQ TEMP	SAVE IT
00612	0500 00 0 07037		CLA TEMP	TEST IT
00613	-0120 00 0 00615		TMI A56+7	OK
00614	0074 00 4 07042		TSX ERROR, 4	DID NOT CHANGE MQ SIGN
00615	0074 00 4 07047		TSX OK, 4	
00616	0020 00 0 00606		TRA A56	
00617	435162606060		BCD 1LRS	LRS TEST, CHECK SIGNS
00620	0500 00 0 06751	A57	CLA PTW	MAKE ACC POSITIVE
00621	0560 00 0 06751		LDQ PTW	MAKE MQ POSITIVE
00622	0765 00 0 00000		LRS	MQ SIGN SHOULD STAY POSITIVE
00623	-0600 00 0 07037		STQ TEMP	SAVE IT
00624	0500 00 0 07037		CLA TEMP	BRING TO ACC
00625	0120 00 0 00627		TPL A57+7	OK, SHOULD BE PLUS
00626	0074 00 4 07042		TSX ERROR, 4	CHANGE SIGN INADVERTENTLY
00627	0074 00 4 07047		TSX OK, 4	
00630	0020 00 0 00620		TRA A57	

00631	432743606060		BCD 1LGL	LGL TEST
00632	0140 00 0 00633	A58	TOV A58+1	TURN OFF OVERFLOW
00633	0500 00 0 06675		CLA ZERO	PLACE ZERO IN ACC
00634	0560 00 0 06675		LDQ ZERO	PLACE ZERO IN MQ
00635	-0763 00 0 00010		LGL 8	
00636	-0600 00 0 07037		STQ TEMP	SAVE MQ
00637	0500 00 0 07037		CLA TEMP	BRING IT INTO ACC
00640	0100 00 0 00642		TZE A58+8	OK, SHOULD BE ZERO
00641	0074 00 4 07042		TSX ERROR, 4	PICKED UP BITS
00642	0074 00 4 07047		TSX OK, 4	
00643	0020 00 0 00632		TRA A58	
00644	432743606060		BCD 1LGL	LGL TEST, SHIFT ACROSS
00645	0500 00 0 06675	A59	CLA ZERO	PLACE ZERO IN ACC
00646	0560 00 0 06701		LDQ ONE	PLACE ONE IN MQ 35
00647	-0763 00 0 00001		LGL 1	SHIFT ONE
00650	-0600 00 0 07037		STQ TEMP	SAVE MQ
00651	0500 00 0 07037		CLA TEMP	TEST FOR BIT
00652	-0100 00 0 00647		TNZ A59+2	OK, SWEEP ACROSS MQ
00653	-0120 00 0 00655		TMI A59+8	FINISH ACC SHOULD BE MINUS
00654	0074 00 4 07042		TSX ERROR, 4	FAILED TO SHIFT, LOST A BIT
00655	0074 00 4 07047		TSX OK, 4	
00656	0020 00 0 00645		TRA A59	
00657	432743606060		BCD 1LGL	LGL TEST, SEEK P POSITION
00660	0140 00 0 00661	A60	TOV A60+1	TURN OFF OVERFLOW
00661	0560 00 0 06702		LDQ MZE	
00662	-0763 00 0 00044		LGL 36	MOVE BIT FROM MQ S TO ACC P
00663	-0760 00 0 00001		PBT	IS THERE A BIT IN ACC P
00664	0020 00 0 00666		TRA A60+6	
00665	0020 00 0 00670		TRA A60+8	
00666	0074 00 4 07041		TSX ERROR-1, 4	
00667	0020 00 0 00660		TRA A60	
00670	0140 00 0 00673		TOV A61	OK, PROCEED
00671	0074 00 4 07041		TSX ERROR-1, 4	
00672	0020 00 0 00660		TRA A60	
00673	-0763 00 0 00002	A61	LGL 2	MOVE BIT OUT OF Q
00674	0100 00 0 00676		TZE A61+3	OK, SHOULD BE ZERO
00675	0074 00 4 07042		TSX ERROR, 4	DID NOT MOVE PAST Q
00676	0074 00 4 07047		TSX OK, 4	
00677	0020 00 0 00660		TRA A60	
00700	432743606060		BCD 1LGL	LGL TEST
00701	0560 00 0 06705	A61A	LDQ PTHR	PLACE BIT IN MQ 2 POS
00702	-0763 00 0 00003		LGL 3	MOVE BIT TO ACC 35
00703	0760 00 0 00001		LBT	CHECK ACC
00704	0020 00 0 00706		TRA A61A+5	DID NOT SHIFT TO ACC 35
00705	0020 00 0 00710		TRA A61A+7	OK, CHECK MQ
00706	0074 00 4 07041		TSX ERROR-1, 4	
00707	0020 00 0 00701		TRA A61A	

00710	-0600	00	0	07037		STQ	TEMP	PLACE MQ IN TEMP STOR
00711	0500	00	0	07037		CLA	TEMP	BRING IT TO ACC
00712	0100	00	0	00715		TZE	A61A+12	SHOULD BE ZERO
00713	0074	00	4	07041		TSX	ERROR-1,4	
00714	0020	00	0	00701		TRA	A61A	
00715	0120	00	0	00717		TPL	A61A+14	OK, MQ IS PLUS, PROCEED
00716	0074	00	4	07042		TSX	ERROR,4	
00717	0074	00	4	07047		TSX	OK,4	
00720	0020	00	0	00701		TRA	A61A	
00721	515043606060					BCD	1RQL	RQL TEST
00722	0560	00	0	06702	A62	LDQ	MZE	PLACE BIT IN MQC SIGN POS
00723	-0773	00	0	00001		RQL	1	
00724	-0600	00	0	07037		STQ	TEMP	SAVE MQ
00725	0500	00	0	07037		CLA	TEMP	BRING MQ TO ACC
00726	0760	00	0	00001		LBT		TEST FOR ROTATE
00727	0074	00	4	07042		TSX	ERROR,4	DID NOT ROTATE
00730	0074	00	4	07047		TSX	OK,4	OK, BIT WENT FROM MQ S TO MQ 35
00731	0020	00	0	00722		TRA	A62	
00732	515043606060					BCD	1RQL	RQL TEST
00733	0140	00	0	00734	A62A	TOV	A62A+1	TURN OFF OVFL
00734	0500	00	0	06675		CLA	ZERO	LOAD ACC WITH ZERO
00735	0560	00	0	06675		LDQ	ZERO	LOAD MQ WITH ZERO
00736	-0773	00	0	00020		RQL	16	
00737	-0600	00	0	07037		STQ	TEMP	MOVE MQ TO ACC
00740	0500	00	0	07037		CLA	TEMP	
00741	0100	00	0	00743		TZE	A62A+8	OK, SHOULD BE ZERO
00742	0074	00	4	07042		TSX	ERROR,4	PICKED UP BITS
00743	0074	00	4	07047		TSX	OK,4	
00744	0020	00	0	00733		TRA	A62A	
00745	515043606060					BCD	1RQL	RQL TEST
00746	0560	00	0	06702	A63	LDQ	MZE	START WITH BIT IN MQ S
00747	-0773	00	0	00001		RQL	1	SHIFT UNTIL IT GET BACK
00750	-0600	00	0	07037		STQ	TEMP	AROUND
00751	0500	00	0	07037		CLA	TEMP	
00752	-0100	00	0	00747		TNZ	A63+1	LOOP 35 TIMES
00753	-0120	00	0	00755		TMI	A63+7	YES, IT GOT BACK TO S POS
00754	0074	00	4	07042		TSX	ERROR,4	
00755	0074	00	4	07047		TSX	OK,4	
00756	0020	00	0	00746		TRA	A63	
00757	515043606060					BCD	1RQL	RQL MODULO TEST
00760	0560	00	0	06701	A63A	LDQ	ONE	PLACE ONE IN MQ 35
00761	-0773	00	0	00400		RQL	256	SHOULD NOT SHIFT
00762	-0600	00	0	07037		STQ	TEMP	LOAD MQ INTO ACC
00763	0500	00	0	07037		CLA	TEMP	
00764	0760	00	0	00001		LBT		HAVE WE SHIFTED

00765	0074	00	4	07042		TSX ERROR, 4	
00766	0074	00	4	07047		TSX OK, 4	
00767	0020	00	0	00760		TRA A63A	
00770	515043606060					BCD 1RQL	RQL MODULO TEST
00771	0560	00	0	06701	A63B	LDQ ONE	PLACE ONE IN MQ 35
00772	-0773	00	0	00444		RQL 292	SHOULD MAKE ONE ROTATION
00773	-0600	00	0	07037		STQ TEMP	LOAD MQ INTO ACC
00774	0500	00	0	07037		CLA TEMP	
00775	0760	00	0	00001		LBT	WAS MODULO INTERPRETED OK
00776	0074	00	4	07042		TSX ERROR, 4	NO
00777	0074	00	4	07047		TSX OK, 4	YES, MODULO PROCESS WORKS
01000	0020	00	0	00771		TRA A63B	
01001	635047606060					BCD 1TQP	TQP TEST
01002	0560	00	0	06751	A64	LDQ PTW	PLACE PLUS NUMBER IN MQ
01003	0162	00	0	01005		TQP A64+3	SHOULD TRANSFER
01004	0074	00	4	07042		TSX ERROR, 4	
01005	0074	00	4	07047		TSX OK, 4	
01006	0020	00	0	01002		TRA A64	
01007	635047606060					BCD 1TQP	TQP TEST
01010	0560	00	0	06750	A65	LDQ MTW	PLACE NEGATIVE NO IN MQ
01011	0162	00	0	01013		TQP A65+3	SHOULD NOT TRANSFER
01012	0020	00	0	01014		TRA A65+4	OK
01013	0074	00	4	07042		TSX ERROR, 4	
01014	0074	00	4	07047		TSX OK, 4	
01015	0020	00	0	01010		TRA A65	
01016	454647606060					BCD 1NOP	NOP TEST
01017	0761	00	0	01021	A66	NOP A66+2	
01020	0020	00	0	01022		TRA A66+3	OK
01021	0074	00	4	07042		TSX ERROR, 4	
01022	0074	00	4	07047		TSX OK, 4	
01023	0020	00	0	01017		TRA A66	
01024	234644606060					BCD 1COM	COM TEST
01025	0500	00	0	06676	A67	CLA ONES	PLACE ONES IN ACC
01026	0760	00	0	00006		COM	SHOULD NOW BE ZERO
01027	0767	00	0	00002		ALS 2	
01030	0100	00	0	01032		TZE A67+5	OK, IT IS ZERO
01031	0074	00	4	07042		TSX ERROR, 4	
01032	0074	00	4	07047		TSX OK, 4	
01033	0020	00	0	01025		TRA A67	
01034	234644606060					BCD 1COM	COM TEST
01035	0500	00	0	06676	A68	CLA ONES	PLACE ONES IN ACC
01036	0560	00	0	06676		LDQ ONES	PLACE ONES IN MQ
01037	0763	00	0	00010		LLS 8	SHIFT BITS TO P AND Q
01040	0760	00	0	00006		COM	MAKE IT ALL ZEROS

01041	0100	00	0	01043		TZE A68+6	OK, ALL ZEROS
01042	0074	00	4	07042		TSX ERROR, 4	
01043	0074	00	4	07047		TSX OK, 4	
01044	0020	00	0	01035		TRA A68	
01045	234644606060					BCD 1COM	COM TEST, CHECK SIGN
01046	0500	00	0	06674	A69	CLA PONES	BRING IN PLUS NUMBER
01047	0760	00	0	00006		COM	MAKE COM
01050	0120	00	0	01052		TPL A69+4	OK, SIGN DID NOT CHANGE
01051	0074	00	4	07042		TSX ERROR, 4	
01052	0074	00	4	07047		TSX OK, 4	
01053	0020	00	0	01046		TRA A69	
01054	234644606060					BCD 1COM	COM TEST, CHECK SIGN
01055	0500	00	0	06676	A70	CLA ONES	BRING IN NEG NUMBER
01056	0760	00	0	00006		COM	COM
01057	-0120	00	0	01061		TMI A70+4	OK, SIGN DID NOT CHANGE
01060	0074	00	4	07042		TSX ERROR, 4	
01061	0074	00	4	07047		TSX OK, 4	
01062	0020	00	0	01055		TRA A70	
01063	212424606060					BCD 1ADD	ADD TEST, SIGNS POSITIVE
01064	0500	00	0	06701	A71	CLA ONE	HAVE BOTH SIGNS POSITIVE
01065	0400	00	0	06701		ADD ONE	ADD
01066	0760	00	0	00001		LBT	SHOULD HAVE ZERO IN ACC 35
01067	0020	00	0	01072		TRA A72	OK
01070	0074	00	4	07041		TSX ERROR-1, 4	
01071	0020	00	0	01064		TRA A71	
01072	0771	00	0	00001	A72	ARS 1	SHIFT ONE TO CHECK ANSWER
01073	0760	00	0	00001		LBT	
01074	0020	00	0	01076		TRA A72+4	DID NOT ADD CORRECTLY
01075	0020	00	0	01100		TRA A72+6	CHECK SIGN
01076	0074	00	4	07041		TSX ERROR-1, 4	BIT ERROR
01077	0020	00	0	01064		TRA A71	
01100	0120	00	0	01102		TPL A72+8	OK, SIGN IS PLUS
01101	0074	00	4	07042		TSX ERROR, 4	
01102	0074	00	4	07047		TSX OK, 4	
01103	0020	00	0	01064		TRA A71	
01104	212424606060					BCD 1ADD	ADD TEST, SIGNS NEGATIVE
01105	0500	00	0	06754	A73	CLA MONE	BRING IN MINUS ONE
01106	0400	00	0	06754		ADD MONE	ADD MINUS ONE
01107	0760	00	0	00001		LBT	TEST ANSWER
01110	0020	00	0	01113		TRA A74	OK, ACC 35 IS A ZERO
01111	0074	00	4	07041		TSX ERROR-1, 4	
01112	0020	00	0	01105		TRA A73	
01113	0771	00	0	00001	A74	ARS 1	SHOULD GET A ONE

01114	0760	00	0	00001		LBT	TEST
01115	0020	00	0	01117		TRA A74+4	DID NOT SENSE A ONE
01116	0020	00	0	01121		TRA A74+6	CHECK SIGN
01117	0074	00	4	07041		TSX ERROR-1,4	
01120	0020	00	0	01105		TRA A73	
01121	-0120	00	0	01123		TMI A74+8	OK, SIGN IS MINUS
01122	0074	00	4	07042		TSX ERROR,4	
01123	0074	00	4	07047		TSX OK,4	
01124	0020	00	0	01105		TRA A73	REPEAT SECTION
01125	212424606060					BCD 1ADD	ADD TEST, ACC PLUS, MEMORY NEGATIVE
01126	0500	00	0	06745	A75	CLA THREE	MAKE ACC PLUS THREE
01127	0400	00	0	06755		ADD M2	ADD MEM MINUS TWO
01130	0760	00	0	00001		LBT	SHOULD GET A ONE
01131	0020	00	0	01133		TRA A75+5	
01132	0020	00	0	01135		TRA A76	OK
01133	0074	00	4	07041		TSX ERROR-1,4	
01134	0020	00	0	01126		TRA A75	
01135	0771	00	0	00001	A76	ARS 1	SEE THAT HAVE NO CARRY
01136	0760	00	0	00001		LBT	TEST FOR ZERO
01137	0020	00	0	01142		TRA A76+5	CHECK SIGN
01140	0074	00	4	07041		TSX ERROR-1,4	
01141	0020	00	0	01126		TRA A75	
01142	0120	00	0	01144		TPL A76+7	OK, SIGN SHOULD BE PLUS
01143	0074	00	4	07042		TSX ERROR,4	
01144	0074	00	4	07047		TSX OK,4	
01145	0020	00	0	01126		TRA A75	REPEAT SECTION
01146	212424606060					BCD 1ADD	ADD TEST, ACC MINUS MEMORY PLUS
01147	0500	00	0	06772	A77	CLA M3	MAKE ACC MINUS THREE
01150	0400	00	0	06744		ADD TWO	ADD PLUS TWO
01151	0760	00	0	00001		LBT	TEST FOR ONE
01152	0020	00	0	01154		TRA A77+5	
01153	0020	00	0	01156		TRA A78	OK
01154	0074	00	4	07041		TSX ERROR-1,4	
01155	0020	00	0	01147		TRA A77	
01156	0771	00	0	00001	A78	ARS 1	SEE THAT HAVE NO CARRY
01157	0760	00	0	00001		LBT	SHOULD BE ZERO
01160	0020	00	0	01163		TRA A78+5	CHECK SIGN
01161	0074	00	4	07041		TSX ERROR-1,4	BIT ERROR
01162	0020	00	0	01147		TRA A77	
01163	-0120	00	0	01165		TMI A78+7	OK, SIGN IS MINUS
01164	0074	00	4	07042		TSX ERROR,4	DID NOT GET SIGN OR ZERO
01165	0074	00	4	07047		TSX OK,4	
01166	0020	00	0	01147		TRA A77	

01167	212424606060		BCD 1ADD	ADD TEST
01170	0500 00 0 06744	A79	CLA TWO	MAKE ACC PLUS TWO
01171	0400 00 0 06772		ADD M3	ADD MINUS THREE
01172	0760 00 0 00001		LBT	TEST FOR ONE
01173	0020 00 0 01175		TRA A79+5	
01174	0020 00 0 01177		TRA A80	OK
01175	0074 00 4 07041		TSX ERROR-1,4	
01176	0020 00 0 01170		TRA A79	
01177	0771 00 0 00001	A80	ARS 1	CHECK FOR ZERO FIRST
01200	0760 00 0 00001		LBT	TEST FOR ZERO
01201	0020 00 0 01204		TRA A80+5	CHECK SIGN
01202	0074 00 4 07041		TSX ERROR-1,4	BIT ERROR
01203	0020 00 0 01170		TRA A79	
01204	-0120 00 0 01206		TMI A80+7	OK, SIGN IS MINUS
01205	0074 00 4 07042		TSX ERROR,4	
01206	0074 00 4 07047		TSX OK,4	
01207	0020 00 0 01170		TRA A79	REPEAT SECTION
01210	212424606060		BCD 1ADD	ADD TEST
01211	0500 00 0 06755	A81	CLA M2	MAKE ACC MINUS TWO
01212	0400 00 0 06745		ADD THREE	ADD PLUS THREE
01213	0760 00 0 00001		LBT	TEST FOR ONE
01214	0020 00 0 01216		TRA A81+5	
01215	0020 00 0 01220		TRA A82	OK, GOT A ONE
01216	0074 00 4 07041		TSX ERROR-1,4	
01217	0020 00 0 01211		TRA A81	
01220	0771 00 0 00001	A82	ARS 1	CHECK NEXT POSITION
01221	0760 00 0 00001		LBT	FOR A ZERO
01222	0020 00 0 01225		TRA A82+5	CHECK SIGN
01223	0074 00 4 07041		TSX ERROR-1,4	
01224	0020 00 0 01211		TRA A81	
01225	0120 00 0 01227		TPL A82+7	OK, PROCEED
01226	0074 00 4 07042		TSX ERROR,4	
01227	0074 00 4 07047		TSX OK,4	
01230	0020 00 0 01211		TRA A81	
01231	212424606060		BCD 1ADD	ADD TEST, WITH RIPPLE
01232	0500 00 0 06674	A82A	CLA PONES	BRING IN PLUS ONES
01233	0400 00 0 06701		ADD ONE	ADD ONE TO RIPPLE
01234	-0760 00 0 00001		PBT	P SHOULD HAVE BIT
01235	0020 00 0 01237		TRA A82A+5	NO P BIT
01236	0020 00 0 01241		TRA A82A+7	OK, CHECK OVFL
01237	0074 00 4 07041		TSX ERROR-1,4	
01240	0020 00 0 01232		TRA A82A	OK, PROCEED
01241	0140 00 0 01243		TOV A82A+9	

01242	0074	00	4	07042		TSX ERROR,4	
01243	0074	00	4	07047		TSX OK,4	
01244	0020	00	0	01232		TRA A82A	
01245	212444606060					BCD 1ADM	ADD MAGNITUDE TEST
01246	0500	00	0	06754	A83	CLA MONE	BRING IN MINUS ONE
01247	0401	00	0	06744		ADM TWO	ADD TWO
01250	0760	00	0	00001		LBT	SHOULD BE ONE.
01251	0020	00	0	01253		TRA A83+5	NO ONE
01252	0020	00	0	01255		TRA A83+7	OK, CHECK SIGN.
01253	0074	00	4	07041		TSX ERROR-1,4	
01254	0020	00	0	01246		TRA A83	OK, PROCEED
01255	0120	00	0	01257		TPL A83+9	MAKE SURE POSITIVE
01256	0074	00	4	07042		TSX ERROR,4	
01257	0074	00	4	07047		TSX OK,4	
01260	0020	00	0	01246		TRA A83	
01261	212444606060					BCD 1ADM	ADD MAGNITUDE TEST
01262	0500	00	0	06754	A83A	CLA MONE	BRING IN MINUS ONE
01263	0401	00	0	06755		ADM M2	ADD MINUS 2
01264	0760	00	0	00001		LBT	SHOULD NOT BE ONE
01265	0020	00	0	01267		TRA A83A+5	OK, CHECK SIGN
01266	0020	00	0	01271		TRA A83A+7	
01267	0074	00	4	07041		TSX ERROR-1,4	
01270	0020	00	0	01262		TRA A83A	OK, PROCEED
01271	0120	00	0	01273		TPL A83A+9	CHECK SIGN
01272	0074	00	4	07042		TSX ERROR,4	
01273	0074	00	4	07047		TSX OK,4	OK, PROCEED
01274	0020	00	0	01262		TRA A83A	
01275	212444606060					BCD 1ADM	ADD MAGNITUDE TEST OVERFLOW
01276	0500	00	0	06674	A84	CLA PONES	GET ALL ONES
01277	0401	00	0	06754		ADM MONE	ADD MINUS ONE
01300	-0760	00	0	00001		PBT	SHOULD BE PLUS
01301	0020	00	0	01303		TRA A84+5	
01302	0020	00	0	01305		TRA A84+7	
01303	0074	00	4	07041		TSX ERROR-1,4	
01304	0020	00	0	01276		TRA A84	OK, PROCEED
01305	0140	00	0	01307		TOV A84+9	CHECK FOR OVERFLOW
01306	0074	00	4	07042		TSX ERROR,4	
01307	0074	00	4	07047		TSX OK,4	OK, PROCEED
01310	0020	00	0	01276		TRA A84	
01311	626422606060					BCD 1SUB	CHECK SUBTRACT
01312	0500	00	0	06701	A85	CLA ONE	LOAD ONE
01313	0402	00	0	06754		SUB MONE	SUBTRACT MINUS ONE
01314	0760	00	0	00001		LBT	SHOULD NOT BE SET
01315	0020	00	0	01320		TRA A85+6	
01316	0074	00	4	07041		TSX ERROR-1,4	

01317	0020	00	0	01312		TRA	A85	
01320	0120	00	0	01323		TPL	A86	OK, PROCEED
01321	0074	00	4	07041		TSX	ERROR-1,4	
01322	0020	00	0	01312		TRA	A85	
01323	0771	00	0	00001	A86	ARS	1	IN ACC POS 34
01324	0760	00	0	00001		LBT		
01325	0074	00	4	07042		TSX	ERROR,4	NO ONE BIT
01326	0074	00	4	07047		TSX	OK,4	OK, GOT A ONE BIT
01327	0020	00	0	01312		TRA	A85	REPEAT SECTION
01330	626422606060					BCD	1SUB	SUB TEST
01331	0500	00	0	06754	A87	CLA	MONE	MAKE ACC MINUS ONE
01332	0402	00	0	06701		SUB	ONE	SUB PLUS ONE
01333	0760	00	0	00001		LBT		TEST FOR ZERO
01334	0020	00	0	01337		TRA	A87+6	OK, CHECK SIGN
01335	0074	00	4	07041		TSX	ERROR-1,4	
01336	0020	00	0	01331		TRA	A87	
01337	-0120	00	0	01342		TMI	A88	OK, PROCEED
01340	0074	00	4	07041		TSX	ERROR-1,4	
01341	0020	00	0	01331		TRA	A87	
01342	0771	00	0	00001	A88	ARS	1	CHECK FOR ONE IN POS 34
01343	0760	00	0	00001		LBT		SHOULD GET A ONE
01344	0074	00	4	07042		TSX	ERROR,4	NO, DID NOT GET IT
01345	0074	00	4	07047		TSX	OK,4	OK, PROCEED
01346	0020	00	0	01331		TRA	A87	
01347	626422606060					BCD	1SUB	SUB TEST, END CARRY
01350	0500	00	0	06745	A89	CLA	THREE	ACC PLUS THREE
01351	0402	00	0	06744		SUB	TWO	SUB PLUS TWO
01352	0760	00	0	00001		LBT		SHOULD HAVE PLUS ONE
01353	0020	00	0	01355		TRA	A89+5	DID NOT GET ONE
01354	0020	00	0	01357		TRA	A89+7	OK, CHECK SIGN
01355	0074	00	4	07041		TSX	ERROR-1,4	
01356	0020	00	0	01350		TRA	A89	
01357	0120	00	0	01361		TPL	A89+9	OK PROCEED
01360	0074	00	4	07042		TSX	ERROR,4	
01361	0074	00	4	07047		TSX	OK,4	
01362	0020	00	0	01350		TRA	A89	
01363	626422606060					BCD	1SUB	SUB TEST, NO END CARRY
01364	0500	00	0	06744	A90	CLA	TWO	ACC PLUS TWO
01365	0402	00	0	06745		SUB	THREE	SUB PLUS THREE
01366	0760	00	0	00001		LBT		TEST FOR ONE
01367	0020	00	0	01371		TRA	A90+5	NO GOT ERROR
01370	0020	00	0	01373		TRA	A90+7	OK, PROCEED
01371	0074	00	4	07041		TSX	ERROR-1,4	

01372	0020	00	0	01364		TRA	A90	
01373	-0120	00	0	01376		TMI	A91	OK, PROCEED
01374	0074	00	4	07041		TSX	ERROR-1,4	
01375	0020	00	0	01364		TRA	A90	
01376	0771	00	0	00001	A91	ARS	1	CHECK ACC POS 34
01377	0760	00	0	00001		LBT		SHOULD BE ZERO
01400	0020	00	0	01402		TRA	A91+4	OK IT IS ZERO
01401	0074	00	4	07042		TSX	ERROR,4	
01402	0074	00	4	07047		TSX	OK,4	
01403	0020	00	0	01364		TRA	A90	REPEAT SECTION
01404	626422606060					BCD	1SUB	SUB TEST, NO END CARRY
01405	0500	00	0	06755	A92	CLA	M2	ACC MINUS TWO
01406	0402	00	0	06772		SUB	M3	SUB MINUS THREE
01407	0760	00	0	00001		LBT		TEST FOR ONE
01410	0020	00	0	01412		TRA	A92+5	NO GOT A ZERO
01411	0020	00	0	01414		TRA	A92+7	OK CHECK SIGN
01412	0074	00	4	07041		TSX	ERROR-1,4	
01413	0020	00	0	01405		TRA	A92	
01414	0120	00	0	01417		TPL	A93	OK PROCEED
01415	0074	00	4	07041		TSX	ERROR-1,4	
01416	0020	00	0	01405		TRA	A92	
01417	0771	00	0	00001	A93	ARS	1	CHECK POSITION 34 OF ACC
01420	0760	00	0	00001		LBT		SHOULD BE ZERO
01421	0020	00	0	01423		TRA	A93+4	OK
01422	0074	00	4	07042		TSX	ERROR,4	NO GOOD
01423	0074	00	4	07047		TSX	OK,4	
01424	0020	00	0	01405		TRA	A92	
01425	626422606060					BCD	1SUB	SUB TEST, END CARRY
01426	0500	00	0	06772	A94	CLA	M3	ACC MINUS THREE
01427	0402	00	0	06755		SUB	M2	SUB MINUS TWO
01430	0760	00	0	00001		LBT		TEST FOR ONE
01431	0020	00	0	01433		TRA	A94+5	NO GOOD, GO A ZERO
01432	0020	00	0	01435		TRA	A94+7	OK, CHECK SIGN
01433	0074	00	4	07041		TSX	ERROR-1,4	
01434	0020	00	0	01426		TRA	A94	
01435	-0120	00	0	01440		TMI	A95	OK, PROCEED
01436	0074	00	4	07041		TSX	ERROR-1,4	
01437	0020	00	0	01426		TRA	A94	
01440	0771	00	0	00001	A95	ARS	1	CHECK POSITION 34 OF ACC
01441	0760	00	0	00001		LBT		SHOULD BE ZERO
01442	0020	00	0	01444		TRA	A95+4	OK IT IS ZERO
01443	0074	00	4	07042		TSX	ERROR,4	NO GOOD, GOT A ONE
01444	0074	00	4	07047		TSX	OK,4	

01445	0020	00	0	01426		TRA	A94	
01446	626422606060					BCD	1SUB	SUB TEST, WITH RIPPLE
01447	0500	00	0	06676	A95A	CLA	ONES	BRING IN MINUS ONES
01450	0402	00	0	06701		SUB	ONE	SUB PLUS ONE
01451	-0760	00	0	00001		PBT		SHOULD GET BIT IN P
01452	0020	00	0	01454		TRA	A95A+5	NO BIT IN P
01453	0020	00	0	01456		TRA	A95A+7	OK, CHECK OVFL
01454	0074	00	4	07041		TSX	ERROR-1,4	
01455	0020	00	0	01447		TRA	A95A	
01456	0140	00	0	01460		TOV	A95A+9	OK, PROCEED
01457	0074	00	4	07042		TSX	ERROR,4	
01460	0074	00	4	07047		TSX	OK,4	
01461	0020	00	0	01447		TRA	A95A	
01462	622244606060					BCD	1SBM	SBM TEST
01463	0500	00	0	06701	A96	CLA	ONE	ACC PLUS ONE
01464	-0400	00	0	06755		SBM	M2	SBM MINUS TWO
01465	0760	00	0	00001		LBT		TEST FOR ONE
01466	0020	00	0	01470		TRA	A96+5	NO GOOD, GOT ZERO
01467	0020	00	0	01472		TRA	A96+7	OK, CHECK SIGN
01470	0074	00	4	07041		TSX	ERROR-1,4	
01471	0020	00	0	01463		TRA	A96	
01472	-0120	00	0	01474		TMI	A96+9	OK, PROCEED
01473	0074	00	4	07042		TSX	ERROR,4	
01474	0074	00	4	07047		TSX	OK,4	
01475	0020	00	0	01463		TRA	A96	
01476	622244606060					BCD	1SBM	SBM TEST
01477	0500	00	0	06701	A97	CLA	ONE	ACC PLUS ONE
01500	-0400	00	0	06744		SBM	TWO	SBM PLUS TWO
01501	0760	00	0	00001		LBT		TEST FOR ONE
01502	0020	00	0	01504		TRA	A97+5	GOT ZERO
01503	0020	00	0	01506		TRA	A97+7	OK, CHECK SIGN
01504	0074	00	4	07041		TSX	ERROR-1,4	
01505	0020	00	0	01477		TRA	A97	
01506	-0120	00	0	01510		TMI	A97+9	OK, PROCEED
01507	0074	00	4	07042		TSX	ERROR,4	
01510	0074	00	4	07047		TSX	OK,4	
01511	0020	00	0	01477		TRA	A97	
01512	622244606060					BCD	1SBM	SBM TEST, WITH RIPPLE
01513	0500	00	0	06676	A97A	CLA	ONES	BRING IN MINUS ONES
01514	-0400	00	0	06701		SBM	ONE	SBM OF PLUS ONE
01515	-0760	00	0	00001		PBT		SHOULD BE BIT IN P
01516	0020	00	0	01520		TRA	A97A+5	NO BIT IN P
01517	0020	00	0	01522		TRA	A97A+7	OK, CHECK OVFL
01520	0074	00	4	07041		TSX	ERROR-1,4	
01521	0020	00	0	01513		TRA	A97A	

01522	0140	00	0	01524		TOV A97A+9	OK, PROCEED
01523	0074	00	4	07042		TSX ERROR,4	
01524	0074	00	4	07047		TSX OK,4	
01525	0020	00	0	01513		TRA A97A	
01526	234321606060					BCD 1CLA	CLA TEST
01527	0500	00	0	06754	A98	CLA MONE	MAKE ACC MINUS
01530	-0120	00	0	01532		TMI A98+3	CHECK SIGN LOADING
01531	0074	00	4	07042		TSX ERROR,4	NO, DID NOT BRING IN MINUS
01532	0074	00	4	07047		TSX OK,4	OK, PROCEED
01533	0020	00	0	01527		TRA A98	
01534	234321606060					BCD 1CLA	CLA TEST
01535	0500	00	0	06701	A99	CLA ONE	MAKE ACC PLUS
01536	0120	00	0	01540		TPL A99+3	CHECK SIGN, SHOULD BE PLUS
01537	0074	00	4	07042		TSX ERROR,4	NO GOOD
01540	0074	00	4	07047		TSX OK,4	
01541	0020	00	0	01535		TRA A99	
01542	234321606060					BCD 1CLA	CLA TEST
01543	0500	00	0	06675	A100	CLA ZERO	SEE IF ACC IS CLEAR
01544	0100	00	0	01546		TZE A100+3	OK, SHOULD BE ZERO
01545	0074	00	4	07042		TSX ERROR,4	NO GOOD
01546	0074	00	4	07047		TSX OK,4	
01547	0020	00	0	01543		TRA A100	
01550	234321606060					BCD 1CLA	CLA TEST
01551	0500	00	0	06751	B	CLA PTW	BIT IN ACC 1
01552	0767	00	0	00001		ALS 1	SHIFT TO P POSITION
01553	-0760	00	0	00001		PBT	TEST P FOR A ONE
01554	0020	00	0	01556		TRA B+5	NO, GOT A ZERO
01555	0020	00	0	01560		TRA B+7	OK, CHECK OVFL
01556	0074	00	4	07041		TSX ERROR-1,4	
01557	0020	00	0	01551		TRA B	
01560	0140	00	0	01562		TOV B+9	OK, PROCEED
01561	0074	00	4	07042		TSX ERROR,4	
01562	0074	00	4	07047		TSX OK,4	
01563	0020	00	0	01551		TRA B	
01564	234321606060					BCD 1CLA	CLA TEST
01565	0500	00	0	06701	B1	CLA ONE	SEE IF Q AND P POS ARE CLEAR
01566	-0760	00	0	00001		PBT	P POS SHOULD BE ZERO
01567	0020	00	0	01572		TRA B1+5	OK, NOW TEST Q POS
01570	0074	00	4	07041		TSX ERROR-1,4	
01571	0020	00	0	01565		TRA B1	
01572	0771	00	0	00001		ARS 1	SHIFT FOR Q
01573	-0760	00	0	00001		PBT	Q POS SHOULD BE ZERO

01574	0020	00	0	01577		TRA B1+10	OK, CHECK OVFL
01575	0074	00	4	07041		TSX ERROR-1,4	
01576	0020	00	0	01565		TRA B1	
01577	-0140	00	0	01601		TNO B1+12	OK, OVFL SHOULD BE OFF
01600	0074	00	4	07042		TSX ERROR,4	
01601	0074	00	4	07047		TSX OK,4	
01602	0020	00	0	01565		TRA B1	
01603	234321606060					BCD 1CLA	CLA TEST
01604	0500	00	0	06701	B2	CLA ONE	SEE THAT ONE IS IN ACC 35
01605	0760	00	0	00001		LBT	IS ONE THERE
01606	0074	00	4	07042		TSX ERROR,4	NO
01607	0074	00	4	07047		TSX OK,4	YES, ONE IS THERE
01610	0020	00	0	01604		TRA B2	
01611	234321606060					BCD 1CLA	CLA TEST, WITH RIPPLE
01612	0500	00	0	06674	B3	CLA PONES	BRING IN PLUS ONES
01613	0400	00	0	06701		ADD ONE	ADD ONE
01614	0760	00	0	00001		LBT	CHECK ACC 35 FOR ZERO
01615	0020	00	0	01620		TRA B3+6	OK, IS ZERO
01616	0074	00	4	07041		TSX ERROR-1,4	
01617	0020	00	0	01612		TRA B3	
01620	-0760	00	0	00001		PBT	TEST P POS FOR ONE
01621	0020	00	0	01623		TRA B3+9	ERROR
01622	0020	00	0	01625		TRA B3+11	OK, CHECK ACC RESULT
01623	0074	00	4	07041		TSX ERROR-1,4	
01624	0020	00	0	01612		TRA B3	
01625	0767	00	0	00002		ALS 2	OK, CHECK FOR ZERO IN OTHER
01626	0100	00	0	01630		TZE B3+14	POS BY MOVING BIT PAST Q
01627	0074	00	4	07042		TSX ERROR,4	NO GOOD, PICKED UP A BIT
01630	0074	00	4	07047		TSX OK,4	OK
01631	0020	00	0	01612		TRA B3	
01632	234362606060					BCD 1CLS	CLS TEST
01633	0502	00	0	06754	B4	CLS MONE	BRING IN MINUS ONE
01634	0120	00	0	01636		TPL B4+3	SHOULD BECOME PLUS
01635	0074	00	4	07042		TSX ERROR,4	DID NOT CHANGE SIGN
01636	0074	00	4	07047		TSX OK,4	
01637	0020	00	0	01633		TRA B4	
01640	234362606060					BCD 1CLS	CLS TEST
01641	0502	00	0	06701	B5	CLS ONE	BRING IN ONE
01642	-0120	00	0	01644		TMI B5+3	SHOULD BE MINUS
01643	0074	00	4	07042		TSX ERROR,4	DID NOT CHANGE SIGN
01644	0074	00	4	07047		TSX OK,4	
01645	0020	00	0	01641		TRA B5	
01646	234362606060					BCD 1CLS	CLS TEST

01647	0502	00	0	06701	B6	CLS ONE	BRING IN ONE IN ACC 35
01650	0760	00	0	00001		LBT	CHECK, IS ONE IN ACC 35
01651	0020	00	0	01653		TRA B6+4	NO GOOD, DID NOT GET ONE
01652	0020	00	0	01655		TRA B6+6	PROCEED
01653	0074	00	4	07041		TSX ERROR-1,4	
01654	0020	00	0	01647		TRA B6	
01655	-0760	00	0	00001		PBT	SEE IF P IS CLEAR
01656	0020	00	0	01661		TRA B6+10	OK, PROCEED
01657	0074	00	4	07041		TSX ERROR-1,4	
01660	0020	00	0	01647		TRA B6	
01661	0771	00	0	00001		ARS 1	SHIFT TO CHECK Q
01662	-0760	00	0	00001		PBT	SHOULD BE ZERO
01663	0020	00	0	01665		TRA B6+14	OK, IT IS ZERO, PROCEED
01664	0074	00	4	07042		TSX ERROR,4	NO GOOD
01665	0074	00	4	07047		TSX OK,4	OK, THERE WAS A ZERO THERE
01666	0020	00	0	01647		TRA B6	
01667	232143606060					BCD 1CAL	CAL TEST
01670	-0500	00	0	06754	B7	CAL MONE	CHECK THAT P HAS ONE
01671	-0760	00	0	00001		PBT	SHOULD HAVE ONE
01672	0020	00	0	01674		TRA B7+4	
01673	0020	00	0	01676		TRA B8	OK, PROCEED
01674	0074	00	4	07041		TSX ERROR-1,4	
01675	0020	00	0	01670		TRA B7	
01676	0120	00	0	01701	B8	TPL B8+3	CHECK THAT SIGN DID NOT CHANGE
01677	0074	00	4	07041		TSX ERROR-1,4	
01700	0020	00	0	01670		TRA B7	
01701	0771	00	0	00001		ARS 1	
01702	-0760	00	0	00001		PBT	CHECK Q POS
01703	0020	00	0	01705		TRA B8+7	SHOULD BE ZERO
01704	0074	00	4	07042		TSX ERROR,4	OK, PROCEED
01705	0074	00	4	07047		TSX OK,4	NO GOOD
01706	0020	00	0	01670		TRA B7	
01707	232143606060					BCD 1CAL	CAL TEST
01710	-0500	00	0	06701	B9	CAL ONE	BRING IN PLUS ONE
01711	-0760	00	0	00001		PBT	P SHOULD BE ZERO
01712	0020	00	0	01715		TRA B9+5	OK, PROCEED
01713	0074	00	4	07041		TSX ERROR-1,4	
01714	0020	00	0	01710		TRA B9	
01715	0760	00	0	00001		LBT	TEST ACC 35 FOR ONE
01716	0020	00	0	01720		TRA B9+8	DID NOT BRING IN A ONE
01717	0020	00	0	01722		TRA B10	OK, PROCEED
01720	0074	00	4	07041		TSX ERROR-1,4	
01721	0020	00	0	01710		TRA B9	
01722	0120	00	0	01725	B10	TPL B10+3	SIGN SHOULD BE PLUS

01723	0074	00	4	07041		TSX ERROR-1,4	ERROR CHANGE OF SIGN
01724	0020	00	0	01710		TRA B9	
01725	0771	00	0	00001		ARS 1	CHECK Q POS FOR ZERO
01726	-0760	00	0	00001		PBT	
01727	0020	00	0	01731		TRA B10+7	OK, PROCEED
01730	0074	00	4	07042		TSX ERROR,4	NO GOOD
01731	0074	00	4	07047		TSX OK,4	OK, PROCEED
01732	0020	00	0	01710		TRA B9	
01733	212343606060					BCD 1ACL	ACL TEST
01734	0500	00	0	06675	B11	CLA ZERO	CHECK P POSITION AND SIGN
01735	0361	00	0	06701		ACL ONE	POSITION
01736	-0760	00	0	00001		PBT	SHOULD BE A ZERO IN A
01737	0020	00	0	01742		TRA B11+6	CHECK SIGN
01740	0074	00	4	07041		TSX ERROR-1,4	
01741	0020	00	0	01734		TRA B11	
01742	0120	00	0	01744		TPL B11+8	OK, PROCEED
01743	0074	00	4	07042		TSX ERROR,4	
01744	0074	00	4	07047		TSX OK,4	
01745	0020	00	0	01734		TRA B11	
01746	212343606060					BCD 1ACL	ACL TEST
01747	0500	00	0	06675	B12	CLA ZERO	BRING IN MINUS NUMBER
01750	0361	00	0	06754		ACL MONE	SHOULD GET ONE IN P POS
01751	-0760	00	0	00001		PBT	
01752	0020	00	0	01754		TRA B12+5	NO GOOD, GOT ZERO
01753	0020	00	0	01756		TRA B12+7	CHECK SIGN
01754	0074	00	4	07041		TSX ERROR-1,4	
01755	0020	00	0	01747		TRA B12	
01756	0120	00	0	01761		TPL B12+10	OK, PROCEED
01757	0074	00	4	07041		TSX ERROR-1,4	ERROR, CHANGE OF SIGN
01760	0020	00	0	01747		TRA B12	
01761	0760	00	0	00001		LBT	CHECK FOR ONE IN ACL 35
01762	0074	00	4	07042		TSX ERROR,4	GOT A FALSE CARRY
01763	0074	00	4	07047		TSX OK,4	
01764	0020	00	0	01747		TRA B12	
01765	212343606060					BCD 1ACL	ACL TEST
01766	-0500	00	0	06754	B13	CAL MONE	ACC BIT IN POS P AND POS 35
01767	0361	00	0	06754		ACL MONE	ACL MINUS ONE
01770	-0760	00	0	00001		PBT	SHOULD GET ZERO IN P
01771	0020	00	0	01774		TRA B13+6	OK, PROCEED
01772	0074	00	4	07041		TSX ERROR-1,4	
01773	0020	00	0	01766		TRA B13	
01774	0760	00	0	00001		LBT	TEST FOR XXX CARRY
01775	0020	00	0	01777		TRA B13+9	NO GOOD, GOT A ZERO
01776	0020	00	0	02001		TRA B13+11	OK, PROCEED

01777	0074	00	4	07041		TSX ERROR-1,4	
02000	0020	00	0	01766		TRA B13	
02001	0771	00	0	00001		ARS 1	OK, NOW SEE IF Q BIT
02002	-0760	00	0	00001		PBT	HAS A ONE
02003	0020	00	0	02005		TRA B13+15	Q SHOULD BE CLEARED
02004	0074	00	4	07042		TSX ERROR,4	ERROR, GOT A ONE IN POS Q
02005	0074	00	4	07047		TSX OK,4	
02006	0020	00	0	01766		TRA B13	
02007	626346606060					BCD 1STO	STO TEST
02010	0500	00	0	06676	B14	CLA ONES	BRING IN ALL ONES
02011	0601	00	0	07037		STO TEMP	PLACE IN TEMP STORAGE
02012	0402	00	0	07037		SUB TEMP	SUB SAME QUANTITY
02013	0100	00	0	02015		TZE B14+5	SHOULD BE ZERO
02014	0074	00	4	07042		TSX ERROR,4	ERROR DID NOT STO RIGHT
02015	0074	00	4	07047		TSX OK,4	
02016	0020	00	0	02010		TRA B14	
02017	624366606060					BCD 1SLW	SLW TEST
02020	-0500	00	0	06754	B15	CAL MONE	PUT BIT IN POS P AND POS 35
02021	0120	00	0	02024		TPL B15+4	OK, SIGN SHOULD BE PLUS
02022	0074	00	4	07041		TSX ERROR-1,4	
02023	0020	00	0	02020		TRA B15	
02024	0602	00	0	07037		SLW TEMP	SLW IN TEMP STORAGE
02025	0500	00	0	07037		CLA TEMP	BRING WORD BACK
02026	0402	00	0	06754		SUB MONE	SUB ORIGINAL
02027	0100	00	0	02031		TZE B15+9	OK, SHOULD GET ZERO
02030	0074	00	4	07042		TSX ERROR,4	
02031	0074	00	4	07047		TSX OK,4	
02032	0020	00	0	02020		TRA B15	
02033	624366606060					BCD 1SLW	SLW TEST
02034	0500	00	0	06754	B16	CLA MONE	PUT BIT IN P, SIGN MINUS
02035	0602	00	0	07037		SLW TEMP	SLW IN TEMP STORAGE
02036	0500	00	0	07037		CLA TEMP	BRING IT TO ACC
02037	0120	00	0	02041		TPL B16+5	SIGN SHOULD NOW BE PLUS
02040	0074	00	4	07042		TSX ERROR,4	
02041	0074	00	4	07047		TSX OK,4	
02042	0020	00	0	02034		TRA B16	
02043	626347606060					BCD 1STP	STP TEST
02044	0500	00	0	06675	B17	CLA ZERO	INITIALIZE TEMP STORAGE
02045	0601	00	0	07037		STO TEMP	
02046	0500	00	0	06776		CLA KK33	L-252525525252
02047	0630	00	0	07037		STP TEMP	STP IN TEMP STORAGE
02050	0500	00	0	07037		CLA TEMP	BRING BACK, SIGN IS PLUS
02051	0120	00	0	02054		TPL B17+8	SHOULD BE PLUS
02052	0074	00	4	07041		TSX ERROR-1,4	
02053	0020	00	0	02044		TRA B17	

02054	0767	00	0	00001	ALS 1	CHECK ACC POS 1
02055	-0760	00	0	00001	PBT	SHOULD BE ONE
02056	0020	00	0	02060	TRA B17+12	ERROR IN ONE POS
02057	0020	00	0	02062	TRA B17+14	OK, PROCEED
02060	0074	00	4	07041	TSX ERROR-1,4	
02061	0020	00	0	02044	TRA B17	
02062	0140	00	0	02065	TOV B17+17	OVFL SHOULD BE ON
02063	0074	00	4	07041	TSX ERROR-1,4	
02064	0020	00	0	02044	TRA B17	
02065	0767	00	0	00001	ALS 1	CHECK ACC POS 2
02066	-0760	00	0	00001	PBT	SHOULD BE ZERO
02067	0020	00	0	02072	TRA *+3	
02070	0074	00	4	07041	TSX ERROR-1,4	
02071	0020	00	0	02044	TRA B17	
02072	0767	00	0	00001	ALS 1	CLEAR Q
02073	0100	00	0	02075	TZE *+2	TEMP OK
02074	0074	00	4	07042	TSX ERROR,4	
02075	0074	00	4	07047	TSX OK,4	
02076	0020	00	0	02044	TRA B17	
02077	626347606060				BCD 1STP	STP TEST
02100	0500	00	0	06675	B18 CLA ZERO	INITIALIZE TEMP STORAGE
02101	0601	00	0	07037	STO TEMP	
02102	0500	00	0	06675	CLA ZERO	BRING IN PLUS ZERO
02103	0630	00	0	07037	STP TEMP	STORE P, 1, 2, ZEROS
02104	0500	00	0	07037	CLA TEMP	BRING BACK TO ACC
02105	0120	00	0	02110	TPL B18+8	OK, SHOULD BE PLUS
02106	0074	00	4	07041	TSX ERROR-1,4	
02107	0020	00	0	02100	TRA B18	
02110	0767	00	0	00001	ALS 1	CHECK ONE POSITION
02111	-0760	00	0	00001	PBT	SHOULD BE ZERO
02112	0020	00	0	02115	TRA B18+13	OK, CHECK OVFL
02113	0074	00	4	07041	TSX ERROR-1,4	
02114	0020	00	0	02100	TRA B18	
02115	-0140	00	0	02120	TNO B18+16	OK, OVFL SHOULD BE OFF
02116	0074	00	4	07041	TSX ERROR-1,4	
02117	0020	00	0	02100	TRA B18	
02120	0767	00	0	00001	ALS 1	CHECK TWO POSITION
02121	-0760	00	0	00001	PBT	SHOULD BE ZERO
02122	0020	00	0	02125	TRA B18+21	OK, CHECK OVFL
02123	0074	00	4	07041	TSX ERROR-1,4	
02124	0020	00	0	02100	TRA B18	
02125	-0140	00	0	02127	TNO B18+23	OK, OVFL SHOULD BE OFF
02126	0074	00	4	07042	TSX ERROR,4	NO GOOD
02127	0074	00	4	07047	TSX OK,4	
02130	0020	00	0	02100	TRA B18	
02131	626347606060				BCD 1STP	STP TEST

02132	0500	00	0	06675	B19	CLA ZERO	INITIALIZE TEMP STORAGE
02133	0601	00	0	07037		STO TEMP	
02134	-0500	00	0	06676		CAL ONES	BRING IN ONES, CHECK POS
02135	0767	00	0	00001		ALS 1	P AND POS Q
02136	0630	00	0	07037		STP TEMP	STO IN TEMP STORAGE
02137	0771	00	0	00001		ARS 1	DID CLEAR Q POSITION
02140	-0760	00	0	00001		PBT	
02141	0020	00	0	02143		TRA B19+9	NO GOOD, GOT ZERO
02142	0020	00	0	02145		TRA B19+11	CHECK SIGN
02143	0074	00	4	07041		TSX ERROR-1,4	
02144	0020	00	0	02132		TRA B19	
02145	0120	00	0	02150		TPL B19+14	
02146	0074	00	4	07041		TSX ERROR-1,4	
02147	0020	00	0	02132		TRA B19	
02150	0500	00	0	07037		CLA TEMP	BRING BACK CONTENTS OF TEMP
02151	-0120	00	0	02153		TMI B19+17	OK, GOT P POS IN STORAGE
02152	0074	00	4	07042		TSX ERROR,4	
02153	0074	00	4	07047		TSX OK,4	
02154	0020	00	0	02132		TRA B19	
02155	626321606060					BCD 1STA	STA TEST
02156	0500	00	0	07004	B20	CLA RTN	SET UP ERROR TRA B20+7
02157	0601	00	0	07037		STO TEMP	IN STORAGE IF STA FAILS
02160	0500	00	0	07005		CLA RTN+1	SET UP ERROR TRA B20+5
02161	0621	00	0	07037		STA TEMP	PLACE IT IN STORAGE
02162	0020	00	0	07037		TRA TEMP	GO THERE AND MAKE TRANSFER
02163	0402	00	0	07005		SUB RTN+1	SEE IF ACC REMAINS SAME
02164	0100	00	0	02166		TZE B20+8	OK, CHECKS OUT
02165	0074	00	4	07042		TSX ERROR,4	
02166	0074	00	4	07047		TSX OK,4	
02167	0020	00	0	02156		TRA B20	
02170	626321606060					BCD 1STA	STA TEST
02171	0500	00	0	06675	B21	CLA ZERO	INITIALIZE TEMP STORAGE
02172	0601	00	0	07037		STO TEMP	WITH ZERO
02173	0500	00	0	06676		CLA ONES	ALL ONES
02174	0621	00	0	07037		STA TEMP	PLACE ONES IN TEMP STORE
02175	0500	00	0	07037		CLA TEMP	BRING IT TO ACC
02176	0402	00	0	06747		SUB 8CF	SUB 8CF
02177	0100	00	0	02201		TZE B21+8	OK
02200	0074	00	4	07042		TSX ERROR,4	
02201	0074	00	4	07047		TSX OK,4	
02202	0020	00	0	02171		TRA B21	
02203	626321606060					BCD 1STA	STA TEST
02204	0500	00	0	06747	B22	CLA 8CF	INITIALIZE TEMP STORAGE
02205	0601	00	0	07037		STO TEMP	WITH ONES IN POS 21-35
02206	0500	00	0	06675		CLA ZERO	BRING ZERO INTO ACC
02207	0621	00	0	07037		STA TEMP	STA IN TEMP STORAGE
02210	0500	00	0	07037		CLA TEMP	BRING IT BACK

02211	0100 00 0	02213	TZE B22+7	OK, REPLACE ONES WITH ZEROS
02212	0074 00 4	07042	TSX ERROR, 4	
02213	0074 00 4	07047	TSX OK, 4	
02214	0020 00 0	02204	TRA B22	
02215	626324606060		BCD 1STD	STD TEST
02216	0500 00 0	06777	B23 CLA KK34	L+252525000000
02217	0601 00 0	07037	STO TEMP	SAVE ACC
02220	0500 00 0	06775	CLA KK32	L+000000252525
02221	0622 00 0	07037	STD TEMP	SAVE DECREMENT
02222	0500 00 0	07037	CLA TEMP	L SAVED LOCATION
02223	0402 00 0	06751	SUB PTW	L+2000000000
02224	0100 00 0	02226	TZE B23+8	OK, SHOULD GET ZERO
02225	0074 00 4	07042	TSX ERROR, 4	
02226	0074 00 4	07047	TSX OK, 4	
02227	0020 00 0	02216	TRA B23	
02230	626324606060		BCD 1STD	STD TEST
02231	0500 00 0	06711	B24 CLA K12	L+0000037777777
02232	0402 00 0	06707	SUB K10	L-300000000000
02233	0601 00 0	07037	STO TEMP	SAVE ACC
02234	0500 00 0	06676	CLA ONES	L-3777777777777
02235	0622 00 0	07037	STD TEMP	SAVE DECREMENT
02236	0400 00 0	07037	ADD TEMP	SHOULD BE L+37777777777
02237	0100 00 0	02241	TZE B24+8	OK
02240	0074 00 4	07042	TSX ERROR, 4	
02241	0074 00 4	07047	TSX OK, 4	
02242	0020 00 0	02231	TRA B24	
02243	232162606060		BCD 1CAS	CAS TEST
02244	0500 00 0	06745	B25 CLA THREE	MAKE ACC GRATER THEN
02245	0340 00 0	06744	CAS TWO	STORAGE, SIGNS PLUS
02246	0020 00 0	02251	TRA B25+5	OK, PROCEED
02247	0020 00 0	02250	TRA B25+4	SHOULD NOT BE EQUAL
02250	0074 00 4	07042	TSX ERROR, 4	SHOULD NOT BE LESS
02251	0074 00 4	07047	TSX OK, 4	
02252	0020 00 0	02244	TRA B25	
02253	232162606060		BCD 1CAS	CAS TEST
02254	0500 00 0	06744	B26 CLA TWO	MAKE ACC GREATER THEN
02255	0340 00 0	06772	CAS M3	STORAGE, SIGNS UNLIKE
02256	0020 00 0	02261	TRA B26+5	SHOULD NOT BE EQUAL
02257	0020 00 0	02260	TRA B26+4	SHOULD NOT BE LESS
02260	0074 00 4	07042	TSX ERROR, 4	
02261	0074 00 4	07047	TSX OK, 4	
02262	0020 00 0	02254	TRA B26	
02263	232162606060		BCD 1CAS	CAS TEST
02264	0500 00 0	06755	B27 CLA M2	MAKE ACC GREATER THEN
02265	0340 00 0	06772	CAS M3	STORAGE, SIGNS MINUS

02266	0020	00	0	02271		TRA B27+5	OK, PROCEED
02267	0020	00	0	02270		TRA B27+4	SHOULD NOT BE EQUAL
02270	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE LESS
02271	0074	00	4	07047		TSX OK, 4	
02272	0020	00	0	02264		TRA B27	
02273	232162606060					BCD 1CAS	CAS TEST
02274	0500	00	0	06744	B28	CLA TWO	MAKE ACC LESS THAN
02275	0340	00	0	06745		CAS THREE	STORAGE, SIGNS PLUS
02276	0020	00	0	02277		TRA B28+3	SHOULD NOT BE GREATER
02277	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE EQUAL
02300	0074	00	4	07047		TSX OK, 4	OK, PROCEED
02301	0020	00	0	02274		TRA B28	
02302	232162606060					BCD 1CAS	CAS TEST
02303	0500	00	0	06772	B29	CLA M3	MAKE ACC LES THAN
02304	0340	00	0	06744		CAS TWO	STORAGE, SIGNS PLUS
02305	0020	00	0	02306		TRA B29+3	SHOULD NOT BE GREATER
02306	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE EQUAL
02307	0074	00	4	07047		TSX OK, 4	OK, PROCEED
02310	0020	00	0	02303		TRA B29	
02311	232162606060					BCD 1CAS	CAS TEST
02312	0500	00	0	06772	B30	CLA M3	MAKE ACC LES THAN
02313	0340	00	0	06755		CAS M2	STORAGE, SIGNS UNLIKE
02314	0020	00	0	02315		TRA B30+3	SHOULD NOT BE GREATER
02315	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE EQUAL
02316	0074	00	4	07047		TSX OK, 4	OK, PROCEED
02317	0020	00	0	02312		TRA B30	
02320	232162606060					BCD 1CAS	CAS TEST
02321	0500	00	0	06744	B31	CLA TWO	
02322	0340	00	0	06744		CAS TWO	
02323	0020	00	0	02325		TRA B31+4	SHOULD NOT BE GREATER
02324	0020	00	0	02326		TRA B31+5	OK, PROCEED
02325	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE LESS
02326	0074	00	4	07047		TSX OK, 4	
02327	0020	00	0	02321		TRA B31	
02330	232162606060					BCD 1CAS	CAS TEST PLUS ZERO AND
							MINUS ZERO
02331	0500	00	0	06675	B32	CLA ZERO	MAKE ACC GREATER THAN
02332	0340	00	0	06702		CAS MZE	STORAGE
02333	0020	00	0	02336		TRA B32+5	OK, PROCEED
02334	0020	00	0	02335		TRA B32+4	SHOULD NOT BE EQUAL
02335	0074	00	4	07042		TSX ERROR, 4	SHOULD NOT BE LESS
02336	0074	00	4	07047		TSX OK, 4	
02337	0020	00	0	02331		TRA B32	
02340	232162606060					BCD 1CAS	CAS TEST COMAPRE ALL

ONES WITH ALL ONES

02341	0500	00	0	06676	B32A	CLA ONES	L ONES
02342	0340	00	0	06676		CAS ONES	
02343	0020	00	0	02345		TRA B32A+4	ERROR
02344	0020	00	0	02346		TRA B32A+5	OK-PROCEED
02345	0074	00	4	07042		TSX ERROR,4	ERROR IN CAS WITH ONES
02346	0074	00	4	07047		TSX OK,4	
02347	0020	00	0	02341		TRA B32A	
02350	432450606060					BCD 1LDQ	LDQ TEST
02351	0500	00	0	06675	B33	CLA ZERO	CLEAR ACC AND MQ TO START
02352	0765	00	0	00044		LRS 36	
02353	0560	00	0	06676		LDQ ONES	BRING IN ALL ONES TO MQ
02354	0763	00	0	00000		LLS 0	SHIFT SIGNS
02355	-0120	00	0	02360		TMI B33+7	OK, SIGN IS MINUS
02356	0074	00	4	07041		TSX ERROR-1,4	
02357	0020	00	0	02351		TRA B33	
02360	0763	00	0	00043		LLS 35	SHIFT ONES TO ACC
02361	0140	00	0	02362		TOV B33+9	TURN OFF OVFL
02362	0400	00	0	06754		ADD MONE	ADD MINUS ONE TO RIPPLE
02363	0140	00	0	02366		TOV B33+13	SHOULD OVFL
02364	0074	00	4	07041		TSX ERROR-1,4	
02365	0020	00	0	02351		TRA B33	
02366	0767	00	0	00002		ALS 2	REMOVE P AND Q POSITION
02367	0100	00	0	02371		TZE B33+16	OK, SHOULD GET ZERO NOW
02370	0074	00	4	07042		TSX ERROR,4	
02371	0074	00	4	07047		TSX OK,4	
02372	0020	00	0	02351		TRA B33	
02373	626350606060					BCD 1STQ	STQ TEST
02374	0560	00	0	06676	B34	LDQ ONES	BRING ALL ONES TO MQ
02375	-0600	00	0	07037		STQ TEMP	PLACE IN TEMP STORAGE
02376	0500	00	0	07037		CLA TEMP	BRING IN ACC
02377	-0120	00	0	02402		TMI B34+6	OK, SIGN IS MINUS
02400	0074	00	4	07041		TSX ERROR-1,4	
02401	0020	00	0	02374		TRA B34	
02402	0140	00	0	02403		TOV B34+7	TURN OFF OVFL
02403	0400	00	0	06754		ADD MONE	ADD MINUS ONE TO RIPPLE
02404	0140	00	0	02407		TOV B34+11	SHOULD OVFL
02405	0074	00	4	07041		TSX ERROR-1,4	
02406	0020	00	0	02374		TRA B34	
02407	0767	00	0	00002		ALS 2	REMOVE P AND Q POSITION
02410	0100	00	0	02412		TZE B34+14	SHOULD GET ZERO
02411	0074	00	4	07042		TSX ERROR,4	
02412	0074	00	4	07047		TSX OK,4	
02413	0020	00	0	02374		TRA B34	
02414	626350606060					BCD 1STQ	STQ TEST

02415	0560	00	0	06675	B35	LDQ ZERO	BRING IN ALL ZEROS TO MQ
02416	-0600	00	0	07037		STQ TEMP	PLACE IN TEMP STORAGE
02417	0500	00	0	07037		CLA TEMP	BRING IN ACC
02420	0100	00	0	02422		TZE B35+5	OK, SHOULD BE ZERO
02421	0074	00	4	07042		TSX ERROR, 4	
02422	0074	00	4	07047		TSX OK, 4	
02423	0020	00	0	02415		TRA B35	
02424	624350606060					BCD 1SLQ	SLQ TEST
02425	0500	00	0	06675	B36	CLA ZERO	MAKE ACC AND TEMP STORAGE
02426	0601	00	0	07037		STO TEMP	ALL ZEROS
02427	0560	00	0	06676		LDQ ONES	MAKE MQ ALL ONES
02430	-0620	00	0	07037		SLQ TEMP	PLACE S, 1-17 IN TEMP STORAGE
02431	0500	00	0	07037		CLA TEMP	BRING BACK TO ACC
02432	-0120	00	0	02435		TMI B36+8	SHOULD BE MINUS
02433	0074	00	4	07041		TSX ERROR-1, 4	
02434	0020	00	0	02425		TRA B36	
02435	0140	00	0	02436		TOV B36+9	TURN OFF OVFL
02436	0767	00	0	00001		ALS 1	SHIFT TO P POS UNTIL ONLY
02437	0140	00	0	02436		TOV B36+9	BIT LEFT IN Q
02440	-0100	00	0	02443		TNZ B36+14	OK, SHOULD NOT GET ZERO
02441	0074	00	4	07041		TSX ERROR-1, 4	
02442	0020	00	0	02425		TRA B36	
02443	0767	00	0	00002		ALS 2	OK, SHOULD BE ZERO
02444	-0140	00	0	02446		TNO B36+17	OK, SHOULD NOT GET EXTRA BITS
02445	0074	00	4	07042		TSX ERROR, 4	
02446	0074	00	4	07047		TSX OK, 4	
02447	0020	00	0	02425		TRA B36	
02450	624350606060					BCD 1SLQ	SLQ TEST
02451	0560	00	0	06675	B37	LDQ ZERO	BRING ZEROS TO MQ
02452	0500	00	0	06676		CLA ONES	PLACE ONES IN TEMP STORAGE
02453	0601	00	0	07037		STO TEMP	
02454	-0620	00	0	07037		SLQ TEMP	PLACE ZEROS IN S, 1-17
02455	0500	00	0	07037		CLA TEMP	OF ACC
02456	0771	00	0	00022		ARS 18	SHIFT ONES OUT
02457	0100	00	0	02461		TZE B37+8	OK, RESET SHOULD BE ZEROS
02460	0074	00	4	07042		TSX ERROR, 4	
02461	0074	00	4	07047		TSX OK, 4	
02462	0020	00	0	02451		TRA B37	
02463	634350606060					BCD 1TLQ	TLQ TEST
02464	0500	00	0	06744	B38	CLA TWO	MQ LESS THAN ACC
02465	0560	00	0	06772		LDQ M3	MQ MINUS 3 ACC PLUS 2
02466	0040	00	0	02470		TLQ B38+4	OK, SHOULD TRANSFER
02467	0074	00	4	07042		TSX ERROR, 4	
02470	0074	00	4	07047		TSX OK, 4	
02471	0020	00	0	02464		TRA B38	

02472	634350606060		BCD 1TLQ	TLQ TEST
02473	0500 00 0 06772	B39	CLA M3	MQ GREATER THEN ACC
02474	0560 00 0 06755		LDQ M2	MQ MINUS 2 ACC MINUS 3
02475	0040 00 0 02477		TLQ B39+4	SHOULD NOT TRANSFER
02476	0020 00 0 02500		TRA B39+5	OK, PROCEED
02477	0074 00 4 07042		TSX ERROR, 4	
02500	0074 00 4 07047		TSX OK, 4	
02501	0020 00 0 02473		TRA B39	

02502	634350606060		BCD 1TLQ	TLQ TEST
02503	0500 00 0 06744	B40	CLA TWO	MQ EQUALS ACC
02504	0560 00 0 06744		LDQ TWO	BOTH PLUS TWO
02505	0040 00 0 02507		TLQ B40+4	SHOULD NOT TRANSFER
02506	0020 00 0 02510		TRA B40+5	OK, PROCEED
02507	0074 00 4 07042		TSX ERROR, 4	
02510	0074 00 4 07047		TSX OK, 4	
02511	0020 00 0 02503		TRA B40	

02512	634350606060		BCD 1TLQ	TLQ TEST
02513	0500 00 0 06675	B41	CLA ZERO	MQ LESS THEN ACC
02514	0560 00 0 06702		LDQ MZE	MQ MINUS 0 ACC PLUS 0
02515	0040 00 0 02517		TLQ B41+4	OK, SHOULD TRANSFER
02516	0074 00 4 07042		TSX ERROR, 4	
02517	0074 00 4 07047		TSX OK, 4	
02520	0020 00 0 02513		TRA B41	

02521	634350606060		BCD 1TLQ	TLQ TEST
02522	0500 00 0 06702	B42	CLA MZE	MQ GREATER THEN ACC
02523	0560 00 0 06675		LDQ ZERO	MQ PLUS 0 ACC MINUS 0
02524	0040 00 0 02526		TLQ B42+4	SHOULD NOT TRANSFER
02525	0020 00 0 02527		TRA B42+5	OK, PROCEED
02526	0074 00 4 07042		TSX ERROR, 4	
02527	0074 00 4 07047		TSX OK, 4	
02530	0020 00 0 02522		TRA B42	

02531	634350606060		BCD 1TLQ	TLQ TEST
02532	0500 00 0 06702	B42A	CLA MZE	ACC MINUS ZERO
02533	0560 00 0 06754		LDQ MONE	MQ MINUS ONE
02534	0040 00 0 02536		TLQ B42A+4	
02535	0074 00 4 07042		TSX ERROR, 4	
02536	0074 00 4 07047		TSX OK, 4	
02537	0020 00 0 02532		TRA B42A	

02540	514524606060		BCD 1RND	RND TEST
02541	0500 00 0 06675	B43	CLA ZERO	CLEAR ACC
02542	0560 00 0 06751		LDQ PTW	PLACE BIT IN MQ 1 POS
02543	0760 00 0 00010		RND	ROUND SHOULD GO TO ACC
02544	0760 00 0 00001		LBT	POS 35, IS IT THERE
02545	0074 00 4 07042		TSX ERROR, 4	NO, ERROR
02546	0074 00 4 07047		TSX OK, 4	YES, OK

02547	0020 00 0 02541		TRA B43	
02550	444770606060		BCD 1MPY	MPY TEST
02551	0500 00 0 06674	B44	CLA PONES	PLACE ALL ONES IN ACC
02552	0767 00 0 00002		ALS 2	PLACE ONES IN P AND Q
02553	0560 00 0 06675		LDQ ZERO	MULTPLY ZERO BY ZERO
02554	0200 00 0 06675		MPY ZERO	CHECK ACC AND MQ FOR ZERO
02555	0100 00 0 02560		TZE B44+7	OK, SHOULD BE ZERO
02556	0074 00 4 07041		TSX ERROR-1,4	
02557	0020 00 0 02551		TRA B44	
02560	-0600 00 0 07037		STQ TEMP	SAVE MQ
02561	0500 00 0 07037		CLA TEMP	BRING TO ACC TO CHECK
02562	0100 00 0 02564		TZE B44+11	OK, SHOULD BE ZERO
02563	0074 00 4 07042		TSX ERROR,4	
02564	0074 00 4 07047		TSX OK,4	
02565	0020 00 0 02551		TRA B44	
02566	444770606060		BCD 1MPY	MPY TEST
02567	0560 00 0 06701	B45	LDQ ONE	MULTIPLY ONE BY ONE
02570	0200 00 0 06701		MPY ONE	SHOULD GET ZERO IN ACC
02571	0100 00 0 02574		TZE B45+5	
02572	0074 00 4 07041		TSX ERROR-1,4	
02573	0020 00 0 02567		TRA B45	
02574	-0600 00 0 07037		STQ TEMP	SAVE MQ AND CHECK
02575	0500 00 0 07037		CLA TEMP	FOR ONE IN ACC 34
02576	-0100 00 0 02601		TNZ B45+10	OK, PROCEED
02577	0074 00 4 07041		TSX ERROR-1,4	
02600	0020 00 0 02567		TRA B45	
02601	0771 00 0 00002		ARS 2	SHIFT OVER
02602	0100 00 0 02604		TZE B45+13	OK, CHECKS OUT
02603	0074 00 4 07042		TSX ERROR,4	
02604	0074 00 4 07047		TSX OK,4	
02605	0020 00 0 02567		TRA B45	
02606	444770606060		BCD 1MPY	MPY TEST
02607	0560 00 0 06674	B46	LDQ PONES	MULTIPLY ALL ONES
02610	0200 00 0 06701		MPY ONE	BY ONE
02611	0100 00 0 02614		TZE B46+5	OK, ACC SHOULD BE ZERO
02612	0074 00 4 07041		TSX ERROR-1,4	
02613	0020 00 0 02607		TRA B46	
02614	-0600 00 0 07037		STQ TEMP	SAVE MQ
02615	0500 00 0 07037		CLA TEMP	BRING IT TO ACC
02616	0140 00 0 02616		TOV B46+7	TURN OFF OVFL
02617	0400 00 0 06701		ADD ONE	ADD ONE TO TURN ON OVFL
02620	0140 00 0 02622		TOV B46+11	OK, PROCEED
02621	0074 00 4 07042		TSX ERROR,4	
02622	0074 00 4 07047		TSX OK,4	
02623	0020 00 0 02607		TRA B46	

02624	444770606060		BCD 1MPY	MPY TEST
02625	0560 00 0 06674	B47	LDQ PONES	MULTIPLY ALL ONES
02626	0200 00 0 06674		MPY PONES	BY ALL ONES
02627	0400 00 0 06701		ADD ONE	ADD ONE, 2-35 HAVE ONES
02630	0140 00 0 02631		TOV B47+4	SET OVFL
02631	0400 00 0 06701		ADD ONE	RIPPLE CARRY FOR ACC
02632	0140 00 0 02635		TOV B47+8	OK, DID RIPPLE
02633	0074 00 4 07041		TSX ERROR-1,4	
02634	0020 00 0 02625		TRA B47	
02635	-0600 00 0 07037		STQ TEMP	SAVE MQ
02636	0500 00 0 07037		CLA TEMP	BRING IT TO ACC
02637	0402 00 0 06701		SUB ONE	SUB ONE
02640	0100 00 0 02642		TZE B47+13	SHOULD TRANSFER
02641	0074 00 4 07042		TSX ERROR,4	
02642	0074 00 4 07047		TSX OK,4	
02643	0020 00 0 02625		TRA B47	
02644	444770606060		BCD 1MPY	MPY TEST
02645	0560 00 0 06675	B48	LDQ ZERO	MULTIPLY PLUS NUMBER BY
02646	0200 00 0 06675		MPY ZERO	PLUS, PRODUCT IS PLUS
02647	0120 00 0 02652		TPL B48+5	OK, ACC IS PLUS
02650	0074 00 4 07041		TSX ERROR-1,4	
02651	0020 00 0 02645		TRA B48	
02652	0162 00 0 02654		TQP B48+7	OK, MQ IS PLUS
02653	0074 00 4 07042		TSX ERROR,4	
02654	0074 00 4 07047		TSX OK,4	
02655	0020 00 0 02645		TRA B48	
02656	444770606060		BCD 1MPY	MPY TEST
02657	0560 00 0 06702	B49	LDQ MZE	MULTIPLY MINUS NUMBER BY
02660	0200 00 0 06702		MPY MZE	MINUS NUMBER, CHECK SING
02661	0120 00 0 02664		TPL B49+5	OK, ACC IS PLUS
02662	0074 00 4 07041		TSX ERROR-1,4	
02663	0020 00 0 02657		TRA B49	
02664	0162 00 0 02666		TQP B49+7	OK, MQ IS PLUS
02665	0074 00 4 07042		TSX ERROR,4	
02666	0074 00 4 07047		TSX OK,4	
02667	0020 00 0 02657		TRA B49	
02670	444770606060		BCD 1MPY	MPY TEST
02671	0560 00 0 06702	B50	LDQ MZE	MULTIPLY MQ MINUS BY
02672	0200 00 0 06675		MPY ZERO	A PLUS, CHECK SIGN
02673	-0120 00 0 02676		TMI B50+5	ACC SHOULD BE MINUS
02674	0074 00 4 07041		TSX ERROR-1,4	
02675	0020 00 0 02671		TRA B50	
02676	0162 00 0 02700		TQP B50+7	MQ SHOULD BE MINUS
02677	0020 00 0 02701		TRA B50+8	OK, PROCEED
02700	0074 00 4 07042		TSX ERROR,4	

02701	0074	00	4	07047		TSX	OK, 4	
02702	0020	00	0	02671		TRA	B50	
02703	444770606060					BCD	1MPY	MPY TEST
02704	0560	00	0	06675	B51	LDQ	ZERO	MULTIPLY MQ PLUS BY
02705	0200	00	0	06702		MPY	MZE	MINUS
02706	-0120	00	0	02711		TMI	B51+5	ACC IS MINUS
02707	0074	00	4	07041		TSX	ERROR-1, 4	
02710	0020	00	0	02704		TRA	B51	
02711	0162	00	0	02713		TQP	B51+7	
02712	0020	00	0	02714		TRA	B51+8	MQ IS MINUS
02713	0074	00	4	07042		TSX	ERROR, 4	
02714	0074	00	4	07047		TSX	OK, 4	
02715	0020	00	0	02704		TRA	B51	
02716	444751606060					BCD	1MPR	MPR TEST
02717	0560	00	0	06751	B52	LDQ	PTW	MULTIPLY +200---BY ONE
02720	-0200	00	0	06701		MPR	ONE	SHOULD ROUND TO ACC
02721	-0100	00	0	02724		TNZ	B52+5	OK, DID ROUND
02722	0074	00	4	07041		TSX	ERROR-1, 4	
02723	0020	00	0	02717		TRA	B52	
02724	0771	00	0	00001		ARS	1	OK, NOW MOVE BIT OUT
02725	0100	00	0	02727		TZE	B52+8	OK, PROCEED
02726	0074	00	4	07042		TSX	ERROR, 4	
02727	0074	00	4	07047		TSX	OK, 4	
02730	0020	00	0	02717		TRA	B52	
02731	444751606060					BCD	1MPR	MPR TEST
02732	0560	00	0	06751	B53	LDQ	PTW	MULTIPLY PLUS TWO BY
02733	-0200	00	0	06675		MPR	ZERO	ZERO SHOULD NOT ROUND
02734	0100	00	0	02737		TZE	B53+5	OK, IN ACC CHECK SIGN
02735	0074	00	4	07041		TSX	ERROR-1, 4	
02736	0020	00	0	02732		TRA	B53	
02737	0120	00	0	02742		TPL	B53+8	OK, PROCEED
02740	0074	00	4	07041		TSX	ERROR-1, 4	
02741	0020	00	0	02732		TRA	B53	
02742	0162	00	0	02744		TQP	B53+10	OK, PROCEED
02743	0074	00	4	07042		TSX	ERROR, 4	
02744	0074	00	4	07047		TSX	OK, 4	
02745	0020	00	0	02732		TRA	B53	
02746	444751606060					BCD	1MPR	MPR TEST
02747	0560	00	0	06750	B54	LDQ	MTW	MULTIPLY MINUS TWO BY
02750	-0200	00	0	06675		MPR	ZERO	ZERO, CHECK SIGNS
02751	0120	00	0	02753		TPL	B54+4	ERROR
02752	0020	00	0	02755		TRA	B54+6	OK, PROCEED
02753	0074	00	4	07041		TSX	ERROR-1, 4	
02754	0020	00	0	02747		TRA	B54	

02755	0162	00	0	02757	TQP	B54+8	ERROR, SHOULD BE MINUS	
02756	0020	00	0	02760	TRA	B54+9	OK, PROCEED	
02757	0074	00	4	07042	TSX	ERROR, 4		
02760	0074	00	4	07047	TSX	OK, 4		
02761	0020	00	0	02747	TRA	B54		
02762	444751606060				BCD	1MPR	MPR TEST	
02763	0140	00	0	02764	B54A	TOV	B54A+1	TURN OFF OVFL
02764	0560	00	0	06674	LDQ	PONES	ALL ONES IN MQ	
02765	-0200	00	0	06751	MPR	PTW	ACC 1-35 ALL ONES	
02766	0402	00	0	06751	SUB	PTW	MQ 1, A ONE, FORCE ROUND	
02767	0100	00	0	02772	TZE	B54A+7	SHOULD BE ZERO	
02770	0074	00	4	07041	TSX	ERROR-1, 4		
02771	0020	00	0	02763	TRA	B54A		
02772	-0140	00	0	02774	TNO	B54A+9	SHOULD NOT BE OVFL	
02773	0074	00	4	07042	TSX	ERROR, 4		
02774	0074	00	4	07047	TSX	OK, 4		
02775	0020	00	0	02763	TRA	B54A		
02776	246547606060				BCD	1DVP	DVP TEST	
02777	0560	00	0	06744	B55	LDQ	TWO	DIVIDEND PLUS TWO
03000	0500	00	0	06675	CLA	ZERO	DIVIDE BY ONE SHOULD	
03001	0221	00	0	06701	DVP	ONE	GET A PLUS TWO IN MQ	
03002	0120	00	0	03005	TPL	B55+6	OK, PROCEED	
03003	0074	00	4	07041	TSX	ERROR-1, 4	WRONG SIGN	
03004	0020	00	0	02777	TRA	B55		
03005	0100	00	0	03010	TZE	B55+9	REMAINDER SHOULD BE ZERO	
03006	0074	00	4	07041	TSX	ERROR-1, 4		
03007	0020	00	0	02777	TRA	B55		
03010	-0600	00	0	07037	STQ	TEMP	SAVE CONTENTS OF MQ	
03011	0500	00	0	07037	CLA	TEMP	BRING TO ACC	
03012	0402	00	0	06744	SUB	TWO	SUB TWO TO GET ZERO	
03013	0100	00	0	03015	TZE	B55+14	OK PROCEED	
03014	0074	00	4	07042	TSX	ERROR, 4	SHOULD NOT BE 2 IN ACC	
03015	0074	00	4	07047	TSX	OK, 4		
03016	0020	00	0	02777	TRA	B55		
03017	246547606060				BCD	1DVP	DVP TEST	
03020	0500	00	0	06675	B56	CLA	ZERO	CLEAR ACC
03021	0560	00	0	06676	LDQ	ONES	DIVIDE ALL ONES IN MQ	
03022	0221	00	0	06750	DVP	MTW	BY -200...	
03023	0120	00	0	03026	TPL	B56+6	OK, SHOULD BE PLUS	
03024	0074	00	4	07041	TSX	ERROR-1, 4		
03025	0020	00	0	03020	TRA	B56		
03026	0601	00	0	07037	STO	TEMP	SAVE ACC AND MQ	
03027	-0600	00	0	07040	STQ	TEMP+1		
03030	0162	00	0	03032	TQP	B56+10	ERROR	
03031	0020	00	0	03034	TRA	B56+12	MQ SHOULD BE MINUS	

03032	0074	00	4	07041		TSX ERROR-1,4	
03033	0020	00	0	03020		TRA B56	
03034	0500	00	0	07040		CLA TEMP+1	ZEROS TO ACC
03035	0402	00	0	07037		SUB TEMP	SUB ONES FROM ACC
03036	0140	00	0	03037		TOV B56+15	TURN OFF OVFL
03037	0767	00	0	00001		ALS 1	SHOULD GET OVFL
03040	0140	00	0	03042		TOV B56+18	OK, GET OVFL
03041	0074	00	4	07042		TSX ERROR,4	ERROR
03042	0074	00	4	07047		TSX OK,4	
03043	0020	00	0	03020		TRA B56	
03044	242363606060					BCD 1DCT	DCT TEST
03045	0760	00	0	00012	B57	DCT	INITIALIZE THE
03046	0020	00	0	03047		TRA B57+2	DCT INDICATOR
03047	0760	00	0	00012		DCT	TEST INDICATOR OFF
03050	0020	00	0	03052		TRA B57+5	INDICATOR NOT OFF
03051	0020	00	0	03054		TRA B57+7	
03052	0074	00	4	07041		TSX ERROR-1,4	
03053	0020	00	0	03045		TRA B57	
03054	0500	00	0	06675		CLA ZERO	PLACE ZERO IN ACC
03055	0560	00	0	06751		LDQ PTW	MAKE MQ +200... DIVIDE
03056	0221	00	0	06751		DVP PTW	BY +200...
03057	0760	00	0	00012		DCT	TEST INDICATOR OFF
03060	0074	00	4	07042		TSX ERROR,4	IF ON, DID NOT SHOW
03061	0074	00	4	07047		TSX OK,4	
03062	0020	00	0	03045		TRA B57	OK, PROCEED
03063	242363606060					BCD 1DCT	DCT TEST
03064	0500	00	0	06751	B58	CLA PTW	DIVIDE +200... BY -100...
03065	0221	00	0	06753		DVP MON	CHECK INDICATOR SHOULD
							BE ON
03066	0760	00	0	00012		DCT	TEST INDICATOR ON
03067	0020	00	0	03071		TRA B58+5	OK, PROCEED
03070	0074	00	4	07042		TSX ERROR,4	ENTERS HERE ON ERROR
03071	0074	00	4	07047		TSX OK,4	
03072	0020	00	0	03064		TRA B58	
03073	242363606060					BCD 1DCT	DIVIDE A ONE IN EACH
03074	0500	00	0	06701	B58A	CLA ONE	POSITION BY ZERO
03075	0601	00	0	07037		STO TEMP	
03076	0221	00	0	06675		DVP ZERO	
03077	0402	00	0	07037		SUB TEMP	CHECK THAT ACC DID NOT
03100	0100	00	0	03103		TZE B58A+7	CHANGE
03101	0074	00	4	07041		TSX ERROR-1,4	
03102	0020	00	0	03074		TRA B58A	
							CHECK DIVIDE CHECK LIGHT
03103	0760	00	0	00012		DCT	SHOULD BE ON
03104	0020	00	0	03107		TRA B58A+11	OK, PROCEED
03105	0074	00	4	07041		TSX ERROR-1,4	NO DIVIDE CHECK
03106	0020	00	0	03074		TRA B58A	
03107	0767	00	0	00001		ALS 1	MOVE ACROSS ACC

03110	-0100	00	0	03075	TNZ	B58A+1	BY ONE
03111	0074	00	4	07047	TSX	OK, 4	
03112	0020	00	0	03074	TRA	B58A	
03113	246530606060				BCD	1DVH	DVH TEST, NO HALT
03114	0560	00	0	06751	B62	LDQ	PTW MAKE MQ POSITIVE
03115	0500	00	0	06675	CLA	ZERO	MAKE ACC ZERO
03116	0220	00	0	06751	DVH	PTW	DIVIDE
03117	0120	00	0	03122	TPL	B62+6	OK, PROCEED
03120	0074	00	4	07041	TSX	ERROR-1, 4	
03121	0020	00	0	03114	TRA	B62	
03122	0140	00	0	03123	TOV	B62+7	TURN OFF OVFL
03123	0100	00	0	03126	TZE	B62+10	
03124	0074	00	4	07041	TSX	ERROR-1, 4	
03125	0020	00	0	03114	TRA	B62	
03126	-0600	00	0	07037	STQ	TEMP	SAVE MQ, ADD IT TO ACC
03127	0500	00	0	07037	CLA	TEMP	
03130	-0100	00	0	03133	TNZ	B62+15	OK, PROCEED
03131	0074	00	4	07041	TSX	ERROR-1, 4	
03132	0020	00	0	03114	TRA	B62	
03133	0760	00	0	00001	LBT		CHECK POS 35 FOR ONE
03134	0020	00	0	03136	TRA	B62+18	ERROR, GOT A ZERO
03135	0020	00	0	03140	TRA	B62+20	OK, PROCEED
03136	0074	00	4	07041	TSX	ERROR-1, 4	
03137	0020	00	0	03114	TRA	B62	
03140	0771	00	0	00001	ARS	1	OK, SHIFT IT OUT
03141	0100	00	0	03143	TZE	B62+23	OK, ALL SHOULD BE ZERO
03142	0074	00	4	07042	TSX	ERROR, 4	
03143	0074	00	4	07047	TSX	OK, 4	
03144	0020	00	0	03114	TRA	B62	
03145	246530606060				BCD	1DVH	DVH TEST, NO HALT
03146	0500	00	0	06675	B63	CLA	ZERO MAKE ACC ZERO
03147	0560	00	0	06676	LDQ	ONES	MAKE MQ ALL ONES
03150	0220	00	0	06750	DVH	MTW	DIVIDE BY -200...
03151	0120	00	0	03154	TPL	B63+6	OK, PROCEED
03152	0074	00	4	07041	TSX	ERROR-1, 4	
03153	0020	00	0	03146	TRA	B63	
03154	0601	00	0	07037	STO	TEMP	SAVE AC AND MQ
03155	-0600	00	0	07040	STQ	TEMP+1	
03156	0162	00	0	03160	TQP	B63+10	ERROR IN MQ SIGN
03157	0020	00	0	03162	TRA	B63+12	OK, IS MINUS, PROCEED
03160	0074	00	4	07041	TSX	ERROR-1, 4	
03161	0020	00	0	03146	TRA	B63	
03162	0500	00	0	07040	CLA	TEMP+1	SUB ACC FROM MQ
03163	0402	00	0	07037	SUB	TEMP	
03164	0140	00	0	03165	TOV	B63+15	TURN OFF OVFL

03165	0763	00	0	00001		LLS 1	SHIFT ONE BIT
03166	0140	00	0	03170		TOV B63+18	OK, SHOULD BE ON
03167	0074	00	4	07042		TSX ERROR, 4	
03170	0074	00	4	07047		TSX OK, 4	
03171	0020	00	0	03146		TRA B63	
03172	214521606060					BCD 1ANA	ANA TEST
03173	-0500	00	0	06702	B64	CAL MZE	MAKE ACC MINUS ZERO
03174	-0320	00	0	06676		ANA ONES	/AND/ TO ALL POSITIONS ZERO EXCEPT POS P
03175	-0760	00	0	00001		PBT	P SHOULD HAVE BIT
03176	0020	00	0	03200		TRA B64+5	ERROR, NO BIT IN POS P
03177	0020	00	0	03202		TRA B64+7	OK, PROCEED
03200	0074	00	4	07041		TSX ERROR-1, 4	
03201	0020	00	0	03173		TRA B64	
03202	0771	00	0	00001		ARS 1	OK, NOW POS Q SHOULD BE ZERO
03203	-0760	00	0	00001		PBT	SHIFT AND TEST
03204	0020	00	0	03207		TRA B64+12	OK, PROCEED
03205	0074	00	4	07041		TSX ERROR-1, 4	
03206	0020	00	0	03173		TRA B64	
03207	0120	00	0	03211		TPL B64+14	OK, SHOULD BE PLUS
03210	0074	00	4	07042		TSX ERROR, 4	
03211	0074	00	4	07047		TSX OK, 4	
03212	0020	00	0	03173		TRA B64	
03213	214521606060					BCD 1ANA	ANA TEST
03214	-0500	00	0	06676	B65	CAL ONES	PLACE ALL ONES IN ACC
03215	-0320	00	0	06676		ANA ONES	/AND/ TO ALL ONES
03216	0400	00	0	06701		ADD ONE	ADD ONE, CAUSE RIPPLE
03217	0767	00	0	00001		ALS 1	MOVE OUT Q
03220	0100	00	0	03222		TZE B65+6	OK, PROCEED
03221	0074	00	4	07042		TSX ERROR, 4	
03222	0074	00	4	07047		TSX OK, 4	
03223	0020	00	0	03214		TRA B65	
03224	214521606060					BCD 1ANA	ANA TEST
03225	-0500	00	0	06675	B66	CAL ZERO	PLACE ZEROS IN ACC
03226	-0320	00	0	06676		ANA ONES	/AND/ TO ALL ZEROS
03227	0100	00	0	03231		TZE B66+4	OK, NO PICK UP
03230	0074	00	4	07042		TSX ERROR, 4	
03231	0074	00	4	07047		TSX OK, 4	
03232	0020	00	0	03225		TRA B66	
03233	214521606060					BCD 1ANA	ANA TEST
03234	-0500	00	0	06773	B67	CAL KK30	L-252525252525
03235	-0320	00	0	06774		ANA KK31	L-125252252525
03236	0402	00	0	06775		SUB KK32	L+000000252525
03237	-0760	00	0	00001		PBT	TEST P FOR BIT

03240	0020	00	0	03242		TRA B67+6	ERROR
03241	0020	00	0	03244		TRA B67+8	OK, PROCEED AND MOVE IT OUT
03242	0074	00	4	07041		TSX ERROR-1,4	
03243	0020	00	0	03234		TRA B67	
03244	0767	00	0	00002		ALS 2	ALL RIGHT MOVE IT OUT
03245	0100	00	0	03247		TZE B67+11	OK, PROCEED
03246	0074	00	4	07042		TSX ERROR,4	
03247	0074	00	4	07047		TSX OK,4	
03250	0020	00	0	03234		TRA B67	
03251	214521606060					BCD 1ANA	ANA TEST
03252	0500	00	0	06773	B68	CLA KK30	L-252525252525
03253	-0320	00	0	06776		ANA KK33	L-252525525252
03254	0402	00	0	06777		SUB KK34	L+252525000000
03255	0100	00	0	03257		TZE B68+5	OK, SHOULD BE ZERO
03256	0074	00	4	07042		TSX ERROR,4	
03257	0074	00	4	07047		TSX OK,4	
03260	0020	00	0	03252		TRA B68	
03261	214562606060					BCD 1ANS	ANS TEST
03262	0500	00	0	06675	B69	CLA ZERO	INITIALIZE TEMP STORAGE
03263	0601	00	0	07037		STO TEMP	WITH ZERO
03264	-0500	00	0	06676		CAL ONES	PLACE ALL ONES IN ACC
03265	0320	00	0	07037		ANS TEMP	/AND/ TO ZERO STORAGE
03266	0500	00	0	07037		CLA TEMP	BRING RESULT TO ACC
03267	0100	00	0	03272		TZE B69+8	SHOULD BE ZERO, CHECK SIGN
03270	0074	00	4	07041		TSX ERROR-1,4	
03271	0020	00	0	03262		TRA B69	
03272	0120	00	0	03274		TPL B69+10	OK, PROCEED
03273	0074	00	4	07042		TSX ERROR,4	
03274	0074	00	4	07047		TSX OK,4	
03275	0020	00	0	03262		TRA B69	
03276	214562606060					BCD 1ANS	ANS TEST
03277	0500	00	0	06676	B70	CLA ONES	INITIALIZE TEMP STORAGE
03300	0601	00	0	07037		STO TEMP	WITH ALL ONES
03301	-0500	00	0	06675		CAL ZERO	MAKE ACC ZERO
03302	0320	00	0	07037		ANS TEMP	/AND/ TO ONES IN STORAGE
03303	0500	00	0	07037		CLA TEMP	BRING RESULT TO ACC
03304	0767	00	0	00001		ALS 1	SHIFT 0 POS OUT
03305	0100	00	0	03307		TZE B70+8	OK, ALL SHOULD BE ZERO
03306	0074	00	4	07042		TSX ERROR,4	
03307	0074	00	4	07047		TSX OK,4	
03310	0020	00	0	03277		TRA B70	
03311	214562606060					BCD 1ANS	ANS TEST WITH SIGNS UNLIKE
03312	0500	00	0	06773	B71	CLA KK30	INITIALIZE STORAGE WITH
03313	0601	00	0	07037		STO TEMP	L-252525252525
03314	-0500	00	0	07000		CAL KK35	MAKE ACC +1252522522525
03315	0320	00	0	07037		ANS TEMP	/AND/, THEN CHECK ACC

03316	0402	00	0	07000		SUB KK35	SUB ORIGINAL CONTENTS
03317	0100	00	0	03322		TZE B71+8	OK, PROCEED CHECK STORAGE
03320	0074	00	4	07041		TSX ERROR-1,4	
03321	0020	00	0	03312		TRA B71	
03322	0500	00	0	07037		CLA TEMP	CHECK STORAGE SHOULD
03323	0402	00	0	06775		SUB KK32	BE L+000000252525
03324	0100	00	0	03326		TZE B71+12	OK, IT WAS, PROCEED
03325	0074	00	4	07042		TSX ERROR,4	
03326	0074	00	4	07047		TSX OK,4	
03327	0020	00	0	03312		TRA B71	
03330	465121606060					BCD 10RA	ORA TEST
03331	0500	00	0	06675	B72	CLA ZERO	MAKE ACC ZERO
03332	-0501	00	0	06676		ORA ONES	/OR/ WITH ONES
03333	-0760	00	0	00001		PBT	CHECK P FOR ONE
03334	0020	00	0	03336		TRA B72+5	ERROR IN P
03335	0020	00	0	03340		TRA B72+7	CHECK OTHER POSITIONS
03336	0074	00	4	07041		TSX ERROR-1,4	
03337	0020	00	0	03331		TRA B72	
03340	0400	00	0	06701		ADD ONE	CHECK OTHER POSITIONS
03341	0767	00	0	00002		ALS 2	CLEAR P AND Q
03342	0100	00	0	03344		TZE B72+11	OK, SHOULD BE ZERO
03343	0074	00	4	07042		TSX ERROR,4	
03344	0074	00	4	07047		TSX OK,4	
03345	0020	00	0	03331		TRA B72	
03346	465121606060					BCD 10RA	ORA TEST
03347	-0500	00	0	06676	B73	CAL ONES	MAKE ACC POS P-35 ONES
03350	-0501	00	0	06675		ORA ZERO	/OR/ WITH ZEROS
03351	-0760	00	0	00001		PBT	CHECK P FOR ONE
03352	0020	00	0	03354		TRA B73+5	ERROR IN P
03353	0020	00	0	03356		TRA B73+7	PROCEED
03354	0074	00	4	07041		TSX ERROR-1,4	
03355	0020	00	0	03347		TRA B73	
03356	0400	00	0	06701		ADD ONE	OK, TEST POS 1-35
03357	0767	00	0	00002		ALS 2	MOVE OUT P AND Q
03360	0100	00	0	03362		TZE B73+11	OK, SHOULD BE ZERO
03361	0074	00	4	07042		TSX ERROR,4	
03362	0074	00	4	07047		TSX OK,4	
03363	0020	00	0	03347		TRA B73	
03364	465121606060					BCD 10RA	ORA TEST, SIGNS UNLIKE
03365	0500	00	0	07001	B74	CLA KK36	MAKE ACC +252525252525
03366	-0501	00	0	06776		ORA KK33	/OR/ -252525525252
03367	0402	00	0	07002		SUB KK37	SUB 252525777777
03370	-0760	00	0	00001		PBT	CHECK P FOR ONE
03371	0020	00	0	03373		TRA B74+6	ERROR IN P
03372	0020	00	0	03375		TRA B74+8	OK, PROCEED
03373	0074	00	4	07041		TSX ERROR-1,4	
03374	0020	00	0	03365		TRA B74	

03375	0767	00	0	00002		ALS 2	MOVE OUT P AND Q
03376	0100	00	0	03400		TZE B74+11	OK, PROCEED
03377	0074	00	4	07042		TSX ERROR, 4	
03400	0074	00	4	07047		TSX OK, 4	
03401	0020	00	0	03365		TRA B74	
03402	465121606060					BCD 10RA	ORA TEST, SIGNS PLUS
03403	0500	00	0	07001	B75	CLA KK36	MAKE ACC 252525252525
03404	-0501	00	0	07000		ORA KK35	/OR/ +125252252525
03405	0402	00	0	07003		SUB KK38	SUB 377777252525
03406	0100	00	0	03410		TZE B75+5	OK, PROCEED
03407	0074	00	4	07042		TSX ERROR, 4	
03410	0074	00	4	07047		TSX OK, 4	
03411	0020	00	0	03403		TRA B75	
03412	465162606060					BCD 10RS	ORS TEST
03413	0500	00	0	06676	B76	CLA ONES	INITIALIZE TEMP STORAGE
03414	0601	00	0	07037		STO TEMP	WITH ONES
03415	0500	00	0	06675		CLA ZERO	MAKE ACC ZERO
03416	-0602	00	0	07037		ORS TEMP	/OR/ TO ONES
03417	0100	00	0	03422		TZE B76+7	ACC SHOULD BE ZERO
03420	0074	00	4	07041		TSX ERROR-1, 4	ERROR IN ACC
03421	0020	00	0	03413		TRA B76	
03422	0500	00	0	07037		CLA TEMP	BRING BACK STORAGE
03423	0400	00	0	06754		ADD MONE	ADD MINUS ONE TO RIPPLE
03424	-0760	00	0	00001		PBT	P SHOULD HAVE BIT
03425	0074	00	4	07042		TSX ERROR, 4	ERROR, NO BIT IN POS P
03426	0074	00	4	07047		TSX OK, 4	OK, PROCEED
03427	0020	00	0	03413		TRA B76	
03430	465162606060					BCD 10RS	ORS TEST
03431	0500	00	0	06675	B77	CLA ZERO	INITIALIZE TEMP STORAGE
03432	0601	00	0	07037		STO TEMP	WITH ZEROS
03433	-0500	00	0	06676		CAL ONES	CAL ALL ONES P-35
03434	-0602	00	0	07037		ORS TEMP	/OR/ TO ZEROS
03435	0400	00	0	06701		ADD ONE	CHECK ACC, ADD ONE, SHOULD
03436	-0760	00	0	00001		PBT	NOT GET A BIT IN P
03437	0020	00	0	03442		TRA B77+9	OK, NOW CHECK STORAGE
03440	0074	00	4	07041		TSX ERROR-1, 4	ERROR, BIT IN P
03441	0020	00	0	03431		TRA B77	
03442	0500	00	0	07037		CLA TEMP	OK, NOW CHECK STORAGE
03443	0400	00	0	06754		ADD MONE	ADD MINUS ONE TO RIPPLE
03444	0140	00	0	03446		TOV B77+13	OK, SHOULD OVERFLOW
03445	0074	00	4	07042		TSX ERROR, 4	NO, NOT ZERO
03446	0074	00	4	07047		TSX OK, 4	YES, PROCEED
03447	0020	00	0	03431		TRA B77	
03450	465121606060					BCD 10RA	ORA TEST, SIGNS UNLIKE
03451	0500	00	0	07001	B78	CLA KK36	INITIALIZE TEMP STORAGE

03452	0601	00	0	07037		STO TEMP	WITH 252525252525
03453	0500	00	0	06776		CLA KK33	MAKE ACC-252525525252
03454	-0602	00	0	07037		ORS TEMP	/OR/ TO TEMP STORAGE
03455	0500	00	0	07037		CLA TEMP	BRING TEMP TO ACC
03456	0402	00	0	07002		SUB KK37	SUB 252525777777
03457	0100	00	0	03461		TZE B78+8	OK, PROCEED
03460	0074	00	4	07042		TSX ERROR, 4	
03461	0074	00	4	07047		TSX OK, 4	
03462	0020	00	0	03451		TRA B78	
03463	465162606060					BCD 1ORS	ORS TEST
03464	0500	00	0	07001	B79	CLA KK36	INITIALIZE TEMP STORAGE
03465	0601	00	0	07037		STO TEMP	WITH +252525252525
03466	-0500	00	0	06774		CAL KK31	MAKE P-35, -12525222525
03467	-0602	00	0	07037		ORS TEMP	/OR/ TO TEMP STORAGE
03470	0500	00	0	07037		CLA TEMP	BRING IT TO ACC
03471	0400	00	0	07003		ADD KK38	ADD 3777777252525
03472	0100	00	0	03474		TZE B79+8	OK, SHOULD BE ZERO
03473	0074	00	4	07042		TSX ERROR, 4	
03474	0074	00	4	07047		TSX OK, 4	
03475	0020	00	0	03464		TRA B79	
03476	636351606060					BCD 1TTR	TTR TEST , NOT IN TRAP MODE
03477	0140	00	0	03500	B80	TOV B80+1	TURN OFF OVFL
03500	0021	00	0	03502		TTR B80+3	SHOULD TRAP TRANSFER
03501	0074	00	4	07042		TSX ERROR, 4	DID NOT TRANSFER
03502	0074	00	4	07047		TSX OK, 4	
03503	0020	00	0	03477		TRA B80	
03504	256344406060					BCD 1ETM-	ETM- TEST TO SEE IF GET
03505	0760	00	0	00007	B81	ETM	IN TRAP MODE
03506	0500	00	0	07013		CLA KK85	MAKE ADR AT ONE A TTR
03507	0601	00	0	00001		STO 1	TO B82
03510	0500	00	0	06675		CLA ZERO	CONDITION WILL BE MET
03511	0100	00	0	03512		TZE B81+5	AND SHOULD GO TO ONE
03512	-0760	00	0	00007		LTM	
03513	0074	00	4	07042		TSX ERROR, 4	
03514	0074	00	4	07047		TSX OK, 4	PROCEED TO B82
03515	0020	00	0	03505		TRA B81	
03516	256344406060					BCD 1ETM-	TTR TEST, IN TRAP MODE
03517	0760	00	0	00007	B82	ETM	
03520	0021	00	0	03526		TTR B83	SHOULD TTR TO B83
03521	-0760	00	0	00007		LTM	
03522	0074	00	4	07042		TSX ERROR, 4	DID NOT TRAP TRANSFER
03523	0074	00	4	07047		TSX OK, 4	
03524	0020	00	0	03517		TRA B82	
03525	256344406060					BCD 1ETM-	YES TRA IN TRAP MODE
03526	0760	00	0	00007	B83	ETM	

03527	0500	00	0	07006	CLA	KK80	TTR TO B83+9, IS RETURN
03530	0601	00	0	00001	STO	1	ADDRESS AFTER TRAP.
03531	0500	00	0	07007	CLA	KK81	HTR B84 IS IN ZERO, IF
03532	0601	00	0	00000	STO	0	INSTRUCTION COUNTER FAILS
03533	0020	00	0	03534	TRA	B83+6	SHOULD NOT TRANSFER
03534	-0760	00	0	00007	LTM		
03535	0074	00	4	07041	TSX	ERROR-1,4	TRAP FAILS, TRANSFERS
03536	0020	00	0	03526	TRA	B83	
03537	-0760	00	0	00007	LTM		SHOULD TRAP AND RETURN HERE
03540	0500	00	0	00000	CLA	0	CHECK ADDRESS AT ZERO
03541	0402	00	0	07010	SUB	KK82	SUB THE ADDRESS OF TRAP
03542	0100	00	0	03544	TZE	B83+14	OK, SHOULD BE EQUAL
03543	0074	00	4	07042	TSX	ERROR,4	
03544	0074	00	4	07047	TSX	OK,4	
03545	0020	00	0	03526	TRA	B83	
03546	256344406060				BCD	1ETM-	TEST CONDITIONAL TRANSFERS, CONDITIONS NOT MET. ADDRESS OF ERROR IS IN
03547	0760	00	0	00007	B84	ETM	00000 OR TRAP ON PRINTOUT
03550	0500	00	0	07011	CLA	KK83	LOC 1 SET TO TTR B84A
03551	0601	00	0	00001	STO	1	SHOULD BE NO TRANSFERS
03552	0560	00	0	06747	LDQ	8CF	MAKE MQ LARGER THAN ACC
03553	0760	00	0	00000	CLM		SET ACC TO ZERO AND SET
03554	0601	00	0	00000	STO	0	LOC 0 TO ZERO
03555	-0100	00	0	03610	TNZ	B84C	
03556	-0120	00	0	03610	TMI	B84C	
03557	0140	00	0	03610	TOV	B84C	
03560	0040	00	0	03610	TLQ	B84C	
03561	0534	00	1	06675	LXA	ZERO,1	LOAD INDEX A WITH ZERO
03562	3	00000	1	03610	TXH	B84C,1	
03563	2	00010	1	03610	TIX	B84C,1,8	
03564	0500	00	0	06676	CLA	ONES	LOAD ACC WITH ONES
03565	0100	00	0	03610	TZE	B84C	
03566	0120	00	0	03610	TPL	B84C	
03567	0767	00	0	00014	ALS	12	FORCE OVFL
03570	-0140	00	0	03610	TNO	B84C	
03571	0534	00	1	06747	LXA	8CF,1	LOAD INDEX A WITH 77777
03572	-2	00001	1	03610	TNX	B84C,1,1	
03573	-3	00001	1	03610	TXL	B84C,1,1	
03574	0560	00	0	06702	LDQ	MZE	LOAD MQ WITH MINUS ZERO
03575	0162	00	0	03610	TQP	B84C	
03576	0162	00	0	03610	TQP	B84C	RETEST TO SEE IF TEST IS COMPLETE. IF TRAP OCCURS, COMES BACK HERE
03577	-0760	00	0	00007	B84A	LTM	LEAVES TRAP MODE
03600	0500	00	0	00000	CLA	0	CHECK ADDRESS AT ZERO
03601	0402	00	0	07020	SUB	KK86	IS TEST COMPLETE
03602	0100	00	0	03604	TZE	B84A+5	YES PROCEED
03603	0074	00	4	07042	TSX	ERROR,4	NO, ERROR ABOVE, CHECK ZERO ADDRESS
03604	0074	00	4	07047	TSX	OK,4	
03605	0020	00	0	03547	TRA	B84	

03606	256344406060		BCD 1ETM-	
03607	0020 00 0 03615	B84B	TRA B85	
03610	-0760 00 0 00007	B84C	LTM	IF TRANSFER IS WRONG,
03611	0074 00 4 07042		TSX ERROR, 4	COMES HERE
03612	0074 00 4 07047		TSX OK, 4	
03613	0020 00 0 03547		TRA B84	
				TEST CONDITIONAL TRANSFERS WITH CONDITIONALS SATISFIED
03614	256344406060		BCD 1ETM-	THIS IS SET UP FOR
03615	0760 00 0 00007	B85	ETM	TRAP RETURN
03616	0500 00 0 07014		CLA KK85A	INITIALIZE TEMP STORAGE WITH LOC OF FIRST COND TRANSFER
03617	0601 00 0 07037		STO TEMP	
03620	0500 00 0 07012		CLA KK84	TTR B85+6
03621	0601 00 0 00001		STO 1	
03622	0021 00 0 03635		TTR B85+16	OK, START TESTS
03623	0500 00 0 00000		CLA 0	RETURN FROM LOC 1
03624	0560 00 0 07037		LDQ TEMP	
03625	0340 00 0 07037		CAS TEMP	COMPARE ACC AND TEMP
03626	0021 00 0 03655		TTR B85B	IF TEMP LESS THEN ZERO
03627	0021 00 0 03631		TTR B85+12	IF TEMP EQUAL TO ZERO
03630	0021 00 0 03655		TTR B85B	IF TEMP GRATER THEN ZERO
03631	0400 00 0 06744		ADD TWO	NOW ADVANCE TWO POSITIONS
03632	0621 00 0 03634		STA B85+15	SO AS TO CONTINUE TO THE NEXT SUBTEST
03633	0621 00 0 07037		STA TEMP	RESET ADDRESS OF TEMP
03634	0021 00 0 00000		TTR 0	GO TO RESPECTIVE SECTION
03635	0767 00 0 00062		ALS 50	CLEAR ACC
03636	0600 00 0 00000		STZ 0	
03637	0100 00 0 03651		TZE B85A	TZE TEST
03640	0021 00 0 03651		TTR B85A	
03641	0120 00 0 03651		TPL B85A	TPL TEST
03642	0021 00 0 03651		TTR B85A	
03643	0140 00 0 03651		TOV B85A	TOV TEST
03644	0021 00 0 03651		TTR B85A	
03645	-0140 00 0 03651		TNO B85A	
03646	0021 00 0 03651		TTR B85A	TNO TEST
03647	-0760 00 0 00007		LTM	TEST IS FINISED NOW
03650	0020 00 0 03660		TRA B86	GO TO NEXT SECTION
03651	-0760 00 0 00007	B85A	LTM	COMES HERE ON EROR
03652	0074 00 4 07041		TSX ERROR-1, 4	ERROR, DID NOT TRAP
03653	0020 00 0 03615		TRA B85	
03654	0020 00 0 03660		TRA B86	CONTINUE TEST
				COMES HERE IF ADDRESS AT ZERO IS INCORRECT

03655	-0760	00	0	00007	B85B	LTM	
03656	0074	00	4	07041		TSX ERROR-1,4	NOT JUMPING PROPERLY
03657	0020	00	0	03615		TRA B85	
03660	0760	00	0	00007	B86	ETM	
03661	0500	00	0	07015		CLA KK85B	
03662	0601	00	0	07037		STO TEMP	
							INITIALIZE TEMP STORAGE WITH LOC OF FIRST COND TRANSFER
03663	0500	00	0	06676		CLA ONES	BRING IN ALL ONES
03664	-0120	00	0	03672		TMI B86A	TMI TEST
03665	0021	00	0	03672		TTR B86A	
03666	-0100	00	0	03672		TNZ B86A	TNZ TEST
03667	0021	00	0	03672		TTR B86A	
03670	-0760	00	0	00007		LTM	TEST IS FINISHED NOW
03671	0020	00	0	03675		TRA B87	GO TO NEXT SECTION
03672	-0760	00	0	00007	B86A	LTM	COMES HERE ON ERROR
03673	0074	00	4	07041		TSX ERROR-1,4	ERROR, DID NOT TRAP
03674	0020	00	0	03615		TRA B85	
03675	0760	00	0	00007	B87	ETM	TEST TQP, CONDITION
03676	0500	00	0	07016		CLA KK85C	SATISFIED
03677	0601	00	0	07037		STO TEMP	
							INITIALIZE TEMP STORAGE WITH LOC OF FIRST COND TRANSFER
03700	0560	00	0	06701		LDQ ONE	LOAD MQ POS 35 WITH ONE
03701	0162	00	0	03705		TQP B87A	TEST TQP
03702	0021	00	0	03705		TTR B87A	
03703	-0760	00	0	00007		LTM	TEST IS FINISHED NOW
03704	0020	00	0	03710		TRA B88	GO TO NEXT SECTION
03705	-0760	00	0	00007	B87A	LTM	
03706	0074	00	4	07041		TSX ERROR-1,4	ERROR, DID NOT TRAP
03707	0020	00	0	03615		TRA B85	
							CHECK ADDRESS AT ZERO FOR LOCATION OF LAST INST PERFORMED CORRECTLY
03710	0760	00	0	00007	B88	ETM	INITIALIZE TEMP STORAGE
03711	0500	00	0	07017		CLA KK85D	WITH LOC OF FIRST COND
03712	0601	00	0	07037		STO TEMP	TRANSFER
03713	1	00011	1	03731		TXI B88A,1,9	TXI TEST
03714	0021	00	0	03731		TTR B88A	
03715	3	00000	1	03731		TXH B88A,1	TXH TEST
03716	0021	00	0	03731		TTR B88A	
03717	-3	00000	0	03731		TXL B88A	TXL TEST
03720	0021	00	0	03731		TTR B88A	
03721	2	00001	1	03731		TIX B88A,1,1	TIX TEST
03722	0021	00	0	03731		TTR B88A	
03723	-2	77777	1	03731		TNX B88A,1,-1	TNX TEST
03724	0021	00	0	03731		TTR B88A	

03725	0074	00	1	03731		TSX B88A,1	TSX TEST
03726	0021	00	0	03731		TTR B88A	
03727	-0760	00	0	00007		LTM	TEST IS FINISHED
03730	0020	00	0	03733		TRA B88A+2	GO TO NEXT SECTIONS
03731	-0760	00	0	00007	B88A	LTM	COMES HERE ON ERROR
03732	0074	00	4	07042		TSX ERROR,4	ERROR, DID NOT TRAP
03733	0074	00	4	07047		TSX OK,4	
03734	0020	00	0	03615		TRA B85	
03735	0761	00	0	00000		NOP	
03736	0500	00	0	06564		CLA END+1	RESTORE
03737	0601	00	0	00000		STO 0	RESET-START
03740	0020	00	0	03742		TRA *+2	
03741	624363606060					BCD 1SLT	PSE TEST
03742	0760	00	0	00140	B89	SLF	TURN OFF ALL SENSE LIGHTS
03743	-0760	00	0	00141		SLT 1	TEST LIGHT ONE
03744	0020	00	0	03747		TRA B90	OK, OFF
03745	0074	00	4	07041		TSX ERROR-1,4	ERROR, LIGHT WAS ON
03746	0020	00	0	03742		TRA B89	
03747	-0760	00	0	00142	B90	SLT 2	TEST LIGHT TWO
03750	0020	00	0	03753		TRA B91	OK, PROCEED
03751	0074	00	4	07041		TSX ERROR-1,4	ERROR, LIGHT WAS ON
03752	0020	00	0	03742		TRA B89	
03753	-0760	00	0	00143	B91	SLT 3	TEST LIGHT THREE
03754	0020	00	0	03757		TRA B92	OK, PROCEED
03755	0074	00	4	07041		TSX ERROR-1,4	ERROR, LIGHT WAS ON
03756	0020	00	0	03742		TRA B89	
03757	-0760	00	0	00144	B92	SLT 4	TEST LIGHT FOUR
03760	0020	00	0	03762		TRA B92+3	OK, PROCEED
03761	0074	00	4	07042		TSX ERROR,4	ERROR, LIGHT WAS ON
03762	0074	00	4	07047		TSX OK,4	
03763	0020	00	0	03742		TRA B89	
03764	624363600160					BCD 1SLT 1	PSE TEST
03765	0760	00	0	00141	B93	SLN 1	TURN ON LIGHT ONE
03766	-0760	00	0	00141		SLT 1	TEST LIGHT ONE
03767	0074	00	4	07042		TSX ERROR,4	ERROR, IT WAS NOT ON
03770	0074	00	4	07047		TSX OK,4	OK, PROCEED
03771	0020	00	0	03765		TRA B93	
03772	624363600260					BCD 1SLT 2	PZE TEST
03773	0760	00	0	00142	B94	SLN 2	TURN ON LIGHT TWO
03774	-0760	00	0	00142		SLT 2	TEST LIGHT TWO
03775	0074	00	4	07042		TSX ERROR,4	ERROR, IT WAS NOT ON
03776	0074	00	4	07047		TSX OK,4	OK, PROCEED
03777	0020	00	0	03773		TRA B94	

04000	624363600360		BCD 1SLT 3	PZE TEST
04001	0760 00 0 00143	B95	SLN 3	TURN ON LIGHT THREE
04002	-0760 00 0 00143		SLT 3	TEST LIGHT THREE
04003	0074 00 4 07042		TSX ERROR,4	ERROR, IT WAS NOT ON
04004	0074 00 4 07047		TSX OK,4	OK, PROCEED
04005	0020 00 0 04001		TRA B95	
04006	624363600460		BCD 1SLT 4	PZE TEST
04007	0760 00 0 00144	B96	SLN 4	TURN ON LIGHT FOUR
04010	-0760 00 0 00144		SLT 4	TEST LIGHT FOUR
04011	0074 00 4 07042		TSX ERROR,4	ERROR, IT WAS NOT ON
04012	0074 00 4 07047		TSX OK,4	OK, PROCEED
04013	0020 00 0 04007		TRA B96	
04014	624363606060		BCD 1SLT	MSE TEST, TEST ALL LIGHTS ARE OUT
04015	-0760 00 0 00141	B93A	SLT 1	TEST LIGHT ONE
04016	0020 00 0 04021		TRA B93A+4	SHOULD BE OFF
04017	0074 00 4 07041		TSX ERROR-1,4	
04020	0020 00 0 04015		TRA B93A	
04021	-0760 00 0 00142		SLT 2	TEST LIGHT TWO
04022	0020 00 0 04025		TRA B93A+8	SHOULD BE OFF
04023	0074 00 4 07041		TSX ERROR-1,4	
04024	0020 00 0 04015		TRA B93A	
04025	-0760 00 0 00143		SLT 3	TEST LIGHT THREE
04026	0020 00 0 04031		TRA B93A+12	SHOULD BE OFF
04027	0074 00 4 07041		TSX ERROR-1,4	
04030	0020 00 0 04015		TRA B93A	
04031	-0760 00 0 00144		SLT 4	TEST LIGHT FOUR
04032	0020 00 0 04034		TRA B93A+15	SHOULD BE OFF
04033	0074 00 4 07042		TSX ERROR,4	
04034	0074 00 4 07047		TSX OK,4	
04035	0020 00 0 04015		TRA B93A	
04036	454647606060		BCD 1NOP	NOP TEST TO SEE IF NOP IS INTERPRETED AS PSE 97
04037	0760 00 0 00140	B96A	SLF	
04040	0761 00 0 00141		NOP 97	
04041	-0760 00 0 00141		SLT 1	TEST LIGHT ONE
04042	0020 00 0 04044		TRA B96A+5	
04043	0074 00 4 07042		TSX ERROR,4	
04044	0074 00 4 07047		TSX OK,4	
04045	0020 00 0 04037		TRA B96A	
04046	626663606060		BCD 1SWT	SENSE SWITCH TEST
04047	0500 00 0 07021	B98	CLA KK87	PLACE TRA B98A+1 IN B98A
04050	0601 00 0 04100		STO B98A	FOR FIRST TIME THROUGH, CHANGES ON SECOND TIME THROUGH, EACH SWITCH IS REPRESENTED IN MQ AND ACC BY GROUP OF SIX BITS

04051	0500	00	0	06675		CLA ZERO	CLEAR ACC
04052	0760	00	0	00161		SWT 1	SW 1
04053	0020	00	0	04055		TRA B98+6	DOWN L -370000000000
04054	0500	00	0	06704		CLA SW1	UP
04055	0760	00	0	00162		SWT 2	SW 2
04056	0020	00	0	04060		TRA B98+9	DOWN L+007700000000
04057	-0501	00	0	07023		ORA SW2	UP
04060	0760	00	0	00163		SWT 3	SW 3
04061	0020	00	0	04063		TRA B98+12	DOWN L +000077000000
04062	-0501	00	0	07024		ORA SW3	UP
04063	0760	00	0	00164		SWT 4	SW 4
04064	0020	00	0	04066		TRA B98+15	DOWN L +000000770000
04065	-0501	00	0	07025		ORA SW4	UP
04066	0760	00	0	00165		SWT 5	SW 5
04067	0020	00	0	04071		TRA B98+18	DOWN L +000000007700
04070	-0501	00	0	07026		ORA SW5	UP
04071	0760	00	0	00166		SWT 6	SW 6
04072	0020	00	0	04074		TRA B98+21	UP
04073	-0501	00	0	07027		ORA SW6	DOWN L +000000000077
04074	0761	00	0	00166		NOP 118	TEST, SEE IF NOP INTERPRETED AS PSE. IF SW6 UP, NOT CONCLUSIVE
04075	0020	00	0	04100		TRA B98A	SENSE SWITCH TEST
04076	0074	00	4	07041		TSX ERROR-1,4	
04077	0020	00	0	04047		TRA B98	
04100	0020	00	0	04101	B98A	TRA B98A+1	
04101	0601	00	0	07037		STO TEMP	
04102	0560	00	0	07037		LDQ TEMP	
04103	0500	00	0	07022		CLA KK88	RESET SWITCH TO COMPARE
04104	0601	00	0	04100		STO B98A	TO SEE IF AGREE SECOND TIME
04105	0020	00	0	04051		TRA B98+2	REPEAT B98 ONCE
04106	0402	00	0	07037	B98B	SUB TEMP	SUBT FIRST RESULT FROM 2ND
04107	0100	00	0	04111		TZE B98B+3	OK, PROCEED
04110	0074	00	4	07042		TSX ERROR,4	ERROR IS SHOWN BY COMPARING
04111	0074	00	4	07047		TSX OK,4	ACC RESULTS WITH MQ. IF
04112	0020	00	0	04047		TRA B98	SWITCH WAS UP, ITS RESPECTIVE PART OF ACC SHOULD BE OFF. IF SWITCH WAS DOWN, THIS PART SHOULD BE ON
04113	626363606060					BCD 1STT	TEST-STORE TAG
04114	0760	00	0	00000	A1	CLM	
04115	0602	00	0	07037		SLW TEMP	SAVE ACC
04116	0500	00	0	06676		CLA ONES	L ALL ONES
04117	0625	00	0	07037		STT TEMP	PUT ONES IN TAG
04120	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04121	0340	00	0	06676		CAS ONES	
04122	0020	00	0	04124		TRA A1+8	ERROR
04123	0020	00	0	04126		TRA A2	OK-ACC UNCHANGED
04124	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE

04125	0020	00	0	04114		TRA A1	REPEAT SECTION
04126	0500	00	0	07037	A2	CLA TEMP	TEST TAG FOR ONES
04127	0560	00	0	06677		LDQ K2	L +700000 MQ, ACC SHOULD BE THE SAME
04130	0340	00	0	06677		CAS K2	
04131	0020	00	0	04133		TRA A2+5	ERROR
04132	0020	00	0	04134		TRA A2+6	OK
04133	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04134	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04135	0020	00	0	04114		TRA A1	REPEAT TEST
04136	626363606060					BCD 1STT	
04137	0500	00	0	06676	A2A	CLA ONES	L ALL ONES
04140	0601	00	0	07037		STO TEMP	SAVE ACC
04141	0760	00	0	00000		CLM	
04142	0625	00	0	07037		STT TEMP	PUT ZEROS IN TAG
04143	0500	00	0	07037		CLA TEMP	TEST TAG FOR ZEROS
04144	0560	00	0	06700		LDQ K3	L -377777077777 MQ, ACC SHOULD BE THE SAME
04145	0340	00	0	06700		CAS K3	
04146	0020	00	0	04150		TRA A2A+9	ERROR
04147	0020	00	0	04151		TRA A2A+10	OK
04150	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04151	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04152	0020	00	0	04137		TRA A2A	REPEAT TEST
04153	626371606060					BCD 1STZ	TEST STORE ZERO AND SEE IF ACC AND MQ CHANGE
04154	0500	00	0	06676	A3	CLA ONES	L ALL ONES
04155	0601	00	0	07037		STO TEMP	SAVE ACC
04156	0560	00	0	04156		LDQ A3+2	
04157	0600	00	0	07037		STZ TEMP	BLANK TEMP
04160	-0600	00	0	07040		STQ TEMP+1	SAVE MQ
04161	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04162	0340	00	0	06676		CAS ONES	
04163	0020	00	0	04165		TRA A3+9	ERROR
04164	0020	00	0	04167		TRA A3A	OK-ACC UNCHANGED
04165	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04166	0020	00	0	04154		TRA A3	REPEAT SECTION
04167	0500	00	0	07040	A3A	CLA TEMP+1	L SAVED MQ
04170	0560	00	0	04156		LDQ A3+2	MQ, ACC SHOULD BE SAME
04171	0340	00	0	04156		CAS A3+2	
04172	0020	00	0	04174		TRA *+2	ERROR
04173	0020	00	0	04176		TRA A4	OK MQ UNCHANGED
04174	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04175	0020	00	0	04154		TRA A3	REPEAT SECTION
04176	0500	00	0	07037	A4	CLA TEMP	CHECK TEMP
04177	0100	00	0	04201		TZE A4+3	OK
04200	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04201	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04202	0020	00	0	04154		TRA A3	REPEAT TEST

04203	672321606060		BCD 1XCA	TEST-EXCHANGE ACC AND MQ
04204	0500 00 0 06701	A5	CLA ONE	L +1
04205	0560 00 0 06702		LDQ MZE	L -0 TO MQ
04206	0131 00 0 00000		XCA	
04207	-0120 00 0 04212		TMI A5A	ACC SIGN OK
04210	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04211	0020 00 0 04204		TRA A5	REPEAT SECTION
04212	0100 00 0 04215	A5A	TZE A5A1	OK OK
04213	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04214	0020 00 0 04204		TRA A5	REPEAT SECTION
04215	0763 00 0 00043	A5A1	LLS 35	BRING MQ TO ACC
04216	0560 00 0 06701		LDQ ONE	L +1 TO MQ
04217	0340 00 0 06701		CAS ONE	
04220	0020 00 0 04222		TRA A5A1+5	ERROR
04221	0020 00 0 04223		TRA A5A1+6	MQ OK
04222	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04223	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04224	0020 00 0 04204		TRA A5	REPEAT TEST
04225	672321606060		BCD 1XCA	XCA TEST
04226	0500 00 0 06700	A6	CLA K3	L -377777077777
04227	0560 00 0 06677		LDQ K2	L +000000700000
04230	0131 00 0 00000		XCA	CHECK ALL POSITIONS
04231	-0600 00 0 07037		STQ TEMP	SAVE MQ
04232	0560 00 0 06677		LDQ K2	L +7000000 MQ,ACC SHOULD BE THE SAME
04233	0340 00 0 06677		CAS K2	
04234	0020 00 0 04236		TRA A6+8	ERROR
04235	0020 00 0 04240		TRA A6A	ACC OK
04236	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04237	0020 00 0 04226		TRA A6	REPEAT SECTION
04240	0500 00 0 07037	A6A	CLA TEMP	CHECK SAVED MQ
04241	0560 00 0 06700		LDQ K3	L -377777077777 MQ,ACC SHOULD BE THE SAME
04242	0340 00 0 06700		CAS K3	
04243	0020 00 0 04245		TRA A6A+5	ERROR
04244	0020 00 0 04246		TRA A6A+6	MQ OK
04245	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04246	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04247	0020 00 0 04226		TRA A6	REPEAT TEST
04250	672321606060		BCD 1XCA	
04251	0500 00 0 06676	A7X	CLA ONES	L ALL ONES
04252	0767 00 0 00003		ALS 3	ACC NOW -1137777777770
04253	0560 00 0 06700		LDQ K3	L -377777077777
04254	0131 00 0 00000		XCA	CHECK XCA FOR CLEARING P,Q
04255	-0600 00 0 07037		STQ TEMP	SAVE MQ
04256	0560 00 0 06700		LDQ K3	L -377777077777 MQ,ACC

							SHOULD BE THE SAME
04257	0340	00	0	06700		CAS K3	
04260	0020	00	0	04262		TRA *+2	ERROR
04261	0020	00	0	04264		TRA A7A	ACC OK
04262	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
04263	0020	00	0	04251		TRA A7X	
04264	0500	00	0	07037	A7A	CLA TEMP	CHECK SAVED MQ
04265	0560	00	0	06703		LDQ K6	L -3777777770 MQ, ACC SHOULD BE THE SAME
04266	0340	00	0	06703		CAS K6	
04267	0020	00	0	04271		TRA A7A+5	ERROR
04270	0020	00	0	04272		TRA A7A+6	MQ OK
04271	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
04272	0074	00	4	07047		TSX OK,4	CONTINUE TEST
04273	0020	00	0	04251		TRA A7X	
04274	672343606060					BCD 1XCL	TEST-EXCHANGE LOGICAL ACCUMULATOR AND MQ
04275	0500	00	0	06701	A10X	CLA ONE	L +1
04276	0560	00	0	06702		LDQ MZE	L -0 TO MQ
04277	-0130	00	0	00000		XCL 0	
04300	-0760	00	0	00001		PBT	
04301	0020	00	0	04303		TRA *+2	ERROR
04302	0020	00	0	04305		TRA A10A	OK-ACC HAS P BIT
04303	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
04304	0020	00	0	04275		TRA A10X	
04305	0771	00	0	00002	A10A	ARS 2	ACC NOW +10000000000
04306	-0600	00	0	07037		STQ TEMP	SAVE MQ
04307	0560	00	0	06705		LDQ PTHR	L +10000000000 TO MQ
04310	0340	00	0	06705		CAS PTHR	
04311	0020	00	0	04313		TRA A10A+6	ERROR
04312	0020	00	0	04315		TRA A10A1	ACC OK
04313	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
04314	0020	00	0	04275		TRA A10X	
04315	0500	00	0	07037	A10A1	CLA TEMP	CHECK SAVED MQ
04316	0560	00	0	06701		LDQ ONE	L +1 TO MQ
04317	0340	00	0	06701		CAS ONE	
04320	0020	00	0	04322		TRA A10A1+5	ERROR
04321	0020	00	0	04323		TRA A10A1+6	MQ OK
04322	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
04323	0074	00	4	07047		TSX OK,4	CONTINUE TEST
04324	0020	00	0	04275		TRA A10X	
04325	672343606060					BCD 1XCL	
04326	-0500	00	0	06676	A12X	CAL ONES	L ONES
04327	0560	00	0	06675		LDQ ZERO	L +0
04330	-0130	00	0	00000		XCL 0	
04331	0100	00	0	04334		TZE A12A	ACC OK
04332	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
04333	0020	00	0	04326		TRA A12X	

04334	0763	00	0	00043	A12A	LLS 35	BRING MQ TO ACC
04335	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04336	0340	00	0	06676		CAS ONES	
04337	0020	00	0	04341		TRA A12A+5	ERROR
04340	0020	00	0	04342		TRA A12A+6	MQ OK
04341	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04342	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04343	0020	00	0	04326		TRA A12X	
04344	672343606060					BCD 1XCL	
04345	0500	00	0	06707	A13X	CLA K10	L -300000000000
04346	0767	00	0	00002		ALS 2	CLEAR ALL BUT S,Q,P
04347	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04350	-0130	00	0	00000		XCL 0	TEST FOR CLEARING S,Q
04351	0771	00	0	00001		ARS 1	CLEAR P
04352	-0600	00	0	07037		STQ TEMP	SAVE MQ
04353	0560	00	0	06674		LDQ PONES	L + ALL ONES
04354	0340	00	0	06674		CAS PONES	
04355	0020	00	0	04357		TRA *+2	ERROR
04356	0020	00	0	04361		TRA A13A	ACC OK
04357	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04360	0020	00	0	04345		TRA A13X	
04361	0500	00	0	07037	A13A	CLA TEMP	CHECK SAVED MQ
04362	-0120	00	0	04365		TMI A13A1	MQ SIGN OK
04363	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04364	0020	00	0	04345		TRA A13X	
04365	0100	00	0	04367	A13A1	TZE A13A1+2	MQ OK
04366	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04367	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04370	0020	00	0	04345		TRA A13X	
04371	255121606060					BCD 1ERA	TEST-EXCLUSIVE OR TO ACC
04372	-0500	00	0	06676	A14X	CAL ONES	L ALL ONES
04373	0602	00	0	07037		SLW TEMP	SAVE ACC
04374	0322	00	0	07037		ERA TEMP	CHECK FOR CLEARING ACC
04375	0100	00	0	04400		TZE A14A	ACC OK
04376	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04377	0020	00	0	04372		TRA A14X	REPEAT SECTION
04400	0500	00	0	07037	A14A	CLA TEMP	CHECK STG UNCHANGED
04401	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04402	0340	00	0	06676		CAS ONES	
04403	0020	00	0	04405		TRA A14A+5	ERROR
04404	0020	00	0	04406		TRA A14A+6	OK-STORAGE UNCHANGED
04405	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04406	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04407	0020	00	0	04372		TRA A14X	
04410	255121606060					BCD 1ERA	
04411	-0500	00	0	06676	A15X	CAL ONES	L ALL ONES
04412	0322	00	0	06675		ERA ZERO	NO CHANGE TO ACC

04413	0602	00	0	07037		SLW TEMP	SAVE ACC
04414	0500	00	0	07037		CLA TEMP	CHECK ACC
04415	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04416	0340	00	0	06676		CAS ONES	
04417	0020	00	0	04421		TRA *+2	ERROR
04420	0020	00	0	04422		TRA *+2	OK
04421	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04422	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04423	0020	00	0	04411		TRA A15X	
04424	255121606060					BCD 1ERA	
04425	0500	00	0	06675	A16X	CLA ZERO	L +0
04426	0322	00	0	06676		ERA ONES	FILL P,1-35 WITH BITS
04427	0602	00	0	07037		SLW TEMP	SAVE ACC
04430	0500	00	0	07037		CLA TEMP	CHECK ACC
04431	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
04432	0340	00	0	06676		CAS ONES	
04433	0020	00	0	04435		TRA *+2	ERROR
04434	0020	00	0	04436		TRA *+2	OK
04435	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04436	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04437	0020	00	0	04425		TRA A16X	
04440	255121606060					BCD 1ERA	
04441	0500	00	0	06707	A17	CLA K10	L -300000000000
04442	0767	00	0	00003		ALS 3	SET UP Q BIT
04443	0322	00	0	06675		ERA ZERO	CHECK S,Q CLEARED
04444	0120	00	0	04447		TPL A17A	ACC SIGN CLEARED
04445	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04446	0020	00	0	04441		TRA A17	
04447	0100	00	0	04451	A17A	TZE A17A+2	ACC OK-Q CLEARED
04450	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04451	0074	00	4	07047		TSX OK, 4	CONTINUE TEST
04452	0020	00	0	04441		TRA A17	REPEAT TEST
04453	432751606060					BCD 1LGR	TEST-LOGICAL RT SHIFT
04454	0500	00	0	06701	A20	CLA ONE	L +1
04455	0560	00	0	06675		LDQ ZERO	L +0 TO MQ
04456	-0765	00	0	00001		LGR 1	
04457	0100	00	0	04462		TZE A20A	ACC OK
04460	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04461	0020	00	0	04454		TRA A20	REPEAT SECTION
04462	0763	00	0	00043	A20A	LLS 35	BRING MQ TO ACC
04463	-0120	00	0	04466		TMI A20A1	MQ SIGN OK
04464	0074	00	4	07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04465	0020	00	0	04454		TRA A20	REPEAT SECTION
04466	0100	00	0	04470	A20A1	TZE A20A1+2	MQ OK
04467	0074	00	4	07042		TSX ERROR, 4	TO ERROR ROUTINE
04470	0074	00	4	07047		TSX OK, 4	CONTINUE TEST

04471	0020 00 0 04454		TRA A20	REPEAT TEST
04472	432751606060		BCD 1LGR	
04473	0560 00 0 06702	A21X	LDQ MZE	L -0 TO MQ
04474	0760 00 0 00000		CLM	
04475	-0765 00 0 00043		LGR 35	CHANGE MQ TO +1
04476	0763 00 0 00043		LLS 35	BRING MQ TO ACC
04477	0560 00 0 06701		LDQ ONE	L +1 TO MQ
04500	0340 00 0 06701		CAS ONE	
04501	0020 00 0 04503		TRA *+2	ERROR
04502	0020 00 0 04504		TRA *+2	OK
04503	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04504	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04505	0020 00 0 04473		TRA A21X	
04506	432751606060		BCD 1LGR	
04507	0500 00 0 06676	A22X	CLA ONES	L ALL ONES
04510	0767 00 0 00003		ALS 3	LOAD P, Q
04511	-0765 00 0 00044		LGR 36	NOW -377777777770 IN MQ
04512	0760 00 0 00002		CHS	ACC NOW +1
04513	-0600 00 0 07037		STQ TEMP	SAVE MQ
04514	0560 00 0 06701		LDQ ONE	L +1 TO MQ
04515	0340 00 0 06701		CAS ONE	
04516	0020 00 0 04520		TRA *+2	ERROR
04517	0020 00 0 04522		TRA A22A	ACC OK
04520	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04521	0020 00 0 04507		TRA A22X	
04522	0500 00 0 07037	A22A	CLA TEMP	L SAVED MQ
04523	0560 00 0 06703		LDQ K6	L -37777777770 MQ, ACC SHOULD BE THE SAME
04524	0340 00 0 06703		CAS K6	
04525	0020 00 0 04527		TRA A22A+5	ERROR
04526	0020 00 0 04530		TRA A22A+6	MQ OK
04527	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04530	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04531	0020 00 0 04507		TRA A22X	
04532	712563606060		BCD 1ZET	TEST-STORAGE ZERO TEST
04533	0500 00 0 06676	A23X	CLA ONES	L ALL ONES
04534	0520 00 0 06675		ZET ZERO	STG 1-35 ZERO
04535	0020 00 0 04537		TRA *+2	ERROR
04536	0020 00 0 04541		TRA A23A	OK
04537	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04540	0020 00 0 04533		TRA A23X	
04541	0560 00 0 06676	A23A	LDQ ONES	L ALL ONES TO MQ
04542	0340 00 0 06676		CAS ONES	
04543	0020 00 0 04545		TRA A23A+4	ERROR
04544	0020 00 0 04546		TRA A23A+5	OK-ACC UNCHANGED
04545	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04546	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04547	0020 00 0 04533		TRA A23X	

04550	712563606060		BCD 1ZET	
04551	0520 00 0 06702	A24X	ZET MZE	STG 1-35 ZERO
04552	0020 00 0 04554		TRA *+2	ERROR
04553	0020 00 0 04555		TRA *+2	OK
04554	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04555	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04556	0020 00 0 04551		TRA A24X	
04557	712563606060		BCD 1ZET	
04560	0500 00 0 06701	A24A	CLA ONE	L +1
04561	0601 00 0 07037		STO TEMP	SAVE ACC
04562	0520 00 0 07037		ZET TEMP	STG 1-35 NOT ZERO
04563	0020 00 0 04566		TRA A24A1	OK
04564	0074 00 4 07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04565	0020 00 0 04560		TRA A24A	REPEAT SECTION
04566	0500 00 0 07037	A24A1	CLA TEMP	CHECK STG UNCHANGED
04567	0560 00 0 06701		LDQ ONE	L + 1
04570	0340 00 0 06701		CAS ONE	
04571	0020 00 0 04573		TRA A24A1+5	ERROR
04572	0020 00 0 04574		TRA A24A1+6	OK-STORAGE UNCHANGED
04573	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04574	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04575	0020 00 0 04560		TRA A24A	REPEAT TEST
04576	712563606060		BCD 1ZET	TEST-STORAGE TEST
				POSITIONS S, 1-35
04577	0760 00 0 00000	24A	CLM	CLEAR ACC
04600	0500 00 0 06701		CLA ONE	L +1
04601	0601 00 0 07037		STO TEMP	SAVE ACC
04602	0520 00 0 07037		ZET TEMP	STG 1-35 NOT ZERO
04603	0020 00 0 04606		TRA 24B	OK
04604	0074 00 4 07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04605	0020 00 0 04577		TRA 24A	REPEAT SECTION
04606	0767 00 0 00001	24B	ALS 1	MOVE BIT
04607	-0760 00 0 00001		PBT	P BIT YET
04610	0020 00 0 04601		TRA 24A+2	NO
04611	0602 00 0 07037		SLW TEMP	STG 1-35 ZERO
04612	0520 00 0 07037		ZET TEMP	TEST SIGN POSITION
04613	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04614	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04615	0020 00 0 04577		TRA 24A	REPEAT TEST
04616	712563606060		BCD 1ZET	
04617	0760 00 0 00000	24C	CLM	
04620	0602 00 0 07037		SLW TEMP	STG 1-35 ZERO
04621	0520 00 0 07037		ZET TEMP	
04622	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04623	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04624	0020 00 0 04617		TRA 24C	REPEAT TEST

04625	457163606060		BCD 1NZT	TEST-STORAGE NOT ZERO TEST
04626	0500 00 0 06701	A25X	CLA ONE	L +1
04627	0601 00 0 07037		STO TEMP	SAVE ACC
04630	-0520 00 0 07037		NZT TEMP	STG 1-35 NOT ZERO
04631	0020 00 0 04633		TRA *+2	ERROR
04632	0020 00 0 04635		TRA A25A	OK
04633	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04634	0020 00 0 04626		TRA A25X	
04635	0560 00 0 06701	A25A	LDQ ONE	L +1 TO MQ
04636	0340 00 0 06701		CAS ONE	
04637	0020 00 0 04641		TRA A25A+4	ERROR
04640	0020 00 0 04643		TRA A25A1	OK-ACC UNCHANGED
04641	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04642	0020 00 0 04626		TRA A25X	
04643	0500 00 0 07037	A25A1	CLA TEMP	L +1
04644	0340 00 0 06701		CAS ONE	
04645	0020 00 0 04647		TRA A25A1+4	ERROR
04646	0020 00 0 04650		TRA A25A1+5	OK-STORAGE UNCHANGED
04647	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04650	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04651	0020 00 0 04626		TRA A25X	
04652	457163606060		BCD 1NZT	
04653	-0520 00 0 06675	A26X	NZT ZERO	STG 1-35 ZERO
04654	0020 00 0 04656		TRA *+2	OK
04655	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04656	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04657	0020 00 0 04653		TRA A26X	
04660	457163606060		BCD 1NZT	TEST STORAGE NOT ZERO
				POSITIONS S, 1 TO 35
04661	0760 00 0 00000	26A	CLM	CLEAR ACC
04662	0500 00 0 06701		CLA ONE	L +1
04663	0601 00 0 07037		STO TEMP	SAVE ACC
04664	-0520 00 0 07037		NZT TEMP	STG 1-35 NOT ZERO
04665	0020 00 0 04667		TRA *+2	ERROR
04666	0020 00 0 04671		TRA 26B	OK
04667	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
04670	0020 00 0 04661		TRA 26A	REPEAT SECTION
04671	0767 00 0 00001	26B	ALS 1	MOVE BIT
04672	-0760 00 0 00001		PBT	P BIT YET
04673	0020 00 0 04663		TRA 26A+2	NO
04674	0602 00 0 07037		SLW TEMP	SAVE ACC
04675	-0520 00 0 07037		NZT TEMP	STG 1-35 ZERO
04676	0020 00 0 04700		TRA *+2	OK
04677	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
04700	0074 00 4 07047		TSX OK,4	CONTINUE TEST
04701	0020 00 0 04661		TRA 26A	REPEAT TEST

04702	457163606060		BCD 1NZT	
04703	0760 00 0 00000	26C	CLM	
04704	0602 00 0 07037		SLW TEMP	SAVE ACC
04705	-0520 00 0 07037		NZT TEMP	STG 1-35 ZERO
04706	0020 00 0 04710		TRA 26C+5	OK
04707	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04710	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04711	0020 00 0 04703		TRA 26C	REPEAT TEST
04712	432162606060		BCD 1LAS	TEST-LOGICAL COMPARE ACC WITH STORAGE
04713	0500 00 0 06676	A27X	CLA ONES	L ALL ONES
04714	0601 00 0 07037		STO TEMP	SAVE ACC
04715	-0500 00 0 06702		CAL MZE	L BIT IN P
04716	0767 00 0 00001		ALS 1	SHIFT TO Q
04717	-0340 00 0 07037		LAS TEMP	TEST ACC GREATER THEN STG
04720	0020 00 0 04724		TRA *+4	OK
04721	0020 00 0 04722		TRA *+1	ERROR
04722	0074 00 4 07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04723	0020 00 0 04713		TRA A27X	
04724	0560 00 0 06675	A27A	LDQ ZERO	L +0 TO MQ
04725	0771 00 0 00002		ARS 2	SHIFT TO POS 1
04726	0400 00 0 06750		ADD MTW	L -2000000000
04727	0100 00 0 04732		TZE A27A1	OK ACC UNCHANGED
04730	0074 00 4 07041		TSX ERROR-1, 4	TO ERROR ROUTINE
04731	0020 00 0 04713		TRA A27X	
04732	0500 00 0 07037	A27A1	CLA TEMP	CHECK STG UNCHANGED
04733	0560 00 0 06676		LDQ ONES	L ONES TO MQ
04734	0340 00 0 06676		CAS ONES	
04735	0020 00 0 04737		TRA A27A1+5	ERROR
04736	0020 00 0 04740		TRA A27A1+6	OK STORAGE UNCHANGED
04737	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04740	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04741	0020 00 0 04713		TRA A27X	
04742	432162606060		BCD 1LAS	
04743	0500 00 0 06700	A28X	CLA K3	L -377777077777
04744	-0340 00 0 06677		LAS K2	L +700000-TEST STORAGE LESS THAN ACCUMULATOR
04745	0020 00 0 04750		TRA *+3	OK
04746	0020 00 0 04747		TRA *+1	ERROR
04747	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE
04750	0074 00 4 07047		TSX OK, 4	CONTINUE TEST
04751	0020 00 0 04743		TRA A28X	
04752	432162606060		BCD 1LAS	
04753	0500 00 0 06750	A29X	CLA MTW	L -2000000000
04754	0767 00 0 00001		ALS 1	SHIFT TO POS P
04755	-0340 00 0 06750		LAS MTW	TEST STG GREATER THAN ACC
04756	0020 00 0 04757		TRA *+1	ERROR
04757	0074 00 4 07042		TSX ERROR, 4	TO ERROR ROUTINE

04760	0074	00	4	07047		TSX OK,4	CONTINUE TEST
04761	0020	00	0	04753		TRA A29X	
04762	432162606060					BCD 1LAS	
04763	-0500	00	0	06702	A30X	CAL MZE	L P BIT
04764	-0340	00	0	06702		LAS MZE	TEST STG AND ACC EQUAL
04765	0020	00	0	04767		TRA *+2	ERROR
04766	0020	00	0	04770		TRA *+2	OK
04767	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
04770	0074	00	4	07047		TSX OK,4	CONTINUE TEST
04771	0020	00	0	04763		TRA A30X	
04772	654344606060					BCD 1VLM	TEST-VAR LENGTH MULTIPLY
04773	0560	00	0	06676	A31X	LDQ ONES	L ALL ONES TO MQ
04774	0204	43	0	06701		VLM ONE,0,35	SET 43 IN SHIFT COUNTER
04775	-0120	00	0	05000		TMI A31A	ACC SIGN OK
04776	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
04777	0020	00	0	04773		TRA A31X	
05000	0100	00	0	05003	A31A	TZE A31A1	ACC OK
05001	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05002	0020	00	0	04773		TRA A31X	
05003	0763	00	0	00043	A31A1	LLS 35	BRING MQ TO ACC
05004	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05005	0340	00	0	06676		CAS ONES	
05006	0020	00	0	05010		TRA A31A1+5	ERROR
05007	0020	00	0	05011		TRA A31A1+6	MQ OK
05010	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05011	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05012	0020	00	0	04773		TRA A31X	
05013	654344606060					BCD 1VLM	
05014	0560	00	0	06676	A32X	LDQ ONES	L ALL ONES TO MQ
05015	0204	01	0	06677		VLM K2,0,1	SET 1 IN SHIFT COUNTER
05016	0767	00	0	00001		ALS 1	
05017	0760	00	0	00002		CHS	ACC NOW +000000700000
05020	0560	00	0	06677		LDQ K2	L +700000 MQ, ACC SHOULD BE THE SAME
05021	0340	00	0	06677		CAS K2	
05022	0020	00	0	05024		TRA *+2	ERROR
05023	0020	00	0	05025		TRA *+2	OK
05024	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05025	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05026	0020	00	0	05014		TRA A32X	
05027	654344606060					BCD 1VLM	
05030	0560	00	0	06676	A33X	LDQ ONES	L ALL ONES TO MQ
05031	0500	00	0	06676		CLA ONES	L ALL ONES
05032	0204	17	0	06677		VLM K2,0,15	SET 17 IN SHIFT COUNTER
05033	0760	00	0	00002		CHS	ACC NOW +000000677771
05034	-0600	00	0	07037		STQ TEMP	SAVE MQ

05035	0560	00	0	06710		LDQ K11	L +677771 MQ, ACC SHOULD BE THE SAME
05036	0340	00	0	06710		CAS K11	
05037	0020	00	0	05041		TRA *+2	ERROR
05040	0020	00	0	05043		TRA A33A	ACC OK
05041	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05042	0020	00	0	05030		TRA A33X	
05043	0500	00	0	07037	A33A	CLA TEMP	CHECK SAVED ACC
05044	0760	00	0	00002		CHS	ACC NOW +000003777777
05045	0560	00	0	06711		LDQ K12	L +37777777 MQ, ACC SHOULD BE THE SAME
05046	0340	00	0	06711		CAS K12	
05047	0020	00	0	05051		TRA A33A+6	ERROR
05050	0020	00	0	05052		TRA A33A+7	MQ OK
05051	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05052	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05053	0020	00	0	05030		TRA A33X	
05054	654344606060					BCD 1VLM	TEST-VLM WITH INDEXING
05055	0534	00	1	06760	A34X	LXA K37A,1	L 43 IN XRA
05056	0560	00	0	06703		LDQ K6	L -377777777770
05057	0204	04	1	06743		VLM K3+35,1,4	SET 4 IN SHIFT COUNTER
05060	0763	00	0	00001		LLS 1	
05061	0760	00	0	00002		CHS	ACC NOW -377777077777
05062	-0600	00	0	07037		STQ TEMP	SAVE MQ
05063	0560	00	0	06700		LDQ K3	L -377777077777 ACC, MQ SHOULD BE THE SAME
05064	0340	00	0	06700		CAS K3	
05065	0020	00	0	05067		TRA *+2	ERROR
05066	0020	00	0	05071		TRA A34AA	ACC OK
05067	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05070	0020	00	0	05055		TRA A34X	
05071	0500	00	0	07037	A34AA	CLA TEMP	CHECK SAVED MQ
05072	0560	00	0	06712		LDQ K13	L +037777777776 MQ, ACC SHOULD BE THE SAME
05073	0340	00	0	06712		CAS K13	
05074	0020	00	0	05076		TRA A34AA+5	ERROR
05075	0020	00	0	05077		TRA A34AA+6	MQ OK
05076	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05077	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05100	0020	00	0	05055		TRA A34X	
05101	654344606060					BCD 1VLM	TEST-VARIABLE LENGTH MULTIPLY ZERO WORD COUNT
05102	0500	00	0	06742	A34A	CLA K24	
05103	0560	00	0	06742		LDQ K24	L+1111111111
05104	0204	00	0	06676		VLM ONES,0,0	SHIFT COUNTER ZERO
05105	-0600	00	0	07037		STQ TEMP	SAVE MQ
05106	0560	00	0	06742		LDQ K24	L+1111111111
05107	0340	00	0	06742		CAS K24	CHECK ACC UNCHANGED
05110	0020	00	0	05112		TRA A34A+8	ERROR
05111	0020	00	0	05114		TRA A34B	OK-ACC UNCHANGED

05112	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05113	0020	00	0	05102		TRA A34A	REPEAT SECTION
05114	0500	00	0	07037	A34B	CLA TEMP	CHECK SAVED MQ
05115	0340	00	0	06742		CAS K24	CHECK MQ UNCHANGED
05116	0020	00	0	05120		TRA A34B+4	ERROR
05117	0020	00	0	05121		TRA A34B+5	OK MQ UNCHANGED
05120	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05121	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05122	0020	00	0	05102		TRA A34A	REPEAT TEST
05123	654344606060					BCD 1VLM	TEST VARIABLE LENGTH MULTIPLY ZERO MULTIPLICAND, ZERO COUNT COUNT TAKES PRECEDENT
05124	0500	00	0	06676	A34C	CLA ONES	L ALL ONES
05125	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05126	0204	00	0	06675		VLM ZERO,0,0	SHIFT COUNTER ZERO
05127	-0600	00	0	07037		STQ TEMP	SAVE MQ
05130	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05131	0340	00	0	06676		CAS ONES	
05132	0020	00	0	05134		TRA A34C+8	ERROR
05133	0020	00	0	05136		TRA A34D	OK-ACC UNCHANGED
05134	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05135	0020	00	0	05124		TRA A34C	REPEAT SECTION
05136	0500	00	0	07037	A34D	CLA TEMP	CHECK SAVE MQ
05137	0340	00	0	06676		CAS ONES	
05140	0020	00	0	05142		TRA A34D+4	ERROR
05141	0020	00	0	05143		TRA A34D+5	OK MQ UNCHANGED
05142	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05143	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05144	0020	00	0	05124		TRA A34C	REPEAT TEST
05145	654344606060					BCD 1VLM	TEST-VARIABLE LENGHT MULTIPLY WITH ZERO MULTIPLCAND
05146	0500	00	0	06676	A34E	CLA ONES	L ALL ONES
05147	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05150	0204	05	0	06675		VLM ZERO,0,5	
05151	-0120	00	0	05154		TMI A34E1	ACC SIGN OK
05152	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05153	0020	00	0	05146		TRA A34E	REPEAT SECTION
05154	0100	00	0	05157	A34E1	TZE A34F	ACC OK
05155	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05156	0020	00	0	05146		TRA A34E	REPEAT SECTION
05157	-0600	00	0	07037	A34F	STQ TEMP	SAVE MQ
05160	0500	00	0	07037		CLA TEMP	CHECK SAVED MQ
05161	-0120	00	0	05164		TMI A34F1	MQ SIGN OK
05162	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05163	0020	00	0	05146		TRA A34E	REPEAT SECTION

05164	0100	00	0	05166	A34F1	TZE	A34F1+2	MQ OK
05165	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE
05166	0074	00	4	07047		TSX	OK,4	CONTINUE TEST
05167	0020	00	0	05146		TRA	A34E	REPEAT TEST
05170	654344606060					BCD	1VLM	TEST-VARIABLE LENGHT MULTIPLY-ZERO MULTIPLICAND
05171	0500	00	0	06676	A34G	CLA	ONES	L ONES
05172	0560	00	0	06676		LDQ	ONES	L ONES TO MQ
05173	0204	05	0	06702		VLM	MZE,0,5	
05174	0120	00	0	05177		TPL	A34G1	ACC SIGN OK
05175	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE
05176	0020	00	0	05171		TRA	A34G	REPEAT SECTION
05177	0100	00	0	05202	A34G1	TZE	A34H	ACC OK
05200	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE
05201	0020	00	0	05171		TRA	A34G	REPEAT SECTION
05202	-0600	00	0	07037	A34H	STQ	TEMP	SAVE MQ
05203	0500	00	0	07037		CLA	TEMP	CHECK SAVED MQ
05204	0120	00	0	05207		TPL	A34H1	MQ SIGN OK
05205	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE
05206	0020	00	0	05171		TRA	A34G	REPEAT SECTION
05207	0100	00	0	05211	A34H1	TZE	A34H1+2	MQ OK
05210	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE
05211	0074	00	4	07047		TSX	OK,4	CONTINUE TEST
05212	0020	00	0	05171		TRA	A34G	REPEAT TEST
05213	652447606060					BCD	1VDP	TEST-VAR LENGTH DIVIDE OR PROCEED
05214	0560	00	0	06676	A35X	LDQ	ONES	L ALL ONES TO MQ
05215	0500	00	0	06702		CLA	MZE	L -0
05216	0225	43	0	06701		VDP	ONE,0,35	SET 43 IN SHIFT COUNTER
05217	-0120	00	0	05222		TMI	A35A	
05220	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE
05221	0020	00	0	05214		TRA	A35X	REPEAT SECTION
05222	0100	00	0	05225	A35A	TZE	A35A1	REMAINDER OK
05223	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE
05224	0020	00	0	05214		TRA	A35X	
05225	0763	00	0	00043	A35A1	LLS	35	CHECK QUOTIENT
05226	0560	00	0	06676		LDQ	ONES	L ALL ONES TO MQ
05227	0340	00	0	06676		CAS	ONES	
05230	0020	00	0	05232		TRA	A35A1+5	ERROR
05231	0020	00	0	05233		TRA	A35A1+6	QUOTIENT OK
05232	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE
05233	0074	00	4	07047		TSX	OK,4	
05234	0020	00	0	05214		TRA	A35X	
05235	652447606060					BCD	1VDP	CHECK MQ SIGN CHANGE
05236	0560	00	0	06706	A36X	LDQ	K8	L +177777777777 IN MQ

05237	0500	00	0	06713		CLA K14	L -340000
05240	0225	01	0	06677		VDP K2,0,1	SET 1 IN SHIFT COUNTER
05241	-0120	00	0	05244		TMI A36A	REMAINDER SIGN OK
05242	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05243	0020	00	0	05236		TRA A36X	
05244	0100	00	0	05247	A36A	TZE A36A1	REMAINDER OK
05245	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05246	0020	00	0	05236		TRA A36X	
05247	0763	00	0	00043	A36A1	LLS 35	CHECK QUOTIENT
05250	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05251	0340	00	0	06676		CAS ONES	
05252	0020	00	0	05254		TRA A36A1+5	ERROR
05253	0020	00	0	05255		TRA A36A1+6	QUOTIENT OK
05254	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05255	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05256	0020	00	0	05236		TRA A36X	
05257	652447606060					BCD 1VDP	
05260	0560	00	0	06711	A37X	LDQ K12	L +37777777 IN MQ
05261	0500	00	0	06710		CLA K11	L+677771
05262	0225	17	0	06677		VDP K2,0,15	SET 17 IN SHIFT COUNTER
05263	0120	00	0	05266		TPL A37A	REMAINDER SIGN OK
05264	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05265	0020	00	0	05260		TRA A37X	
05266	0100	00	0	05271	A37A	TZE A37A1	REMAINDER OK
05267	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05270	0020	00	0	05260		TRA A37X	
05271	0763	00	0	00043	A37A1	LLS 35	CHECK QUOTIENT
05272	0760	00	0	00002		CHS	ACC NO -3777777777
05273	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
05274	0340	00	0	06676		CAS ONES	
05275	0020	00	0	05277		TRA A37A1+6	ERROR
05276	0020	00	0	05300		TRA A37A1+7	QUOTIENT OK
05277	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05300	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05301	0020	00	0	05260		TRA A37X	
05302	652447606060					BCD 1VDP	TEST-VDP WITH INDEXING
05303	0534	00	1	06760	A40X	LXA K37A,1	L 43 IN XRA
05304	0502	00	0	06700		CLS K3	L -377777077777
05305	0560	00	0	06712		LDQ K13	L +377777777776
05306	0765	00	0	00001		LRS 1	
05307	0225	04	1	06743		VDP K3+35,1,4	SET 4 IN SHIFT COUNTER
05310	0120	00	0	05313		TPL A40A	REMAINDER SIGN OK
05311	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05312	0020	00	0	05303		TRA A40X	
05313	0100	00	0	05316	A40A	TZE A40A1	REMAINDER OK
05314	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05315	0020	00	0	05303		TRA A40X	

05316	0763	00	0	00043	A40A1	LLS 35	CHECK QUOTIENT
05317	0560	00	0	06703		LDQ K6	L -377777777770 MQ, ACC SHOULD BE THE SAME
05320	0340	00	0	06703		CAS K6	
05321	0020	00	0	05323		TRA A40A1+5	ERROR
05322	0020	00	0	05324		TRA A40A1+6	QOUTIENT OK
05323	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05324	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05325	0020	00	0	05303		TRA A40X	
05326	652447606060					BCD 1VDP	
05327	0760	00	0	00012	A41X	DCT	TURN OFF DIV-CHECK LIGHT
05330	0761	00	0	00000		NOP	
05331	0560	00	0	06756		LDQ K36	L +377777777776
05332	0500	00	0	06677		CLA K2	L +700000
05333	0225	22	0	06677		VDP K2,0,18	L +700000
05334	0760	00	0	00012		DCT	CHECK SETTING TRG
05335	0020	00	0	05340		TRA A41AA	OK DIV-CHECK LITE WAS ON DIVISION NOT POSSIBLE
05336	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05337	0020	00	0	05327		TRA A41X	
05340	-0600	00	0	07037	A41AA	STQ TEMP	SAVE MQ
05341	0560	00	0	06677		LDQ K2	L +700000 MQ, ACC SHOULD BE THE SAME
05342	0340	00	0	06677		CAS K2	CHECK ACC UNCHANGED
05343	0020	00	0	05345		TRA A41AA+5	ERROR
05344	0020	00	0	05347		TRA A41AB	OK-ACC UNCHANGED
05345	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05346	0020	00	0	05327		TRA A41X	
05347	0500	00	0	07037	A41AB	CLA TEMP	CHECK SAVED MQ
05350	0560	00	0	06756		LDQ K36	L +377777777776 MQ, ACC SHOULD BE THE SAME
05351	0340	00	0	06756		CAS K36	CHECK MQ UNCHANGED
05352	0020	00	0	05354		TRA A41AB+5	ERROR
05353	0020	00	0	05355		TRA A41AB+6	OK-MQ UNCHANGED
05354	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05355	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05356	0020	00	0	05327		TRA A41X	
05357	652447606060					BCD 1VDP	TEST-VARIABLE DIVIDE OR PROCEED WITH ZERO WORD COUNT
05360	0500	00	0	06710	A41A	CLA K11	L +677771
05361	0760	00	0	00012		DCT	TURN OFF DIV-CHECK LITE
05362	0761	00	0	00000		NOP	
05363	0560	00	0	06710		LDQ K11	L+677771
05364	0225	00	0	06677		VDP K2,0,0	
05365	-0600	00	0	07037		STQ TEMP	SAVE MQ
05366	0560	00	0	06710		LDQ K11	L +677771
05367	0340	00	0	06710		CAS K11	CHECK ACC UNCHANGED
05370	0020	00	0	05372		TRA A41A+10	ERROR

05371	0020	00	0	05374		TRA A41B	OK-ACC UNCHANGED
05372	0074	00	4	07041		TSX ERROR-1,4	
05373	0020	00	0	05360		TRA A41A	REPEAT SECTION
05374	0500	00	0	07037	A41B	CLA TEMP	CHECK SAVED MQ
05375	0340	00	0	06710		CAS K11	CHECK MQ UNCHANGED
05376	0020	00	0	05400		TRA A41B+4	ERROR
05377	0020	00	0	05402		TRA A41C	OK-MQ UNCHANGED
05400	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05401	0020	00	0	05360		TRA A41A	REPEAT SECTCION
05402	0760	00	0	00012	A41C	DCT	
05403	0020	00	0	05405		TRA A41C+3	NG DIV-CHECK LITE WAS ON
05404	0020	00	0	05406		TRA A41C+4	OK-DIV-CHECK LITE OFF
05405	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05406	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05407	0020	00	0	05360		TRA A41A	REPEAT TEST
05410	652430606060					BCD 1VDH	TEST-VAR LENGTH DIVIDE OR HALT
05411	0560	00	0	06676	A42X	LDQ ONES	L ALL ONES TO MQ
05412	0500	00	0	06702		CLA MZE	L -0
05413	0224	43	0	06701		VDH ONE,0,35	SET 43 IN SHIFT COUNTER
05414	-0120	00	0	05417		TMI A42A	REMAINDER SIGN OK
05415	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05416	0020	00	0	05411		TRA A42X	
05417	0100	00	0	05422	A42A	TZE A42A1	REMAINDER OK
05420	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05421	0020	00	0	05411		TRA A42X	
05422	0763	00	0	00043	A42A1	LLS 35	CHECK QUOTIENT
05423	0560	00	0	06676		LDQ ONES	
05424	0340	00	0	06676		CAS ONES	
05425	0020	00	0	05427		TRA A42A1+5	ERROR
05426	0020	00	0	05430		TRA A42A1+6	QUOTIENT OK
05427	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05430	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05431	0020	00	0	05411		TRA A42X	
05432	652430606060					BCD 1VDH	
05433	0560	00	0	06706	A43X	LDQ K8	L +177777777777 TO MQ
05434	0500	00	0	06713		CLA K14	L -370000
05435	0224	01	0	06677		VDH K2,0,1	SET 1 IN SHIFT COUNTER
05436	-0120	00	0	05441		TMI A43A	
05437	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05440	0020	00	0	05433		TRA A43X	
05441	0100	00	0	05444	A43A	TZE A43A1	REMAINDER OK
05442	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05443	0020	00	0	05433		TRA A43X	
05444	0763	00	0	00043	A43A1	LLS 35	CHECK QUOTIENT
05445	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ

05446	0340	00	0	06676		CAS	ONES		
05447	0020	00	0	05451		TRA	A43A1+5	ERROR	
05450	0020	00	0	05452		TRA	A43A1+6	QUOTIENT OK	
05451	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05452	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05453	0020	00	0	05433		TRA	A43X		
05454	652430606060						BCD	1VDH	
05455	0560	00	0	06711	A44X	LDQ	K12	L +37777777	
05456	0500	00	0	06710		CLA	K11	L +677771	
05457	0224	17	0	06677		VDH	K2,0,15	SET 17 IN SHIFT COUNTER	
05460	0120	00	0	05463		TPL	A44A	REMAINDER SIGN OK	
05461	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05462	0020	00	0	05455		TRA	A44X		
05463	0100	00	0	05466	A44A	TZE	A44A1	REMAINDER OK	
05464	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05465	0020	00	0	05455		TRA	A44X		
05466	0763	00	0	00043	A44A1	LLS	35	CHECK QUOTIENT	
05467	0760	00	0	00002		CHS		ACC NOW -37777777777	
05470	0560	00	0	06676		LDQ	ONES	L ALL ONES TO MQ	
05471	0340	00	0	06676		CAS	ONES		
05472	0020	00	0	05474		TRA	A44A1+6	ERROR	
05473	0020	00	0	05475		TRA	A44A1+7	QUOTIENT OK	
05474	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05475	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05476	0020	00	0	05455		TRA	A44X		
05477	652430606060						BCD	1VDH	TEST-VDH WITH INDEXING
05500	0534	00	1	06760	A45X	LXA	K37A,1	L +43 IN XRA	
05501	0502	00	0	06700		CLS	K3	L -3777770777777	
05502	0560	00	0	06712		LDQ	K13	L +9037777777776	
05503	0765	00	0	00001		LRS	1		
05504	0224	04	1	06743		VDH	K3+35,1,4	SET 4 IN SHIFT COUNTER	
05505	0120	00	0	05510		TPL	A45A	REMAINDER SIGN OK	
05506	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05507	0020	00	0	05500		TRA	A45X		
05510	0100	00	0	05513	A45A	TZE	A45A1	REMAINDER OK	
05511	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05512	0020	00	0	05500		TRA	A45X		
05513	0763	00	0	00043	A45A1	LLS	35	CHECK QUOTIENT	
05514	0560	00	0	06703		LDQ	K6	L -377777777770 MQ, ACC SHOULD BE THE SAME	
05515	0340	00	0	06703		CAS	K6		
05516	0020	00	0	05520		TRA	A45A1+5	ERROR	
05517	0020	00	0	05521		TRA	A45A1+6	QUOTIENT OK	
05520	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05521	0074	00	4	07047		TSX	OK,4		
05522	0020	00	0	05500		TRA	A45X		

05523	236551606060		BCD 1CVR	TEST-CONVERT BY REPLACEMENT FROM ACC
05524	0534 00 1 06675	A47X	LXA ZERO,1	CLEAR XRA
05525	0500 00 0 06677		CLA K2	L +700000
05526	0114 00 1 06714		CVR K15,1	CHECK NO COUNT-NO ACTION
05527	0560 00 0 06677		LDQ K2	L +70000 MQ, ACC SHOULD BE THE SAME
05530	0340 00 0 06677		CAS K2	
05531	0020 00 0 05533		TRA *+2	ERROR
05532	0020 00 0 05535		TRA A47A	OK
05533	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
05534	0020 00 0 05524		TRA A47X	
05535	0500 00 1 15630	A47A	CLA K15+K15,1	CHECK ADR PUT IN XRA
05536	0560 00 0 06714		LDQ K15	L +374000003400 MQ, ACC SHOULD BE THE SAME
05537	0340 00 0 06714		CAS K15	
05540	0020 00 0 05542		TRA A47A+5	ERROR
05541	0020 00 0 05543		TRA A47A+6	OK
05542	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
05543	0074 00 4 07047		TSX OK,4	
05544	0020 00 0 05524		TRA A47X	
05545	236551606060		BCD 1CVR	
05546	0534 00 1 06675	A50X	LXA ZERO,1	CLEAR XRA
05547	-0500 00 0 06677		CAL K2	L +700000
05550	0114 01 0 06676		CVR ONES,0,1	CHECK ONE 6 BIT CONVERSION NO ADDITION TO ADDRESS
05551	0602 00 0 07037		SLW TEMP	SAVE ACC BEFORE SHIFT
05552	0771 00 0 00001		ARS 1	ACC NOW +374000003400
05553	-0760 00 0 00001		PBT	
05554	0020 00 0 05557		TRA A50A	OK Q WAS ZERO
05555	0074 00 4 07041		TSX ERROR-1,4	TO ERROR ROUTINE
05556	0020 00 0 05546		TRA A50X	
05557	0500 00 1 07037	A50A	CLA TEMP,1	L SAVED ACC
05560	0560 00 0 06715		LDQ K15+1	L -370000007000 MQ, ACC SHOULD BE THE SAME
05561	0340 00 0 06715		CAS K15+1	
05562	0020 00 0 05564		TRA A50A+5	ERROR
05563	0020 00 0 05565		TRA A50A+6	OK
05564	0074 00 4 07042		TSX ERROR,4	TO ERROR ROUTINE
05565	0074 00 4 07047		TSX OK,4	CONTINUE TEST
05566	0020 00 0 05546		TRA A50X	
05567	236551606060		BCD 1CVR	
05570	0534 00 1 06675	A51X	LXA ZERO,1	CLEAR XRA
05571	-0500 00 0 06701		CAL ONE	L +1
05572	0114 01 0 06675		CVR ZERO,0,1	CHECK ONE 6 BIT CONVERSION ADDITION TO ADDRESS
05573	0602 00 0 07037		SLW TEMP	SAVE ACC
05574	0771 00 0 00001		ARS 1	ACC NOW +374000000000
05575	-0760 00 0 00001		PBT	
05576	0020 00 0 05601		TRA A51A	OK Q W S Z R0

05577	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05600	0020	00	0	05570		TRA A51X	
05601	0500	00	1	07037	A51A	CLA TEMP,1	L SAVED ACC
05602	0560	00	0	06704		LDQ SW1	L -370000000000 IN MQ
05603	0340	00	0	06704		CAS SW1	
05604	0020	00	0	05606		TRA A51A+5	ERROR
05605	0020	00	0	05607		TRA A51A+6	OK
05606	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05607	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05610	0020	00	0	05570		TRA A51X	
05611	236551606060					BCD 1CVR	
05612	-0500	00	0	06717	A52X	CAL K16	L +010203040506
05613	0114	06	1	06717		CVR K16,1,6	FULL WORD CONVERSION
05614	0560	00	1	15651		LDQ K16B+K16,1	L +212223242526
05615	0340	00	0	06732		CAS K16B	
05616	0020	00	0	05620		TRA *+2	ERROR
05617	0020	00	0	05621		TRA *+2	OK
05620	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05621	0074	00	4	07047		TSX OK,4	
05622	0020	00	0	05612		TRA A52X	
05623	236551606060					BCD 1CVR	
05624	-0500	00	0	06734	A53X	CAL K17+1	L -374777770304
05625	0767	00	0	00001		ALS 1	PUT BIT IN Q MAKE ACC +11371777760610
05626	0114	02	0	06723		CVR K17-8,0,2	
05627	0560	00	0	06752		LDQ K32	L -374777177776 SHOULD BE THE SAME
05630	-0340	00	0	06752		LAS K32	
05631	0020	00	0	05633		TRA *+2	ERROR
05632	0020	00	0	05634		TRA *+2	OK
05633	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
05634	0074	00	4	07047		TSX OK,4	CONTINUE TEST
05635	0020	00	0	05624		TRA A53X	
05636	232150606060					BCD 1CAQ	TEST-CONVERT BY ADDITION FROM THE MQ
05637	0560	00	0	06717	A54X	LDQ K16	L +010203040506
05640	0500	00	0	06702		CLA MZE	L -0
05641	-0114	00	0	06717		CAQ K16	NO COUNT-NO ACTION
05642	-0120	00	0	05645		TMI A54A	ACC SIGN OK
05643	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05644	0020	00	0	05637		TRA A54X	
05645	0100	00	0	05650	A54A	TZE A54A1	ACC OK
05646	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
05647	0020	00	0	05637		TRA A54X	
05650	0763	00	0	00043	A54A1	LLS 35	MQ TO ACC AND CHECK
05651	0560	00	0	06717		LDQ K16	L +010203040506 MQ, ACC SHOULD BE THE SAME

05652	0340	00	0	06717		CAS	K16		
05653	0020	00	0	05655		TRA	A54A1+5	ERROR	
05654	0020	00	0	05656		TRA	A54A1+6	MQ OK	
05655	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05656	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05657	0020	00	0	05637		TRA	A54X		
05660	232150606060						BCD	1CAQ	
05661	0534	00	1	06675	A55X	LXA	ZERO,1	CLEAR XRA	
05662	0560	00	0	06717		LDQ	K16	L +010203040506	
05663	0500	00	0	06675		CLA	ZERO	L + 0	
05664	-0114	01	0	06716		CAQ	K16-1,0,1	PERFORM 1 ADDITION	
05665	-0600	00	0	07037		STQ	TEMP	SAVE MQ	
05666	0560	00	0	06717		LDQ	K16	L +010203040506 MQ, ACC SHOULD BE THE SAME	
05667	0340	00	0	06717		CAS	K16		
05670	0020	00	0	05672		TRA	*+2	ERROR	
05671	0020	00	0	05674		TRA	A55A	OK	
05672	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05673	0020	00	0	05661		TRA	A55X		
05674	0500	00	1	07037	A55A	CLA	TEMP,1	CHECK SAVED MQ	
05675	0560	00	0	06716		LDQ	K16-1	L+020304050601	
05676	0340	00	0	06716		CAS	K16-1		
05677	0020	00	0	05701		TRA	A55A+5	ERROR	
05700	0020	00	0	05702		TRA	A55A+6	OK	
05701	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05702	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05703	0020	00	0	05661		TRA	A55X		
05704	232150606060						BCD	1CAQ	
05705	0140	00	0	05706	A56X	TOV	*+1	TURN OFF ACC OVFL0 LIGHT	
05706	0560	00	0	06717		LDQ	K16	L +010203040506	
05707	0500	00	0	06675		CLA	ZERO	L +0	
05710	-0114	06	1	06717		CAQ	K16,1,6	FULL WORD CONVERSION	
05711	0602	00	0	07037		SLW	TEMP	SAVE ACC	
05712	0771	00	0	00001		ARS	1	MOVE Q BIT TO P	
05713	-0760	00	0	00001		PBT			
05714	0020	00	0	05716		TRA	*+2	ERROR	
05715	0020	00	0	05720		TRA	A56A	OK	
05716	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05717	0020	00	0	05705		TRA	A56X		
05720	-0600	00	0	07040	A56A	STQ	TEMP+1	SAVE MQ	
05721	0500	00	1	15756		CLA	TEMP+K16,1	CHECK SAVED MQ	
05722	0560	00	0	06726		LDQ	K16+7	MQ, ACC SHOULD BE SAME	
05723	0340	00	0	06726		CAS	K16+7		
05724	0020	00	0	05726		TRA	A56A+6	ERROR	
05725	0020	00	0	05730		TRA	A56A1	OK	
05726	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05727	0020	00	0	05705		TRA	A56X		
05730	0500	00	0	07040	A56A1	CLA	TEMP+1	CHECK SAVED MQ	
05731	0560	00	0	06717		LDQ	K16	L +010203040506 MQ, ACC	

05732	0340	00	0	06717		CAS	K16		
05733	0020	00	0	05735		TRA	A56A1+5	ERROR	
05734	0020	00	0	05736		TRA	A56A1+6	OK	
05735	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05736	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05737	0020	00	0	05705		TRA	A56X		
05740	232150606060						BCD	1CAQ	
05741	0500	00	0	06713	A57X	CLA	K14	L -340000	
05742	0560	00	0	06717		LDQ	K16	L +010203040506	
05743	-0114	02	0	06732		CAQ	K17-1,0,2	TEST SWITCHING TABLES	
05744	0602	00	0	07037		SLW	TEMP	SAVE ACC	
05745	0771	00	0	00001		ARS	1		
05746	-0760	00	0	00001		PBT			
05747	0020	00	0	05752		TRA	A57A	OK Q WAS ZERO	
05750	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05751	0020	00	0	05741		TRA	A57X		
05752	0500	00	0	07037	A57A	CLA	TEMP	CHECK SAVED ACC	
05753	0560	00	0	06727		LDQ	K16+8	MQ, ACC SHOULD BE SAME	
05754	0340	00	0	06727		CAS	K16+8		
05755	0020	00	0	05757		TRA	A57A+5	ERROR	
05756	0020	00	0	05760		TRA	A57A+6	OK	
05757	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
05760	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
05761	0020	00	0	05741		TRA	A57X		
05762	232150606060						BCD	1CAQ	
05763	0534	00	1	06747	A60X	LXA	8CF,1	L 77777 IN XRA	
05764	0500	00	0	06675		CLA	ZERO	L +0	
05765	0560	00	0	06717		LDQ	K16	L +010203040506	
05766	-0114	01	6	06717		CAQ	K16,6,1	PERFORM ONE ADD	
05767	0560	00	0	06720		LDQ	K16+1	MQ, ACC SHOULD BE SAME	
05770	0340	00	0	06720		CAS	K16+1		
05771	0020	00	0	05773		TRA	*+2	ERROR	
05772	0020	00	0	05775		TRA	A60A	OK	
05773	0074	00	4	07041		TSX	ERROR-1,4	TO ERROR ROUTINE	
05774	0020	00	0	05763		TRA	A60X		
05775	0500	00	1	06711	A60A	CLA	K13-1,1	CHECK XRA UNCHANGED	
05776	0560	00	0	06712		LDQ	K13	L +037777777776 MQ, ACC SHOULD BE THE SAME	
05777	0340	00	0	06712		CAS	K13		
06000	0020	00	0	06002		TRA	A60A+5	ERROR	
06001	0020	00	0	06003		TRA	A60A+6	OK	
06002	0074	00	4	07042		TSX	ERROR,4	TO ERROR ROUTINE	
06003	0074	00	4	07047		TSX	OK,4	CONTINUE TEST	
06004	0020	00	0	05763		TRA	A60X		
06005	232150606060						BCD	1CAQ	
06006	0500	00	0	06675	A61X	CLA	ZERO	L +0	
06007	0560	00	0	06720		LDQ	K16+1	L +2100000 ADDRESS K16	
06010	-0114	01	1	06673		CAQ	K15-17,1,1	PERFORM 1 ADD, SAVE ADR	

06011	0560	00	0	06714		LDQ K15	L +374000003400 MQ, ACC SHOULD BE SAME
06012	0340	00	0	06714		CAS K15	
06013	0020	00	0	06015		TRA *+2	ERROR
06014	0020	00	0	06017		TRA A61AX	
06015	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06016	0020	00	0	06006		TRA A61X	
06017	0500	00	1	12335	A61AX	CLA K20+1792,1	CHECK XRA SET TO 3400
06020	0560	00	0	06735		LDQ K20	L +265577177776 MQ, ACC SHOULD BE THE SAME
06021	0340	00	0	06735		CAS K20	
06022	0020	00	0	06024		TRA *+2	ERROR
06023	0020	00	0	06025		TRA *+2	
06024	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06025	0074	00	4	07047		TSX OK,4	
06026	0020	00	0	06006		TRA A61X	
06027	235150606060					BCD 1CRQ	TEST-CONVERT BY REPLACEMENT FROM THE MQ
06030	0534	00	1	06747	A62X	LXA 8CF,1	L 77777 IN XRA
06031	0500	00	0	06676		CLA ONES	L ALL ONES
06032	0560	00	0	06717		LDQ K16	L+010203040506
06033	-0154	00	0	06717		CRQ K16	CHECK NO ACTION WITH NO COUNT
06034	-0600	00	0	07037		STQ TEMP	SAVE MQ
06035	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
06036	0340	00	0	06676		CAS ONES	
06037	0020	00	0	06041		TRA *+2	ERROR
06040	0020	00	0	06043		TRA A62AX	OK-ACC UNCHANGED
06041	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06042	0020	00	0	06030		TRA A62X	
06043	0500	00	0	07037	A62AX	CLA TEMP	CHECK SAVED MQ
06044	0560	00	0	06717		LDQ K16	L +010203040506 MQ, ACC SHOULD BE THE SAME
06045	0340	00	0	06717		CAS K16	CHECK SAVED MQ UNCHANGED
06046	0020	00	0	06050		TRA *+2	ERROR
06047	0020	00	0	06052		TRA A62B	OK-MQ UNCHANGED
06050	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06051	0020	00	0	06030		TRA A62X	
06052	0500	00	1	06732	A62B	CLA K17-1,1	CHECK XRA UNCHANGED
06053	0560	00	0	06733		LDQ K17	MQ, ACC SHOULD BE SAME
06054	0340	00	0	06733		CAS K17	
06055	0020	00	0	06057		TRA A62B+5	ERROR
06056	0020	00	0	06060		TRA A62B+6	OK
06057	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06060	0074	00	4	07047		TSX OK,4	CONTINUE TEST
06061	0020	00	0	06030		TRA A62X	
06062	235150606060					BCD 1CRQ	
06063	0500	00	0	06675	A63X	CLA ZERO	L +0
06064	0560	00	0	06717		LDQ K16	L +010203040506
06065	-0154	01	1	06717		CRQ K16,1,1	CHECK 6 BIT CONVERSION

						ALSO CHECK SAVING ADR
06066	0100	00	0	06071	TZE	A63AX OK-ACC UNCHANGED
06067	0074	00	4	07041	TSX	ERROR-1,4 TO ERROR ROUTINE
06070	0020	00	0	06063	TRA	A63X
06071	0763	00	0	00043	A63AX	LLS 35 MQ TO ACC
06072	0560	00	0	06731	LDQ	K16A L +020304050621 MQ, ACC SHOULD BE THE SAME
06073	0340	00	0	06731	CAS	K16A
06074	0020	00	0	06076	TRA	*+2 ERROR
06075	0020	00	0	06100	TRA	A63BX OK
06076	0074	00	4	07041	TSX	ERROR-1,4 TO ERROR ROUTINE
06077	0020	00	0	06063	TRA	A63X
06100	0500	00	1	15633	A63BX	CLA K15+K16,1 CHECK ADR SET IN XRA
06101	0560	00	0	06714	LDQ	K15 L +374000003400 MQ, ACC SHOULD BE THE SAME
06102	0340	00	0	06714	CAS	K15
06103	0020	00	0	06105	TRA	*+2 ERROR
06104	0020	00	0	06106	TRA	*+2 OK
06105	0074	00	4	07042	TSX	ERROR,4 TO ERROR ROUTINE
06106	0074	00	4	07047	TSX	OK,4 CONTINUE TEST
06107	0020	00	0	06063	TRA	A63X
06110	235150606060					BCD 1CRQ
06111	0534	00	1	06675	A64X	LXA ZERO,1 CLEAR XRA
06112	0560	00	0	06717	LDQ	K16 L +010203040506
06113	-0154	06	0	06717	CRQ	K16,0,6 CHECK FULL WORD CONVERSION
06114	0760	00	0	00000	CLM	CLEAR ACC
06115	0763	00	0	00043	LLS	35 BRING MQ TO ACC
06116	0560	00	1	06732	LDQ	K16B,1 L +212223242526 MQ, ACC SHOULD BE THE SAME
06117	0340	00	1	06732	CAS	K16B,1
06120	0020	00	0	06122	TRA	*+2 ERROR
06121	0020	00	0	06123	TRA	*+2 OK
06122	0074	00	4	07042	TSX	ERROR,4 TO ERROR ROUTINE
06123	0074	00	4	07047	TSX	OK,4 CONTINUE TEST
06124	0020	00	0	06111	TRA	A64X
06125	235150606060					BCD 1CRQ
06126	0534	00	1	06675	A64Y	LXA ZERO,1 CLEAR XRA
06127	0560	00	0	06704	LDQ	SW1 L -370000000000
06130	-0154	01	0	06620	CRQ	K15-60,0,1
06131	0760	00	0	00000	CLM	CLEAR ACCUMULATOR
06132	0763	00	0	00043	LLS	35 MQ TO ACCUMULATOR
06133	0402	00	0	06701	SUB	ONE L +1
06134	0100	00	0	06136	TZE	*+2 OK
06135	0074	00	4	07042	TSX	ERROR,4 TO ERROR ROUTINE
06136	0074	00	4	07047	TSX	OK,4
06137	0020	00	0	06126	TRA	A64Y
06140	626343606060					BCD 1STL TEST-STORE INST CTR

06141	0500	00	0	06676	A65X	CLA ONES	L ALL ONES
06142	0601	00	0	07037		STO TEMP	SAVE ACC
06143	-0625	00	0	07037		STL TEMP	
06144	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
06145	0340	00	0	06676		CAS ONES	
06146	0020	00	0	06150		TRA *+2	ERROR
06147	0020	00	0	06152		TRA A65A	OK
06150	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06151	0020	00	0	06141		TRA A65X	
06152	0500	00	0	07037	A65A	CLA TEMP	CHECK TEMP
06153	0560	00	0	06740		LDQ K23	L TXL A65X+3,7,32767
06154	0340	00	0	06740		CAS K23	
06155	0020	00	0	06157		TRA A65A+5	ERROR
06156	0020	00	0	06160		TRA A65A+6	OK
06157	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06160	0074	00	4	07047		TSX OK,4	CONTINUE TEST
06161	0020	00	0	06141		TRA A65X	
06162	626351406060					BCD 1STR-	TEST-STORE LOC AND TRAP
06163	0500	00	0	06676	65A	CLA ONES	L ALL ONES
06164	0601	00	0	00000		STO 0	
06165	0500	00	0	06761		CLA K37B	L TRA 65A1
06166	0601	00	0	00001		STO 1	
06167	0500	00	0	06762		CLA K37C	L TRA 65A2
06170	0601	00	0	00002		STO 2	
06171	0500	00	0	06763		CLA K37D	L TRA 65A3
06172	0601	00	0	00003		STO 3	
06173	0500	00	0	06764		CLA K37E	L TRA 65A4
06174	0601	00	0	00012		STO 10	
06175	0500	00	0	06766		CLA K37E1	L TRA 65A4A
06176	0601	00	0	00013		STO 11	
06177	0500	00	0	06767		CLA K37E2	L TRA 65A4B
06200	0601	00	0	00014		STO 12	
06201	0500	00	0	06770		CLA K37E3	L TRA 65A4C
06202	0601	00	0	00015		STO 13	
06203	0534	00	7	06746		LXA 1CF,7	L 777 IN XRA,XRB,XRC
06204	-1	77777	7	77777		STR	32767,7,32767
06205	-3	77777	7	06230		TXL	65A4D,7,32767
							LOC OF THIS INSTRUCTION TO ADDRESS OF LOC 00000
CHECK STR INSTR EXECUTED CORRECTLY							
06206	0074	00	4	07041	65A1	TSX ERROR-1,4	ERROR-TRA FROM LOC 00001
06207	0020	00	0	06163		TRA 65A	

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06210 0020 00 0 06232 65A2 TRA 65A5

06211 0074 00 4 07041 65A3 TSX ERROR-1,4 ERROR-TRA FROM LOC 00002
06212 0020 00 0 06163 TRA 65A

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06213 0020 00 0 06232 TRA 65A5

06214 0074 00 4 07041 65A4 TSX ERROR-1,4 ERROR-TRA FROM LOC 00010
06215 0020 00 0 06163 TRA 65A

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06216 0020 00 0 06232 TRA 65A5

06217 0074 00 4 07041 65A4A TSX ERROR-1,4 ERROR-TRA FROM LOC 00011
06220 0020 00 0 06163 TRA 65A

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06221 0020 00 0 06232 TRA 65A5

06222 0074 00 4 07041 65A4B TSX ERROR-1,4 ERROR-TRA FROM LOC 00012
06223 0020 00 0 06163 TRA 65A

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06224 0020 00 0 06232 TRA 65A5

06225 0074 00 4 07041 65A4C TSX ERROR-1,4 ERROR-TRA FROM LOC 00013
06226 0020 00 0 06163 TRA 65A

IF ERROR,GO TO NEXT INSTR TO CONTINUE

06227 0020 00 0 06232 TRA 65A5

06230 0074 00 4 07041 65A4D TSX ERROR-1,4 ERROR-STR DID NOT TRAP BUT
06231 0020 00 0 06163 TRA 65A EXECUTED TXL INSTRUCTION

CHECK CONTENTS OF LOCATION 00000

06232 0500 00 0 00000 65A5 CLA 0 L LOCATION 00000
06233 0560 00 0 06765 LDQ K37G L TXL 65A+18,7,32767
06234 0340 00 0 06765 CAS K37G
06235 0020 00 0 06237 TRA 65A5+5 ERROR
06236 0020 00 0 06241 TRA 65A6 OK
06237 0074 00 4 07041 TSX ERROR-1,4 ERROR-WRONG QTY LOC 00000
06240 0020 00 0 06163 TRA 65A REPEAT SECTION

CHECK STR INSTRUCTION UNCHANGED

06241 0500 00 0 06204 65A6 CLA 65A+17 L STR INSTRUCTION
06242 0760 00 0 00002 CHS ACC NOW +17777777777

06243	0560	00	0	06706	LDQ	K8	L +177777777777
06244	0340	00	0	06706	CAS	K8	
06245	0020	00	0	06247	TRA	65A6+6	ERROR
06246	0020	00	0	06251	TRA	65A7	OK
06247	0074	00	4	07041	TSX	ERROR-1,4	ERROR-STR INSTR CHANGED
06250	0020	00	0	06163	TRA	65A	REPEAT SECTION

CHECK STR+1 INSTRUCTION UNCHANGED

06251	0500	00	0	06205	65A7	CLA	65A+18	L STR + 1 INSTRUCTION
06252	0560	00	0	06771	LDQ	K37E4	L TXL 65A4D,7,32767	
06253	0340	00	0	06771	CAS	K37E4		
06254	0020	00	0	06256	TRA	65A7+5	ERROR	
06255	0020	00	0	06260	TRA	65A8		
06256	0074	00	4	07041	TSX	ERROR-1,4	ERROR-STR+1 INSTR CHANGED	
06257	0020	00	0	06163	TRA	65A		

TEST INDEX REGISTERS UNCHANGED BY STR

06260	0754	00	1	00000	65A8	PXA	0,1	XRA TO ACC
06261	0560	00	0	06746	LDQ	1CF	L 7777	IN MQ
06262	0340	00	0	06746	CAS	1CF		
06263	0020	00	0	06265	TRA	*+2		ERROR
06264	0020	00	0	06267	TRA	*+3		OK-XRA UNCHANGED
06265	0074	00	4	07041	TSX	ERROR-1,4		ERROR-XRA CHANGED
06266	0020	00	0	06163	TRA	65A		

06267	0754	00	2	00000	PXA	0,2		XRB TO ACC
06270	0560	00	0	06746	LDQ	1CF	L 7777	IN MQ
06271	0340	00	0	06746	CAS	1CF		
06272	0020	00	0	06274	TRA	*+2		ERROR
06273	0020	00	0	06276	TRA	*+3		OK-XRB UNCHANGED
06274	0074	00	4	07041	TSX	ERROR-1,4		ERROR-XRB CHANGED
06275	0020	00	0	06163	TRA	65A		

*ANY ERROR IN THE STR TEST PRIOR TO THE FOLLOWING ROUTINE OF
*CHECKING XRC,WILL ALTER THE CONTENTS OF XRC.ANY ERROR INDICATIONS FOR
*THE FOLLOWING ROUTINE SHOULD BE EXAMINED FOR THIS.

06276	0754	00	4	00000	PXA	0,4		XRC TO ACC
06277	0560	00	0	06746	LDQ	1CF	L 7777	IN MQ
06300	0340	00	0	06746	CAS	1CF		
06301	0020	00	0	06303	TRA	*+2		ERROR
06302	0020	00	0	06304	TRA	*+2		OK-XRC UNCHANGED
06303	0074	00	4	07042	TSX	ERROR,4		ERROR-XRC CHANGED
06304	0074	00	4	07047	TSX	OK,4		
06305	0020	00	0	06163	TRA	65A		

06306	0761	00	0	00000	NOP			
06307	0500	00	0	06564	CLA	END+1		RESTORE
06310	0601	00	0	00000	STO	0		RESET-START
06311	0020	00	0	06313	TRA	*+2		

06312	212424606060				BCD	1ADD		ADDER TEST
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06313	0500	00	0	06675	M06	CLA ZERO	CLEAR ACCUMULATOR
06314	0760	00	0	00006		COM	
06315	0400	00	0	06701		ADD ONE	L +1 RIPPLE CARRY
06316	0100	00	0	06321		TZE M06+6	
06317	0074	00	4	07041		TSX ERROR-1,4	ON ERROR THE RIGHT MOST
06320	0020	00	0	06313		TRA M06	ONE OR LEFT MOST ZERO IS ADDER THAT FAILED
06321	0140	00	0	06323		TOV M06+8	OVFL SHOULD BE ON
06322	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06323	0074	00	4	07047		TSX OK,4	
06324	0020	00	0	06313		TRA M06	
06325	212424606060					BCD 1ADD	ADDER TEST
06326	-0500	00	0	06676	M07	CAL ONES	ONES INTO P,1-35
06327	0361	00	0	06676		ACL ONES	ONES INTO P,1-35
06330	0602	00	0	07037		SLW TEMP	
06331	0500	00	0	07037		CLA TEMP	
06332	0402	00	0	06676		SUB ONES	ONES
06333	0100	00	0	06335		TZE M07+7	
06334	0074	00	4	07042		TSX ERROR,4	THE RIGHTMOST ONE OR THE
06335	0074	00	4	07047		TSX OK,4	LEFT MOST ZERO WILL
06336	0020	00	0	06326		TRA M07	INDICATE WHICH ADDER FAILED. SIGN POSITION CORRESPONDS TO P ADDER POSITION
06337	0761	00	0	00000		NOP	
06340	0760	00	0	00165	AAA	SWT 5	TEST SENSE SWITCH 5
06341	0020	00	0	06563		TRA END	BYPASS ALL HALT TESTS AND ADDER TESTS
06342	0500	00	0	06472		CLA PLUS+3	INSERT BYPASS HALTS
06343	0601	00	0	06342		STO AAA+2	ON THE NEXT PASS
06344	0020	00	0	06346		TRA B59	
HALT TESTS							
06345	246530606060					BCD 1DVH	DVH TEST
06346	0500	00	0	06701	B59	CLA ONE	BRING ONE IN ACC
06347	0220	00	0	06675		DVH ZERO	DIVIDE BY ZERO, SHOULD
06350	0402	00	0	06701		SUB ONE	HALT WITH DCT ON
06351	0100	00	0	06353		TZE B59+5	RESULT SHOULD BE ZERO
06352	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06353	0074	00	4	07047		TSX OK,4	
06354	0020	00	0	06346		TRA B59	
06355	246530606060					BCD 1DVH	DVH TEST WITH HALT
06356	0500	00	0	06701	B60	CLA ONE	DIVIDE ACC BY EQUAL AND
06357	0220	00	0	06701		DVH ONE	STORE, SHOULD HALT
06360	0402	00	0	06701		SUB ONE	TEST ACC SHOULD BE ONE
06361	0100	00	0	06363		TZE B60+5	OK, PROCEED

06362	0074	00	4	07042		TSX ERROR,4	
06363	0074	00	4	07047		TSX OK,4	
06364	0020	00	0	06356		TRA B60	
06365	246530606060					BCD 1DVH	DVH TEST WITH HALT
06366	0500	00	0	06751	B61	CLA PTW	PLACE BIT IN Q POSITION
06367	0767	00	0	00002		ALS 2	SO ACC GREATER THEN STO
06370	0220	00	0	06751		DVH PTW	SHOULD HALT
06371	-0100	00	0	06373		TNZ B61+5	OK, SHOULD NOT BE ZERO
06372	0074	00	4	07042		TSX ERROR,4	
06373	0074	00	4	07047		TSX OK,4	
06374	0020	00	0	06366		TRA B61	
06375	652430606060					BCD 1VDH	
06376	0760	00	0	00012	A46X	DCT	TURN OFF DIV-CHECK LIGHT
06377	0020	00	0	06400		TRA *+1	
06400	0560	00	0	06756		LDQ K36	L +377777777776
06401	0500	00	0	06677		CLA K2	L +700000
06402	0224	22	0	06677		VDH K2,0,18	L +700000
06403	0760	00	0	00012		DCT	CHECK SETTING TRG
06404	0020	00	0	06407		TRA A46A	OK-DIV-CHECK LITE WAS ON DIVISION DID NOT TAKE PLACE
06405	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06406	0020	00	0	06376		TRA A46X	
06407	-0600	00	0	07037	A46A	STQ TEMP	SAVE MQ
06410	0560	00	0	06677		LDQ K2	L +700000 MQ, ACC SHOULD BE THE SAME
06411	0340	00	0	06677		CAS K2	CHECK ACC UNCHANGED
06412	0020	00	0	06414		TRA A46A+5	ERROR
06413	0020	00	0	06416		TRA A46A1	OK-ACC UNCHANGED
06414	0074	00	4	07041		TSX ERROR-1,4	TO ERROR ROUTINE
06415	0020	00	0	06376		TRA A46X	
06416	0500	00	0	07037	A46A1	CLA TEMP	CHECK SAVED MQ
06417	0560	00	0	06756		LDQ K36	L +377777777776 MQ, ACC SHOULD BE THE SAME
06420	0340	00	0	06756		CAS K36	CHECK MQ UNCHANGED
06421	0020	00	0	06423		TRA A46A1+5	ERROR
06422	0020	00	0	06424		TRA A46A1+6	OK-MQ UNCHANGED
06423	0074	00	4	07042		TSX ERROR,4	TO ERROR ROUTINE
06424	0074	00	4	07047		TSX OK,4	CONTINUE TEST
06425	0020	00	0	06376		TRA A46X	
06426	254542606060					BCD 1ENK	TEST-ENTER KEYS
06427	0000	00	0	06430	KY	HTR *+1	STOP-PUT ONES IN KEYS
06430	0760	00	0	00004		ENK	ONES IN MQ FROM KEYS
06431	0760	00	0	00000		CLM	CLEAR ACC
06432	0763	00	0	00043		LLS 35	MOVE MQ TO ACC
06433	0560	00	0	06676		LDQ ONES	L ALL ONES TO MQ
06434	0340	00	0	06676		CAS ONES	
06435	0020	00	0	06437		TRA *+2	ERROR
06436	0020	00	0	06441		TRA *+3	OK

06437	0074	00	4	07041		TSX ERROR-1,4	ERROR
06440	0020	00	0	06427		TRA KY	REPEAT SECTION
06441	0000	00	0	06442		HTR KY1	STOP-PUT ZEROS IN KEYS
06442	0760	00	0	00004	KY1	ENK	ZEROS IN MQ FROM KEYS
06443	0760	00	0	00000		CLM	CLEAR ACC
06444	0763	00	0	00043		LLS 35	MOVE MQ TO ACC
06445	0100	00	0	06447		TZE *+2	OK
06446	0074	00	4	07042		TSX ERROR,4	ERROR
06447	0074	00	4	07047		TSX OK,4	
06450	0020	00	0	06427		TRA KY	
ADDER TEST							
06451	212424606060					BCD 1ADD	
06452	0534	00	2	06746	ADD	LXA 1CF,2	L 7777
06453	0500	00	2	07777		CLA 4095,2	BRING IN LOC STORAGE
06454	0760	00	0	00006		COM	
06455	0400	00	2	07777		ADD 4095,2	MAKE ALL ONES
06456	0140	00	0	06457		TOV ADD+5	TURN OFF OVFL
06457	0120	00	0	06467		TPL PLUS	
06460	-0120	00	0	06463		TMI MINUS	
06461	0074	00	4	07041		TSX ERROR-1,4	SIGN ERROR
06462	0020	00	0	06452		TRA ADD	
06463	0402	00	0	06701	MINUS	SUB ONE	FORCE RIPPLE
06464	0100	00	0	06473		TZE OVFL	
06465	0074	00	4	07041		TSX ERROR-1,4	
06466	0020	00	0	06452		TRA ADD	
06467	0400	00	0	06701	PLUS	ADD ONE	FORCE RIPPLE
06470	0100	00	0	06473		TZE OVFL	
06471	0074	00	4	07041		TSX ERROR-1,4	FAILURE IN TZE INSTRUCTION
06472	0020	00	0	06452		TRA ADD	
06473	-0140	00	0	06502	OVFL	TNO SS	TEST OVFL SHOULD BE ON
06474	0140	00	0	06505		TOV SS1	SHOULD BE OFF NOW
06475	0500	00	2	07777		CLA 4095,2	BRING IN LOC
06476	0340	00	2	07777		CAS 4095,2	COMPARE TO STORAGE
06477	0020	00	0	06510		TRA TT	MEMORY LESS
06500	0020	00	0	06516		TRA LOOP	OK
06501	0020	00	0	06513		TRA TT1	MEMORY HIGH
06502	0074	00	4	07041	SS	TSX ERROR-1,4	OVFL SHOULD BE ON
06503	0020	00	0	06452		TRA ADD	
06504	0020	00	0	06475		TRA OVFL+2	
06505	0074	00	4	07041	SS1	TSX ERROR-1,4	TNO DID NOT TURN OFF OVFL
06506	0020	00	0	06452		TRA ADD	
06507	0020	00	0	06475		TRA OVFL+2	
06510	0074	00	4	07041	TT	TSX ERROR-1,4	MEMORY LESS
06511	0020	00	0	06452		TRA ADD	
06512	0020	00	0	06475		TRA OVFL+2	
06513	0074	00	4	07041	TT1	TSX ERROR-1,4	MEMORY HIGH

06514	0020	00	0	06452		TRA	ADD		
06515	0020	00	0	06475		TRA	OVFL+2		
06516	2	00001	2	06453	LOOP	TIX	ADD+1,2,1		
06517	0020	00	0	06521		TRA	MPY		
									MPY TEST
06520	444770606060					BCD	1MPY		
06521	0534	00	2	06746	MPY	LXA	1CF,2	L	7777
06522	0534	00	1	06524		LXA	MPY+3,1	L	35
06523	0560	00	0	06701		LDQ	ONE		
06524	-0773	00	1	00043		RQL	35,1		
06525	-0600	00	0	07037		STQ	TEMP	SAVE	BIT
06526	0200	00	2	07777		MPY	4095,2	MPY	BY LOC
06527	0765	00	1	00043		LRS	35,1		
06530	0100	00	0	06533		TZE	MPY+10		
06531	0074	00	4	07041		TSX	ERROR-1,4	HIGH	ORDER PRODUCT ERROR
06532	0020	00	0	06521		TRA	MPY		
06533	-0600	00	0	07040		STQ	TEMP+1		
06534	0500	00	0	07040		CLA	TEMP+1		
06535	0402	00	2	07777		SUB	4095,2	SUB	LOC
06536	0100	00	0	06541		TZE	MPY+16		
06537	0074	00	4	07041		TSX	ERROR-1,4	LOW	ORDER PRODUCT ERROR
06540	0020	00	0	06521		TRA	MPY		
06541	2	00001	1	06523		TIX	MPY+2,1,1		
06542	2	00001	2	06522		TIX	MPY+1,2,1		
06543	0020	00	0	06545		TRA	DVP		
									MPY AND DVP ALL ONES
06544	246547606060					BCD	1DVP		
06545	0534	00	1	06746	DVP	LXA	1CF,1	L	7777
06546	0560	00	1	07777		LDQ	4095,1	LDQ	WITH LOC
06547	0200	00	0	06701		MPY	ONE		
06550	0221	00	0	06701		DVP	ONE		
06551	0100	00	0	06554		TZE	DVP+7		
06552	0074	00	4	07041		TSX	ERROR-1,4	HIGH	ORDER ERROR
06553	0020	00	0	06545		TRA	DVP		
06554	-0600	00	0	07037		STQ	TEMP		
06555	0500	00	1	07777		CLA	4095,1	BRING	IN LOC TO ACC
06556	0402	00	0	07037		SUB	TEMP		
06557	0100	00	0	06562		TZE	DVP+13		
06560	0074	00	4	07041		TSX	ERROR-1,4	LOW	ORDER ERROR
06561	0020	00	0	06545		TRA	DVP		
06562	2	00001	1	06546		TIX	DVP+1,1,1	LOOP	
06563	0074	00	4	06565	END	TSX	PR100,4		
06564	0020	00	0	00034		TRA	START-2	START	ADDRESS

THIS ROUTINE IS USED TO PRINT

UPON COMPLETION OF 100 PROGRAM
PASSES.IT ALSO SERVES AS A SENSE
SWITCH 6 TEST

06565	0760	00	0	00166	PR100	SWT 6	TEST SENSE SWITCH 6
06566	0020	00	0	06624		TRA CRSL	
06567	0760	00	0	00163		SWT 3	TEST SENSE SWITCH 3
06570	0020	00	0	06572		TRA BAR	BEGIN CT FOR 100 PASSES
06571	0020	00	4	00001		TRA 1,4	RETURN TO START ADDRESS
06572	0500	00	0	06616	BAR	CLA TOP	COUNT OF 100 DECIMAL
06573	0402	00	0	06622		SUB HAT	L +1
06574	0601	00	0	06616		STO TOP	STORE IN COUNT
06575	-0100	00	4	00001		TNZ 1,4	REPEAT TEST TILL ZERO
06576	0500	00	0	06617		CLA TOP+1	RESET
06577	0601	00	0	06616		STO TOP	COUNTER
06600	0534	00	1	06623		LXA ATTA,1	L 13 IN XRA
06601	0766	00	0	01361		WPRA	
06602	0760	00	0	01363		SPRA 3	SPACE PRINTER
06603	0540	00	0	07032		RCHA CW+2	
06604	0544	00	0	07036		LCHA CW+6	
06605	0544	00	0	07033	BOY	LCHA CW+3	
06606	0544	00	0	07036		LCHA CW+6	
06607	0500	00	0	07033		CLA CW+3	
06610	0402	00	0	06621		SUB CLUB	L +2
06611	0621	00	0	07033		STA CW+3	
06612	2 00001	1	06605			TIX BOY,1,1	
06613	0500	00	0	07034		CLA CW+4	RESTORE CONTROL WORD
06614	0601	00	0	07033		STO CW+3	
06615	0020	00	4	00001		TRA 1,4	EXIT TO START ADDRESS
06616	+0000000000144				TOP	OCT 144	
06617	+0000000000144					OCT 144	
06620	+0000000000000					OCT 0	
06621	+0000000000002				CLUB	OCT 2	
06622	+0000000000001				HAT	OCT 1	
06623	+0000000000013				ATTA	OCT 13	
06624	0762	00	0	01321	CRSL	RCDA	LOAD
06625	0540	00	0	07035		RCHA CW+5	THE
06626	0544	00	0	00000		LCHA 0	NEXT
06627	0020	00	0	00001		TRA 1	PROGRAM
06630	0534	00	1	06623	ID	LXA ATTA,1	L 13 IN XRA
06631	0766	00	0	01361		WPRA	SELECT PRINTER
06632	0760	00	0	01363		SPRA 3	SPACE PRINTER
06633	0540	00	0	07030		RCHA CW	
06634	0544	00	0	07036		LCHA CW+6	
06635	0544	00	0	07031		LCHA CW+1	
06636	0544	00	0	07036		LCHA CW+6	
06637	0500	00	0	07031		CLA CW+1	
06640	0402	00	0	06621		SUB CLUB	
06641	0621	00	0	07031		STA CW+1	
06642	2 00001	1	06635			TIX *-5,1,1	

06643 0020 00 0 00032

TRA START-4

PRINT IMAGE

06644	+001120402200	PI	OCT 1120402200	9 L
06645	+000440000010		OCT 440000010	9 R
06646	+000000000000		OCT 0	8 L
06647	+000000000000		OCT 0	8 R
06650	+004004100000		OCT 4004100000	7 L
06651	+001102001000		OCT 1102001000	7 R
06652	+060600020000		OCT 60600020000	6 L
06653	+000200004000		OCT 200004000	6 R
06654	+102010040000		OCT 102010040000	5 L
06655	+000000100240		OCT 100240	5 R
06656	+000041000100		OCT 41000100	4 L
06657	+000010002004		OCT 10002004	4 R
06660	+000000005000		OCT 5000	3 L
06661	+000000010500		OCT 10500	3 R
06662	+000000010000		OCT 10000	2 L
06663	+000000640000		OCT 640000	2 R
06664	+000000200020		OCT 200020	1 L
06665	+020021000001		OCT 20021000001	1 R
06666	+020000014040		OCT 20000014040	0 L
06667	+014000640102		OCT 14000640102	0 R
06670	+145350060100		OCT 145350060100	11L
06671	+001652007404		OCT 1652007404	11R
06672	+002425703000		OCT 2425703000	12L
06673	+000121110240		OCT 121110240	12R

CONSTANTS

06674	+377777777777	PONES	OCT 377777777777	
06675	+000000000000	ZERO	OCT 0	
06676	-377777777777	ONES	OCT 777777777777	
06677	+000000700000	K2	OCT +000000700000	
06700	-377777077777	K3	OCT -377777077777	
06701	+000000000001	ONE	OCT 1	
06702	-0 00000 0 00000	MZE	MZE	
06703	-377777777770	K6	OCT -377777777770	
06704	-370000000000	SW1	OCT -370000000000	
06705	+100000000000	PTHR	OCT 100000000000	
06706	+177777777777	K8	OCT +177777777777	
06707	-300000000000	K10	OCT -300000000000	
06710	+000000677771	K11	OCT +000000677771	
06711	+000003777777	K12	OCT +000003777777	
06712	+037777777776	K13	OCT 377777777776	
06713	-000000340000	K14	OCT -000000340000	
06714	+374000003400	K15	OCT 374000003400	
06715	-370000007000		OCT -370000007000	
06716	+020304050601		OCT 020304050601	
06717	+010203040506	K16	OCT +010203040506	
06720	2 10000 0 06717	TIX	K16,0,4096	
06721	2 20000 0 06717	TIX	K16,0,8192	
06722	2 30000 0 06717	TIX	K16,0,12288	
06723	2 40000 0 06717	TIX	K16,0,16384	
06724	2 50000 0 06717	TIX	K16,0,20480	

06725	2	60000	0	06717	TIX	K16,0,24576	
06726	-2	50000	0	51332	TNX	6*K16,0,20480	
06727	-1	00000	3	55165	STR	K37+65A1+16384,3	
06730	2	10000	0	06730	TIX	K16+9,0,4096	
06731	+020304050621			K16A	OCT	20304050621	
06732	+212223242526			K16B	OCT	212223242526	
06733	-0760	00	0	06757	K17	MSE	K37,0,3072
06734	-374777770304				OCT	-374777770304	
06735	+265577177776			K20	OCT	+265577177776	
06736	+352000004262			K21	OCT	352000004262	
06737	-370000162714			K22	OCT	770000162714	
06740	-3	77777	7	06144	K23	TXL	A65X+3,7,32767
06741	-3	24000	0	24555		TXL	3*K16,0,10240
06742	+111111111111			K24	OCT	111111111111	
06743	+154321654321			K25	OCT	154321654321	
06744	+000000000002			TWO	OCT	2	
06745	+000000000003			THREE	OCT	3	
06746	+000000007777			1CF	OCT	7777	
06747	+000000077777			8CF	OCT	77777	
06750	-2	00000	0	00000	MTW	MTW	
06751	2	00000	0	00000	PTW	PTW	
06752	-374777177776			K32	OCT	774777177776	
06753	-1	00000	0	00000	MON	MON	
06754	-000000000001			MONE	OCT	-000000000001	
06755	-000000000002			M2	OCT	-000000000002	
06756	+377777777776			K36	OCT	377777777776	
06757	+374000000000			K37	OCT	374000000000	
06760	+000044000043			K37A	OCT	44000043	
06761	0020	00	0	06206	K37B	TRA	65A1
06762	0020	00	0	06210	K37C	TRA	65A2
06763	0020	00	0	06211	K37D	TRA	65A3
06764	0020	00	0	06214	K37E	TRA	65A4
06765	-3	77777	7	06205	K37G	TXL	65A+18,7,32767
06766	0020	00	0	06217	K37E1	TRA	65A4A
06767	0020	00	0	06222	K37E2	TRA	65A4B
06770	0020	00	0	06225	K37E3	TRA	65A4C
06771	-3	77777	7	06230	K37E4	TXL	65A4D,7,32767
06772	-000000000003			M3	OCT	-000000000003	
06773	-252525252525			KK30	OCT	-252525252525	
06774	-125252252525			KK31	OCT	-125252252525	
06775	+000000252525			KK32	OCT	+000000252525	
06776	-252525525252			KK33	OCT	-252525525252	
06777	+252525000000			KK34	OCT	252525000000	
07000	+125252252525			KK35	OCT	+125252252525	
07001	+252525252525			KK36	OCT	+252525252525	
07002	+252525777777			KK37	OCT	252525777777	
07003	+377777252525			KK38	OCT	+377777252525	
07004	0020	00	0	02165	RTN	TRA	B20+7
07005	0020	00	0	02163		TRA	B20+5
07006	0021	00	0	03537	KK80	TTR	B83+9
07007	0000	00	0	03547	KK81	HTR	B84
07010	0000	00	0	03533	KK82	HTR	B83+5
07011	0021	00	0	03577	KK83	TTR	B84A
07012	0021	00	0	03623	KK84	TTR	B85+6
07013	0021	00	0	03517	KK85	TTR	B82
07014	0000	00	0	03637	KK85A	HTR	B85A-10

SEE SECTION
B83 FOR USE
OF THESE ,KK 80,81,82

07015	0000	00	0	03664	KK85B	HTR	B86+4
07016	0000	00	0	03701	KK85C	HTR	B87+4
07017	0000	00	0	03713	KK85D	HTR	B88+3
07020	0000	00	0	03576	KK86	HTR	B84A-1
07021	0020	00	0	04101	KK87	TRA	B98A+1
07022	0020	00	0	04106	KK88	TRA	B98B
07023	+0077000000000				SW2	OCT	+0077000000000
07024	+0000770000000				SW3	OCT	+0000770000000
07025	+0000007700000				SW4	OCT	+0000007700000
07026	+0000000077000				SW5	OCT	+0000000077000
07027	+0000000000077				SW6	OCT	+0000000000077

CONTROL WORDS

07030	-1	00001	0	06644	CW	IOCT	PI,0,1
07031	-1	00001	0	06646		IOCT	PI+2,0,1
07032	-1	00001	0	06645		IOCT	PI+1,0,1
07033	-1	00001	0	06647		IOCT	PI+3,0,1
07034	-1	00001	0	06647		IOCT	PI+3,0,1
07035	-1	00003	0	00000		IOCT	0,0,3
07036	-1	00001	0	06620		IOCT	TOP+2,0,1

TEMPORARY STORAGE

07037	+0000000000000				TEMP	OCT	0
07040	+0000000000000					OCT	0

* SENSE SWITCHES INTERROGATION AND DIAGNOSTIC
* PRINT SUBROUTINE FOR 709

07041	0020	00	0	07071		TRA	MOD
07042	0600	00	0	07104	ERROR	STZ	KONST DO NOT REPEAT SECTION
07043	0600	00	0	07105		STZ	KONST+1 IF SENSE SW 4 IS DOWN

07044	0760	00	0	00162		PSE	114 IF SENSE SW 2 IS UP THEN-
07045	0020	00	0	07053		TRA	SSW3 CHECK SSW 3
07046	2	00001	4	07047		TIX	OK,4,1

07047	-0634	00	4	07701	OK	SXD	LOC+1,4 2'S COMPL OF PROGRAM LOCATION LAST PREFORMED
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07050	0760	00	0	00161		PSE	113 IF SENSE SW 1 IS UP THEN
07051	0020	00	0	07056		TRA	RELY CHECK SS 4
07052	0020	00	4	00001		TRA	1,4 IF DOWN REPEAR SECTION OF PROG

07053	0760	00	0	00163	SSW3	PSE	115 IF SENSE SW 3 IS UP
07054	0020	00	0	07113		TRA	PRINT PRINT ON ERROR
07055	0000	00	0	07046		HTR	OK-1 IF SS 3 IS DOWN STOP ON ERROR HTR 2'S COMPLEMENT OF

INDEX REGISTER C
CONTIANS THE ERROR ADDRESS
OF THE SECTION OF THE
PROG IN ERROR

07056	0760	00	0	00164	RELY	PSE 116	IF SENSE SWITCH 5 IS UP
07057	0020	00	4	00003		TRA 3,4	GO TO NEXT SECTION OF THE PROG IF DOWN REPEAR SECTION OF THE PROGRAM N TIMES OR THE NUMEBR OF TIMES THAT IS SPECIFIED IN LOC KONST+2
07060	0500	00	0	07105		CLA KONST+1	COUNTER
07061	0402	00	0	07104		SUB KONST	L+1 REDUCE COUNT BY 1
07062	0601	00	0	07105		STO KONST+1	
07063	-0100	00	0	07052		TNZ OK+3	
07064	0500	00	0	07106		CLA KONST+2	L+50 COUNT CONSTANT
07065	0601	00	0	07105		STO KONST+1	
07066	0500	00	0	07676		CLA STOR+7	L+1
07067	0601	00	0	07104		STO KONST	
07070	0020	00	4	00003		TRA 3,4	
07071	0600	00	0	07110	MOD	STZ KONST+4	SET STORAGE TO ZEROS
07072	0600	00	0	07105		STZ KONST+1	
07073	0600	00	0	07104		STZ KONST	
07074	0760	00	0	00162	ERR	PSE 114	IF SS 2 IS UP CHECK
07075	0020	00	0	07101		TRA SSW3A	SENSE SWITHC 3
07076	0760	00	0	00161	OK2	PSE 113	SSW1 UP-GO TO NEXT ROUTINE
07077	0020	00	4	00002		TRA 2,4	EXIT
07100	0020	00	4	00001		TRA 1,4	REPEAT TEST
07101	0760	00	0	00163	SSW3A	PSE 115	IS SENSE SWITCH 3 IS UP
07102	0020	00	0	07113		TRA PRINT	PRINT ERROR 2'S COMPLEMENT OF XRC
07103	0000	00	0	07076		HTR OK2	CONTIANS THE ERROR ADDR OF SECTION OF PROG LAST EXECUTED
07104	+0000000000001				KONST	OCT 1	
07105	+0000000000050					OCT 50	
07106	+0000000000050					OCT 50	COUNT CONSTANT
07107	+0000000000001					OCT 1	
07110	+0000000000001					OCT 1	
07111	0020	00	0	07046		TRA OK-1	EXIT FROM PRINT PROG
07112	0020	00	0	07076		TRA OK2	EXIT FROM PRINT WHEN ENTRY IS TO ERROR-1

PRINT ROUTINE

07113	0601	00	0	07667	PRINT	STO	STOR	ACC	CONTENTS
07114	0771	00	0	00043		ARS	35		
07115	0602	00	0	07672		SLW	STOR+3	OV	FL BITS
07116	0754	00	2	00002		PXA	2,2		
07117	0621	00	0	07671		STA	STOR+2	XRB	
07120	-0634	00	1	07671		SXD	STOR+2,1	PLACE	XRA INTO DECR
07121	-0634	00	4	07672		SXD	STOR+3,4	PLACE	XRC INTO DECR
07122	-0600	00	0	07670		STQ	STOR+1	MQ	CONTENTS
07123	0500	00	0	07674	CHK1	CLA	STOR+5	L	100000
07124	0760	00	0	00012		DCT		DIV	CK TEST
07125	-0602	00	0	07672		ORS	STOR+3	YES	
07126	0771	00	0	00003		ARS	3		
07127	-0140	00	0	07131		TNO	CHK4-1	ACC	OV FL-YES
07130	-0602	00	0	07672		ORS	STOR+3	NO	
07131	0760	00	0	00000		CLM		SENSE	SWITCHES
07132	0534	00	1	07677	CHK4	LXA	STOR+8,1	L	+4
07133	0767	00	0	00003		ALS	3		
07134	-0760	00	1	00145		MSE	101,1		
07135	0020	00	0	07140		TRA	*+3		
07136	0400	00	0	07676		ADD	STOR+7	L	+1
07137	0760	00	1	00145		PSE	101,1	RESET	LITES
07140	2	00001	1	07133		TIX	CHK4+1,1,1		
07141	0534	00	1	07675	CHK3	LXA	STOR+6,1	L	+6
07142	0767	00	0	00003		ALS	3		
07143	0760	00	1	00167		PSE	119,1		
07144	0020	00	0	07146		TRA	CHK3+5		
07145	0400	00	0	07676		ADD	STOR+7	L	+1
07146	2	00001	1	07142		TIX	CHK3+1,1,1		
07147	0602	00	0	07673		SLW	STOR+4	RETAIN	PSE + MSE
								INDICATIONS	
								WAS	ENTRY FROM SUB-
07150	0500	00	0	07110	CHK3A	CLA	KONST+4	ROUTINE	AT ERROR-1
07151	0100	00	0	07157		TZE	CHK3A+7	YES	
07152	0500	00	0	07116		CLA	PRINT+3	NO	
07153	0621	00	0	07165		STA	CHK5+1	RESET	ADDR
07154	0500	00	0	07111		CLA	KONST+5		
07155	0601	00	0	07524		STO	EXIT		
07156	0020	00	0	07164		TRA	CHK5		
07157	0500	00	0	07676		CLA	STOR+7	L+1	
07160	0601	00	0	07110		STO	KONST+4		
07161	0621	00	0	07165		STA	CHK5+1		
07162	0500	00	0	07112		CLA	KONST+6		
07163	0601	00	0	07524		STO	EXIT		

OBTAIN TEST LOC
AND ERROR ADDR

07164	-0534	00	4	07672	CHK5	LXD	STOR+3,4	XRC	
07165	-0754	00	4	00002		PXD	2,4		
07166	0760	00	0	00006		COM			
07167	0400	00	0	07727		ADD	BIT2+2	+1 TO DECREMENT	
07170	0622	00	0	07700		STD	LOC	ERROR ADDR INTO DECR	
07171	0771	00	0	00022		ARS	18		
07172	0402	00	0	07165		SUB	CHK5+1	L +2	
07173	0621	00	0	07174		STA	CHK6		
07174	-0500	00	0	00000	CHK6	CAL	0	PLACE	
07175	0621	00	0	07700		STA	LOC	TEST LOC INTO ADDR	
								OBTAIN OPN OF INST	
07176	0402	00	0	07676		SUB	STOR+7	L +1	
07177	0621	00	0	07200		STA	*+1		
07200	0560	00	0	00000		LDQ	0	BCD OPERATION	
07201	0534	00	1	07675	CHK7	LXA	STOR+6,1	L +6	
07202	0760	00	0	00000		CLM			
07203	-0763	00	0	00002		LGL	2		
07204	0734	00	4	00000		PAX	0,4	ZONE BIT	
07205	-0763	00	0	00004		LGL	4		
07206	0340	00	0	07712		CAS	BIT+2	CHECK FOR BLANK L +60	
07207	0020	00	0	07211		TRA	*+2		
07210	0020	00	0	07224		TRA	CHK7A	YES	
07211	0340	00	0	07721		CAS	BIT+9	CHECK FOR HYPHEN	
07212	0020	00	0	07214		TRA	*+2		
07213	0020	00	0	07541		TRA	TRAP	YES- INDICATES A TRAP ROUTINE	
07214	-0320	00	0	07723		ANA	BIT+11	MASK FOR NUMERIC	
07215	0734	00	2	00000		PAX	0,2		
07216	3	00012	2	07224		TXH	CHK7A,2,10	IGNORE SPECIAL CHARS	
07217	0500	00	0	07711		CLA	BIT+1	COL INDICATOR	
07220	0771	00	1	00006		ARS	6,1		
07221	-0602	00	2	07554		ORS	REC1L+9,2		
07222	-3	00000	4	07224		TXL	*+2,4		
07223	-0602	00	4	07557		ORS	REC1L+12,4		
07224	2	00001	1	07202	CHK7A	TIX	CHK7+1,1,1		
07225	0560	00	0	00000	CHK8	LDQ	0		
07226	0534	00	1	07713		LXA	BIT+3,1	L +14	
07227	0074	00	2	07531		TSX	CH22,2		
07230	-0500	00	0	07722		CAL	BIT+10	COL IND	
07231	0771	00	1	00014		ARS	12,1		
07232	-0602	00	4	07570		ORS	REC1R+9,4		
07233	2	00001	1	07227		TIX	*-4,1,1		
07234	-0500	00	0	07700	CH1	CAL	LOC	PUT TEST LOC INTO IMAGE	
07235	0765	00	0	00017		LRS	15		
07236	0534	00	1	07705		LXA	LOC+5,1	L +5	
07237	0074	00	2	07525		TSX	CH21,2		
07240	-0500	00	0	07710		CAL	BIT	BIT COLUMN 10	
07241	0771	00	1	00005		ARS	5,1		
07242	-0602	00	4	07554		ORS	REC1L+9,4		
07243	2	00001	1	07237		TIX	CH1+3,1,1		

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                                PUT ERROR ADDR INTO IMAGE
07244 -0534 00 4 07700  CH5  LXD LOC,4
07245 -0754 00 4 00000      PXD 0,4
07246  0765 00 0 00041      LRS 33
07247  0534 00 1 07705      LXA LOC+5,1  L +5
07250  0074 00 2 07525      TSX CH21,2
07251 -0500 00 0 07706      CAL LOC+6    -0
07252  0771 00 1 00006      ARS 6,1
07253 -0602 00 4 07570      ORS REC1R+9,4
07254  2 00001 1 07250      TIX CH5+4,1,1

                                PUT PSE SW INTO
                                IMAGE
07255 -0500 00 0 07673  CH7  CAL STOR+4
07256  0765 00 0 00022      LRS 18
07257  0534 00 1 07675      LXA STOR+6,1  L +6
07260  0074 00 2 07525      TSX CH21,2
07261 -0500 00 0 07721      CAL BIT+9
07262  0771 00 1 00006      ARS 6,1
07263 -0602 00 4 07570      ORS REC1R+9,4
07264  2 00001 1 07260      TIX CH7+3,1,1

07265  0534 00 4 07713  CH10 LXA BIT+3,4  PUT 1ST REC IN PR IMAGE
07266  0534 00 1 07704      LXA LOC+4,1  L +30
07267 -0500 00 4 07557      CAL REC1L+12,4 LEFT HALF IMAGE
07270  0602 00 1 07770      SLW PR+24,1
07271 -0500 00 4 07573      CAL REC1R+12,4
07272  0602 00 1 07771      SLW PR+25,1

07273  2 00001 4 07274      TIX CH10+7,4,1
07274  2 00002 1 07267      TIX CH10+2,1,2

07275  0534 00 4 07713  CH11 LXA BIT+3,4  MASK IMAGE
07276 -0500 00 0 07730      CAL MASK     MASK
07277  0320 00 4 07557      ANS REC1L+12,4
07300 -0500 00 0 07731      CAL MASK+1
07301  0320 00 4 07573      ANS REC1R+12,4
07302 -0500 00 0 07732      CAL MASK+2  MASK LEFT HALF
07303  0320 00 4 07607      ANS REC2L+12,4 2ND RECORD
07304 -0500 00 0 07733      CAL MASK+3  MASK RIGHT HALF
07305  0320 00 4 07623      ANS REC2R+12,4
07306 -0500 00 0 07734      CAL MASK+4  MASK 3RD RECORD
07307  0320 00 4 07637      ANS REC3L+12,4 LEFT HALF
07310 -0500 00 0 07735      CAL MASK+5
07311  0320 00 4 07653      ANS REC3R+12,4
07312 -0500 00 0 07736      CAL MASK+6
07313  0320 00 4 07667      ANS REC4L+12,4 PRINT REC
07314  2 00001 4 07276      TIX CH11+1,4,1

07315  0766 00 0 01361  CH14 WRS 753  PRINTER
07316  0760 00 0 01363      SPRA 3      DOUBLE SPACE
                                PRINT FIRST LINE
                                TEST LOC, ERROR ADDR

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07317	0074	00	1	07536		TSX WPRA+1,1	
07320	0500	00	0	07673	CH18	CLA STOR+4	PUT MSE LITES INTO IMAGE
07321	0765	00	0	00036		LRS 30	
07322	0534	00	1	07677		LXA STOR+8,1	L +4
07323	0074	00	2	07525		TSX CH21,2	
07324	-0500	00	0	07724		CAL BIT+12	BIT COL 6
07325	0771	00	1	00004		ARS 4,1	
07326	-0602	00	4	07604		ORS REC2L+9,4	
07327	2	00001	1	07323		TIX CH18+3,1,1	
FORM CARD IMAGE FOR 2ND REC							
07330	0500	00	0	07671	CH15	CLA STOR+2	
07331	0765	00	0	00041		LRS 33	
07332	0534	00	1	07677		LXA STOR+8,1	L +4
07333	0074	00	2	07525		TSX CH21,2	
07334	-0500	00	0	07715		CAL BIT+5	BIT COLUMN
07335	0771	00	1	00004		ARS 4,1	
07336	-0602	00	4	07604		ORS REC2L+9,4	
07337	2	00001	1	07333		TIX CH15+3,1,1	
07340	0074	00	2	07525		TSX CH21,2	
07341	-0500	00	0	07706		CAL LOC+6	L-0
07342	-0602	00	4	07620		ORS REC2R+9,4	
07343	0074	00	2	07525	CH16	TSX CH21,2	
07344	0534	00	1	07705		LXA LOC+5,1	L +5
07345	0074	00	2	07525		TSX CH21,2	
07346	-0500	00	0	07725		CAL BIT2	BIT COL 8
07347	0771	00	1	00005		ARS 5,1	
07350	-0602	00	4	07620		ORS REC2R+9,4	BIT IN IMAGE
07351	2	00001	1	07345		TIX CH16+2,1,1	
07352	0500	00	0	07672	CH17	CLA STOR+3	PUT XRC INTO IMAGE
07353	0765	00	0	00041		LRS 33	
07354	0534	00	1	07705		LXA LOC+5,1	L +5
07355	0074	00	2	07525		TSX CH21,2	
07356	-0500	00	0	07726		CAL BIT2+1	BIT IN COL 19
07357	0771	00	1	00005		ARS 5,1	
07360	-0602	00	4	07620		ORS REC2R+9,4	BIT IN IMAGE
07361	2	00001	1	07355		TIX CH17+3,1,1	
07362	0560	00	0	07670	CH27	LDQ STOR+1	CONTENTS OF MQ
07363	0534	00	1	07713		LXA BIT+3,1	L +14
07364	0074	00	2	07531		TSX CH22,2	
07365	-0500	00	0	07722		CAL BIT+10	BIT COL 15
07366	0771	00	1	00014		ARS 12,1	
07367	-0602	00	4	07604		ORS REC2L+9,4	
07370	2	00001	1	07364		TIX CH27+2,1,1	
07371	-0500	00	0	07703		CAL LOC+3	WAS ROUTINE USING TRAP
07372	0402	00	0	07721		SUB BIT+9	
07373	-0100	00	0	07377		TNZ *+4	NO
07374	-0500	00	0	07676		CAL STOR+7	L +1
07375	-0602	00	0	07617		ORS REC2R+8	

07376	0020	00	0	07401		TRA	*+3		
07377	-0500	00	0	07676		CAL	STOR+7	L +1	
07400	-0602	00	0	07620		ORS	REC2R+9		
07401	0600	00	0	07703		STZ	LOC+3		
07402	0534	00	4	07713	CH23	LXA	BIT+3,4		
07403	0534	00	1	07704		LXA	LOC+4,1	L +30	
07404	-0500	00	4	07607		CAL	REC2L+12,4	LEFT HALF	
07405	0602	00	1	07770		SLW	PR+24,1		
07406	-0500	00	4	07623		CAL	REC2R+12,4	RIGHT HALF IMAGE	
07407	0602	00	1	07771		SLW	PR+25,1		
07410	2	00001	4	07411		TIX	CH23+7,4,1		
07411	2	00002	1	07404		TIX	CH23+2,1,2		
07412	0074	00	1	07535		TSX	WPRA,1	PRINT 2ND LINE	
07413	-0500	00	0	07672	CH20	CAL	STOR+3	PUT TRGS INTO	
07414	0765	00	0	00022		LRS	18	IMAGE	
07415	0074	00	2	07525		TSX	CH21,2		
07416	-0500	00	0	07676		CAL	STOR+7	BIT IN 35	
07417	-0602	00	4	07634		ORS	REC3L+9,4	INDICATE DIV CK	
07420	0074	00	2	07525		TSX	CH21,2		
07421	-0500	00	0	07714		CAL	BIT+4	BIT COL 12	
07422	0771	00	0	00001		ARS	1		
07423	-0602	00	4	07650		ORS	REC3R+9,4	ACC OVFL	
07424	0760	00	0	00000	CH24	CLM		PUT Q + P BITS	
07425	0763	00	0	00013		LLS	11	INTO IMAGE	
07426	0734	00	4	00000		PAX	0,4		
07427	-0500	00	0	07714		CAL	BIT+4	BIT IN COL 4	
07430	0767	00	0	00002		ALS	2		
07431	-0602	00	4	07634		ORS	REC3L+9,4	Q BIT	
07432	0760	00	0	00000		CLM		GET P BIT	
07433	0763	00	0	00001		LLS	1		
07434	0734	00	4	00000		PAX	0,4		
07435	-0500	00	0	07714		CAL	BIT+4		
07436	0771	00	0	00002		ARS	2	BIT IN COL 13	
07437	-0602	00	4	07634		ORS	REC3L+9,4		
07440	0560	00	0	07667	CH25	LDQ	STOR		
07441	-0500	00	0	07716		CAL	BIT+6	PUT + SIGN OF	
07442	0162	00	0	07445		TQP	CH25+5	ACC IN IMAGE	
07443	-0602	00	0	07635		ORS	REC3L+10	MINUS SIGN OF ACC IN IMAGE	
07444	0020	00	0	07446		TRA	CH26		
07445	-0602	00	0	07636		ORS	REC3L+11	INTO IMAGE	
07446	0534	00	1	07713	CH26	LXA	BIT+3,1	L +14	
07447	0074	00	2	07531		TSX	CH22,2		
07450	-0500	00	0	07722		CAL	BIT+10	BIT COL 15	
07451	0771	00	1	00014		ARS	12,1		
07452	-0602	00	4	07634		ORS	REC3L+9,4		
07453	2	00001	1	07447		TIX	CH26+1,1,1		
07454	0534	00	4	07713	CH30	LXA	BIT+3,4	PUT 3RD REC INTO	

07455	0534	00	1	07704		LXA	LOC+4,1	PRINT IMAGE
07456	-0500	00	4	07637		CAL	REC3L+12,4	LEFT HALF
07457	0602	00	1	07770		SLW	PR+24,1	
07460	-0500	00	4	07653		CAL	REC3R+12,4	RIGHT HALF
07461	0602	00	1	07771		SLW	PR+25,1	
07462	2	00001	4	07463		TIX	CH30+7,4,1	
07463	2	00002	1	07456		TIX	CH30+2,1,2	
07464	0074	00	1	07535		TSX	WPRA,1	PRINT 3RD LINE
PUT INDICATORS IN REC								
07465	0604	00	0	07740	CH32	STI	PR	STORE INDICATORS
07466	0560	00	0	07740		LDQ	PR	INDICATOR FROM STORAGE
07467	0534	00	1	07713		LXA	BIT+3,1	L +14
07470	0074	00	2	07531		TSX	CH22,2	
07471	-0500	00	0	07716		CAL	BIT+6	
07472	0771	00	1	00015		ARS	13,1	
07473	-0602	00	4	07664		ORS	REC4L+9,4	INDICATORS INTO
07474	2	00001	1	07470		TIX	CH32+3,1,1	PRINT RECORD
PUT CONTENT OF KEYS IN								
07475	0760	00	0	00004	CH33	ENK		PRINT RECORD
07476	0534	00	1	07713		LXA	BIT+3,1	L +14
07477	0074	00	2	07531		TSX	CH22,2	
07500	-0500	00	0	07711		CAL	BIT+1	
07501	0771	00	1	00020		ARS	16,1	
07502	-0602	00	4	07664		ORS	REC4L+9,4	KEYS CONTENTS INTO
07503	2	00001	1	07477		TIX	CH33+2,1,1	PRINT REC
07504	0534	00	4	07713	CH34	LXA	BIT+3,4	L+14 PUT 4TH REC INTO PRINT IMAGE
07505	0534	00	1	07704		LXA	LOC+4,1	L +30
07506	-0500	00	4	07667		CAL	REC4L+12,4	
07507	0602	00	1	07770		SLW	PR+24,1	
07510	0600	00	1	07771		STZ	PR+25,1	
07511	2	00001	4	07512		TIX	*+1,4,1	
07512	2	00002	1	07506		TIX	CH34+2,1,2	
07513	0074	00	1	07535		TSX	WPRA,1	PRINT CONTENTS OF INDS
RESET ACC + MQ CONTENTS								
07514	0500	00	0	07672		CLA	STOR+3	OVFL BITS
07515	0560	00	0	07667		LDQ	STOR	ACC CONTENTS
07516	0763	00	0	00043		LLS	35	
07517	0560	00	0	07670		LDQ	STOR+1	
07520	0534	00	2	07671	CH35	LXA	STOR+2,2	XRB
07521	-0534	00	1	07671		LXD	STOR+2,1	XRA
07522	-0534	00	4	07672		LXD	STOR+3,4	XRC
07523	0140	00	0	07524		TOV	EXIT	
07524	0020	00	0	07046	EXIT	TRA	OK-1	
07525	0760	00	0	00000	CH21	CLM		

07526	0763	00	0	00003		LLS	3	
07527	0734	00	4	00000		PAX	0,4	
07530	0020	00	2	00001		TRA	1,2	
07531	0760	00	0	00000	CH22	CLM		
07532	-0763	00	0	00003		LGL	3	
07533	0734	00	4	00000		PAX	0,4	
07534	0020	00	2	00001		TRA	1,2	
07535	0766	00	0	01361	WPRA	WPRA		
07536	0540	00	0	07737		RCHA	CTWD	
07537	0060	00	0	07537		TCOA	*	
07540	0020	00	1	00001		TRA	1,1	EXIT
07541	0601	00	0	07703	TRAP	STO	LOC+3	
07542	0020	00	0	07224		TRA	CHK7A	
07543	+000000000320				REC1L	OCT	320,10001000,1000000	
07544	+000010001000							
07545	+000001000000							
07546	+004002000042					OCT	4002000042,200000400400	
07547	+200000400400							
07550	+000000000000					OCT	0,452010001005	
07551	-052010001005							
07552	+100000000000					OCT	100000000000,0,540010001000	
07553	+000000000000							
07554	-140010001000							
07555	+014003400366					OCT	14003400366,202000000401	
07556	+202000000401							
07557	+000000000000				REC1R	OCT	0,4000001000,0,100000200	
07560	+004000001000							
07561	+000000000000							
07562	+000100000200							
07563	+000000000000					OCT	0,0,4240001000,400,0	
07564	+000000000000							
07565	+004240001000							
07566	+000000000400							
07567	+000000000000							
07570	+005000001600					OCT	5000001600,000300000000	
07571	+000300000000							
07572	+000040000000					OCT	40000000	
07573	+200000000100				REC2L	OCT	200000000100,440001000	
07574	+000440001000							
07575	+000000000200					OCT	200,0,40000000000	
07576	+000000000000							
07577	+040000000000							
07600	+000100000000					OCT	100000000	
07601	-100400001000					OCT	-500400001000,0,40	
07602	+000000000000							
07603	+000000000040							
07604	+100400001200					OCT	100400001200	
07605	-000140000100					OCT	-400140000100	
07606	+240000000040					OCT	240000000040	
07607	+020004000404				REC2R	OCT	20004000404	
07610	+200040010000					OCT	200040010000	
07611	+040010000110					OCT	40010000110,0,0,0	

07612	+000000000000		
07613	+000000000000		
07614	+000000000000		
07615	+200042011020	OCT	200042011020
07616	+010000000000	OCT	10000000000,200
07617	+000000000200		
07620	+240050011020	OCT	240050011020
07621	+020004000504	OCT	20004000504,10002000210
07622	+010002000210		
07623	+000000000100	REC3L	OCT 100,14420001000
07624	+014420001000		
07625	+000200000000	OCT	200000000,0,40,200
07626	+000000000000		
07627	+000000000040		
07630	+000000000200		
07631	+310420001010	OCT	310420001010,4,-0
07632	+000000000004		
07633	-000000000000		
07634	+010420001040	OCT	10420001040,4200000004
07635	+004200000004		
07636	-300000000310	OCT	-700000000310
07637	+000000000000	REC3R	OCT 0,-400040000000,0
07640	-000040000000		
07641	+000000000000		
07642	+005000000000	OCT	5000000000,2000000000,0
07643	+002000000000		
07644	+000000000000		
07645	-060440000000	OCT	-460440000000,0
07646	+000000000000		
07647	1 00000 0 00000	PON	
07650	-002040000000	OCT	-402040000000
07651	+004400000000	OCT	4400000000,161000000000
07652	+161000000000		
07653	-000000000000	REC4L	OCT -0,1040000,0,0
07654	+000001040000		
07655	+000000000000		
07656	+000000000000		
07657	+200000100000	OCT	200000100000,100000000000
07660	+100000000000		
07661	+000001000000	OCT	1000000,40000220000,0
07662	+040000220000		
07663	+000000000000		
07664	+040001060000	OCT	40001060000,200000200000
07665	+200000200000		
07666	-100000100000	OCT	-500000100000
07667	+000000000000	STOR	OCT 0 ACC CONTENTS
07670	+000000000000	OCT	0 MQ CONTENTS
07671	+000000000000	OCT	0 XRA AND XRB
07672	+000000000000	OCT	0 XRC, OVRL TRGS, TAPE CK
07673	+000000000000	OCT	0 PSE + MSE VALUES
07674	+000000100000	OCT	100000
07675	+000000000006	OCT	+6
07676	+000000000001	OCT	+1
07677	+000000000004	OCT	+4

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07700 +0000000000000    LOC    OCT 0          TEST LOC + ERROR ADDR
07701 +0000000000000    OCT 0          DECREMENT CONTAINS 2,5
* COMPLEMENT OF LAST ROUTINE PREFORMED
07702 +0000000000000    OCT 0          +0
07703 +0000000000000    OCT 0          TRAP ROUTINE INDICATOR
07704 +0000000000030    OCT +30
07705 +0000000000005    OCT 5
07706 -0000000000000    OCT -0
07707 +0000000000007    OCT 7
07710 +0004000000000    BIT    OCT 400000000 BIT COL 10
07711 +0000000100000    OCT 100000    BIT COL 21
07712 +00000000000060   OCT 60
07713 +00000000000014   OCT 14
07714 +0002000000000    OCT 200000000 BIT COL 11
07715 +00000000000010   OCT 10          BIT COL 33
07716 +0200000000000    OCT 020000000000 BIT COL 5
07717 +0000002000000    OCT 2000000    BIT COL 17
07720 +0000000001000    OCT 1000        BIT COL 27
07721 +00000000000040   OCT 40          BIT COL 31
07722 +0000010000000    OCT 1000000    BIT COL 15
07723 +00000000000017   OCT 17
07724 +0100000000000    OCT 010000000000
07725 +0020000000000    BIT2   OCT 0020000000000 BIT COL 8
07726 +0000000400000    OCT 400000     BIT COL 19
07727 +0000001000000    OCT 1000000
07730 -377017601777     MASK   OCT 777017601777 TEST LOC ETC
07731 -007760001700     OCT 407760001700
07732 -360760001760     OCT -760760001760 MQ ETC
07733 +374077017776     OCT 374077017776
                                     MAKE FOR REC3
07734 -356720001776     OCT -756720001776 ACC AND TRIGGER
07735 -377670000000     OCT -777670000000
07736 -360001760000     OCT -760001760000 MASK FOR 4TH REC
07737 0000 30 0 07740   CTWD   HTR PR,0,24    CONTROL WORD FOR PRINTING
07740 +0000000000000    PR     OCT          PRINT IMAGE
                                     00000
                                     END
  
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EOF*