



8. TEST SOFTWARE DESCRIPTION

8.1 General:

There are two software routines associated with this procedure. Side one of the magnetic card is a 9810A program, which when properly executed, build a 9800 Processor Assembly language program in the higher order data registers of the Calculator. Side two of the magnetic card is a 9810A program which controls the Test Box during test execution. This Logic Board Test Control Program calls on the cassette ROM during test execution. In addition, it calls on 5 subroutines, contained in the assembly language program. See Section 3.3 for software loading description.

8.2 Assembly Language Program:

The assembly language program is built in the Calculator data registers by proper execution of side 1 of the magnetic card. A Peripheral Control ROM must be inserted, and the highest number data register must be 0 for proper execution. A listing of the program on side 1 of the magnetic card is shown in Appendix A. A listing of the Assembly Language Program is shown in Appendix B. The binary tape of the Assembly Language Program, a Peripheral Control ROM, and a special 9810A program were used to generate side 1 of the magnetic card.

The Assembly Language Program contains 5 subroutines. These subroutines give commands to the Cassette Transport, call on the Cassette ROM for certain routines, and perform certain software checks on the boards under test.

See Section 3.3 for instructions on building the Assembly Language Program, and Figure V for an Assembly Language flow chart.

MODEL 9865A		STR NO	
LINE PRETEST PROCEDURE			
BY Gil Sandberg		DATE 4/25/72	
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P.C. NO.	APPROVED	DATE	SUPERSEDES
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8.3

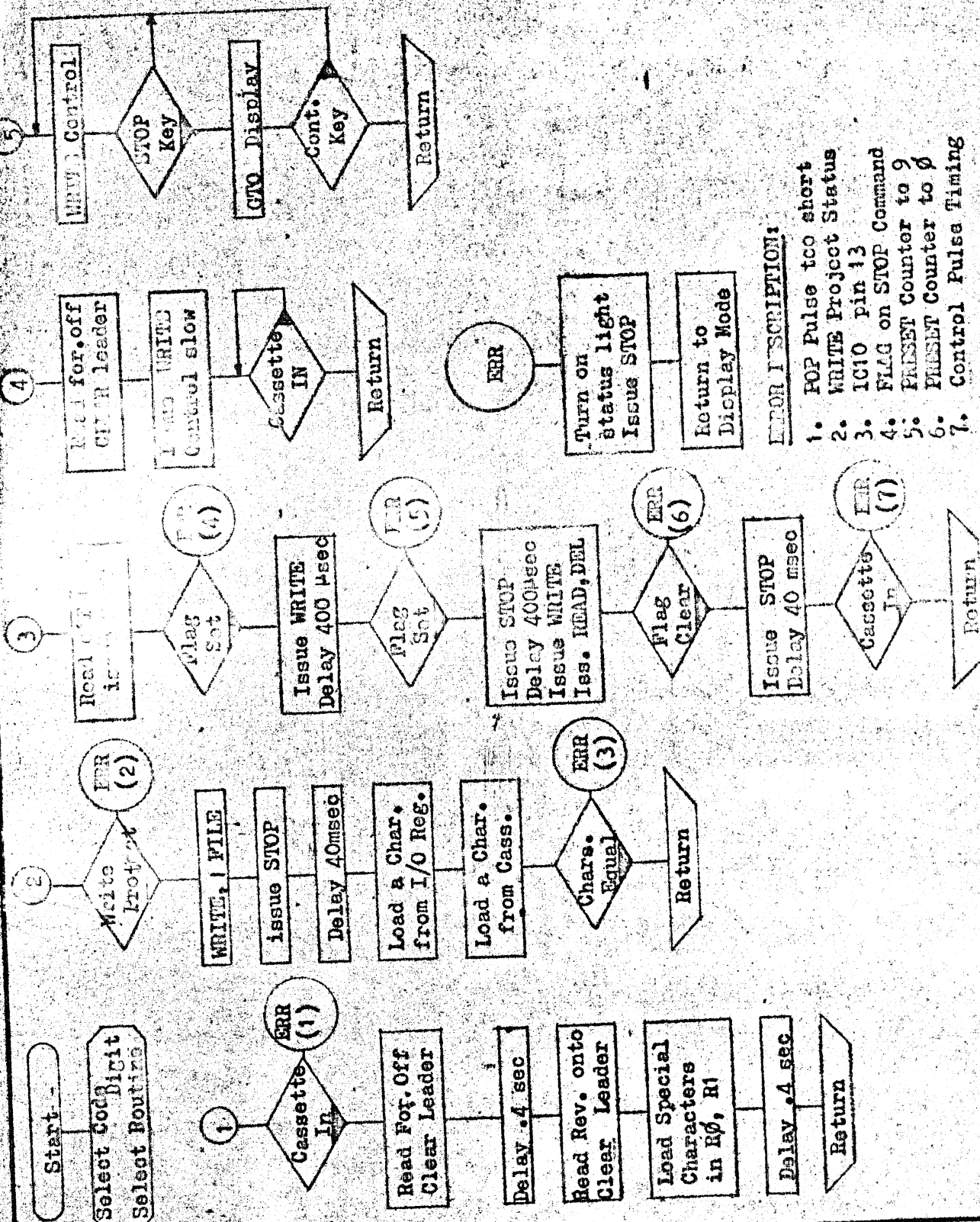
Logic Board Test Control Program

The Control Program is loaded from side two of the magnetic card. It directs tape motion during test execution by calling on the Cassette ROM, or one of the five Assembly Language subroutines. The key stroke sequence used by the Control Program to call on the Assembly Language program is:

- 1) FMT
- 2) 3
- 3) CNT
- 4) Select Code Digit
- 5) Routine Selection Digit

The select code digit is a number, 0 thru 9, which is used as the select code of the cassette transport to be used, and the routine selection digit designates which of the 5 Assembly Language subroutines is to be executed. The Control Program also performs certain software checks of its own on the boards under test. See Appendix C for a listing, and figure VI for a flow chart of the Control Program.

		MODEL 9865A		SYN NO	
LINE PRETEST PROCEDURE					
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		SUPERSEDES		DWG NO A-09865-66562-1	
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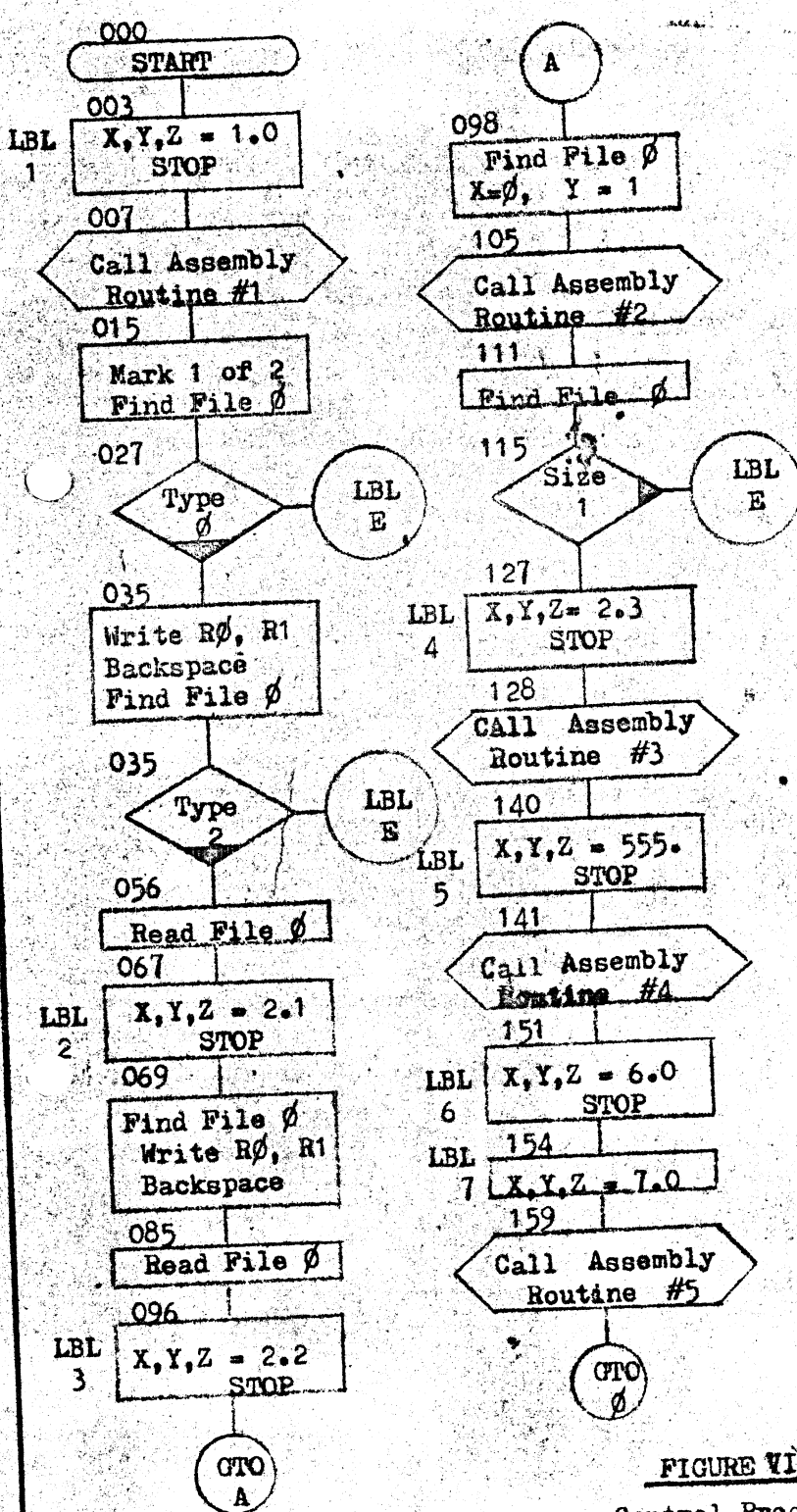


ERROR DESCRIPTION:

1. POP Pulse too short
2. WRITE Project Status
3. IC10 pin 13
4. FLAG on STOP Command
5. PRESET Counter to 9
6. PRESET Counter to 0
7. Control Pulse Timing

ASSEMBLY LANGUAGE PROGRAM FLOWCHART

MODEL 9865A		STK NO	
LINE PRETEST PROCEDURE			
BY G11 Sandberg		DATE 4/25/72	
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SUPERSEDES		DWG NO A-09865-66562-1	



Components not checked by Read/Write Operations are checked as follows:

LBL1 Routine Checks:
POP Pulse length, leader status
Rewind Inactive while running,
Read Clock O.S., Status line filters
verify that cassette writes

LBL2 Routine Checks:
Voltage margins

LBL3 Routine Checks:
WRITE protect on R/W and status

LBL4 Routine Checks:
FLAG on STOP, Preset Counter (0,9)
Control Pulse Length

LBL5 Routine Checks:
POP Clears RUN and REWIND FF's,
stop clears
Command LATCH, Control mode status,
Interrupt CLEARS RUN FF, STOP
inhibits
WRITE, STOP when cassette not in,
Cassette in status

LBL6 Routine Checks:
Rewind Stops and works on leader

LBL7 Routine:
Setting write clock, rewind filter

FIGURE VI

Control Program Flowchart

MODEL 9865A				STK NO	
LINE PRETEST PROCEDURE					
BY Gil Sandberg				DATE 4/25/72	
APPD				SHEET NO 29 OF 38	
SUPERSEDES				DWG NO A-09865-66562-1	
LTR	PC NO	APPROVED	DATE		
REVISIONS					

7830-006-L



APPENDIX A ASSEMBLY LANGUAGE GENERATOR

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0000	FMT	42	0050	3	03	0100	b	14	0150	2	02
0001	3	03	0051	b	14	0101	2	16	0151	2	02
0002	b	14	0052	1	01	0102	2	02	0152	3	10
0003	6	06	0053	2	02	0103	8	10	0153	4	04
0004	0	00	0054	7	07	0104	8	15	0154	FMT	42
0005	4	04	0055	a	13	0105	FMT	42	0155	3	03
0006	6	15	0056	FMT	42	0106	3	03	0156	b	14
0007	FMT	42	0057	3	03	0107	b	14	0157	6	06
0008	3	03	0058	b	14	0108	6	06	0158	2	02
0009	b	14	0059	6	06	0109	2	02	0159	6	06
0010	3	03	0060	XSQ	12	0110	7	07	0160	XSQ	12
0011	3	03	0061	3	03	0111	1	01	0161	FMT	42
0012	5	05	0062	5	05	0112	FMT	42	0162	3	03
0013	1	01	0063	FMT	42	0113	3	03	0163	b	14
0014	FMT	42	0064	3	03	0114	b	14	0164	1/X	17
0015	3	03	0065	b	14	0115	2	02	0165	5	05
0016	b	14	0066	1	01	0116	2	02	0166	4	04
0017	6	06	0067	2	02	0117	8	10	0167	0	00
0018	0	00	0068	7	07	0118	8	10	0168	FMT	42
0019	4	04	0069	b	14	0119	FMT	42	0169	3	03
0020	6	15	0070	FMT	42	0120	3	03	0170	b	14
0021	FMT	42	0071	3	03	0121	b	14	0171	6	06
0022	3	03	0072	b	14	0122	7	07	0172	XSQ	12
0023	b	14	0073	6	06	0123	4	04	0173	1	01
0024	1	01	0074	XSQ	12	0124	1	01	0174	1	01
0025	2	02	0075	5	05	0125	8	10	0175	FMT	42
0026	7	07	0076	1	01	0126	FMT	42	0176	3	03
0027	9	11	0077	FMT	42	0127	3	03	0177	b	14
0028	FMT	42	0078	3	03	0128	b	14	0178	2	02
0029	3	03	0079	b	14	0129	6	06	0179	2	02
0030	b	14	0080	1	01	0130	2	02	0180	7	07
0031	6	06	0081	2	02	0131	6	06	0181	1/X	17
0032	XSQ	12	0082	7	07	0132	3	03	0182	FMT	42
0033	0	00	0083	G	15	0133	FMT	42	0183	3	03
0034	1/X	17	0084	FMT	42	0134	3	03	0184	b	14
0035	FMT	42	0085	3	03	0135	b	14	0185	1/X	17
0036	3	03	0086	b	14	0136	7	07	0186	0	00
0037	b	14	0087	6	06	0137	9	11	0187	0	00
0038	1	01	0088	XSQ	12	0138	6	06	0188	0	00
0039	2	02	0089	5	05	0139	4	04	0189	FMT	42
0040	7	07	0090	9	11	0140	FMT	42	0190	3	03
0041	XSQ	12	0091	FMT	42	0141	3	03	0191	b	14
0042	FMT	42	0092	3	03	0142	b	14	0192	2	02
0043	3	03	0093	b	14	0143	7	07	0193	2	02
0044	b	14	0094	F	16	0144	9	10	0194	8	10
0045	6	06	0095	XSQ	12	0145	XSQ	12	0195	0	00
0046	XSQ	12	0096	7	07	0146	XSQ	12	0196	FMT	42
0047	2	02	0097	F	16	0147	FMT	42	0197	3	03
0048	6	06	0098	FMT	42	0148	3	03	0198	b	14
0049	FMT	42	0099	3	03	0149	b	14	0199	2	02

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM.
PLACE CONTINUE'S IN THESE AREAS IF THIS ROW IS NOT AVAILABLE.

MODEL 9865A		STK NO	
LINE PRETEST PROCEDURE			
BY Gil Sandberg		DATE 4/25/72	
APPD.		SHEET NO 28 OF 33	
SUPERSEDES		DWG NO A-09865-66562-A	
LTB	P.C. NO	APPROVED	DATE
REVISIONS			

FORM NO 7830-006-L



APPENDIX A (continued)

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0200	XSQ	12	0250	1	01	0300	3	03	0350	FMT	42
0201	8	10	0251	8	10	0301	FMT	42	0351	3	03
0202	1	01	0252	FMT	42	0302	3	03	0352	b	14
0203	FMT	42	0253	3	03	0303	b	14	0353	8	16
0204	3	03	0254	b	14	0304	6	06	0354	XSQ	12
0205	b	14	0255	1/X	17	0305	2	02	0355	8	10
0206	7	07	0256	1	01	0306	6	06	0356	t	14
0207	9	11	0257	0	00	0307	XSQ	12	0357	FMT	42
0208	6	06	0258	2	02	0308	FMT	42	0358	3	03
0209	1/X	17	0259	FMT	42	0309	3	03	0359	3	14
0210	FMT	42	0260	3	03	0310	b	14	0360	F	16
0211	3	03	0261	b	14	0311	2	02	0361	XSQ	12
0212	b	14	0262	6	06	0312	XSQ	12	0362	8	10
0213	7	07	0263	2	02	0313	8	10	0363	XSQ	12
0214	0	00	0264	6	06	0314	7	07	0364	FMT	42
0215	8	10	0265	3	03	0315	FMT	42	0365	3	03
0216	XSQ	12	0266	FMT	42	0316	3	03	0366	b	14
0217	FMT	42	0267	3	03	0317	b	14	0367	6	06
0218	3	03	0268	b	14	0318	7	07	0368	2	02
0219	b	14	0269	7	07	0319	b	14	0369	7	07
0220	7	07	0270	9	11	0320	1	01	0370	1	01
0221	8	10	0271	4	04	0321	8	10	0371	FMT	42
0222	3	03	0272	4	04	0322	FMT	42	0372	3	03
0223	8	10	0273	FMT	42	0323	3	03	0373	b	14
0224	FMT	42	0274	3	03	0324	b	14	0374	2	02
0225	3	03	0275	b	14	0325	1/X	17	0375	2	02
0226	b	14	0276	7	07	0326	b	14	0376	3	10
0227	7	07	0277	8	10	0327	XSQ	12	0377	3	03
0228	1	01	0278	4	04	0328	1	01	0378	FMT	42
0229	b	14	0279	XSQ	12	0329	FMT	42	0379	3	03
0230	4	04	0280	FMT	42	0330	3	03	0380	b	14
0231	FMT	42	0281	3	03	0331	b	14	0381	6	06
0232	3	03	0282	b	14	0332	6	06	0382	2	02
0233	b	14	0283	F	16	0333	2	02	0383	6	06
0234	6	06	0284	XSQ	12	0334	6	06	0384	XSQ	12
0235	XSQ	12	0285	7	07	0335	G	15	0385	FMT	42
0236	1	01	0286	F	16	0336	FMT	42	0386	3	03
0237	F	16	0287	FMT	42	0337	3	03	0387	b	14
0238	FMT	42	0288	3	03	0338	b	14	0388	1/X	17
0239	3	03	0289	b	14	0339	1/X	17	0389	5	05
0240	b	14	0290	3	15	0340	4	04	0390	4	04
0241	2	02	0291	2	02	0341	XSQ	12	0391	1	01
0242	2	02	0292	8	10	0342	1	01	0392	FMT	42
0243	8	10	0293	a	13	0343	FMT	42	0393	3	03
0244	8	10	0294	FMT	42	0344	3	03	0394	b	14
0245	FMT	42	0295	3	03	0345	b	14	0395	F	16
0246	3	03	0296	b	14	0346	7	07	0396	XS	12
0247	b	14	0297	2	02	0347	8	10	0397	3	10
0248	7	07	0298	2	02	0348	7	07	0398	3	12
0249	4	04	0299	3	10	0349	1/X	17	0399	FMT	42

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM.
PLACE CONTINUES IN THESE AREAS IF THIS ROM IS NOT AVAILABLE.

				MODEL 9835A		STK NO.	
				LINE PRINT TEST PROCEEDURE			
				BY GIL Sandberg		DATE 4/25/74	
				APPD.		SHEET NO. 31 OF 38	
LTR P.C. NO. APPROVED DATE				SUPERSEDES		DWG. NO. A-09865-5-2-1	
REVISIONS							

7830-006-L



APPENDIX A (continued)

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0400	3	03	0450	b	14	0500	2	02	0550	4	04
0401	b	14	0451	6	06	0501	2	02	0551	1	01
0402	2	02	0452	2	02	0502	8	10	0552	8	10
0403	2	02	0453	6	06	0503	6	06	0553	FMT	42
0404	8	10	0454	XSQ	12	0504	FMT	42	0554	3	03
0405	2	02	0455	FMT	42	0505	3	03	0555	b	14
0406	FMT	42	0456	3	03	0506	b	14	0556	F	16
0407	3	03	0457	b	14	0507	7	07	0557	XSQ	12
0408	b	14	0458	2	02	0508	4	04	0558	8	10
0409	6	06	0459	2	02	0509	1	01	0559	1	01
0410	2	02	0460	8	10	0510	8	10	0560	FMT	42
0411	6	06	0461	6	06	0511	FMT	42	0561	3	03
0412	XSQ	12	0462	FMT	42	0512	3	03	0562	5	05
0413	FMT	42	0463	3	03	0513	5	05	0563	6	06
0414	3	03	0464	b	14	0514	1/X	17	0564	2	02
0415	b	14	0465	7	07	0515	5	05	0565	7	07
0416	2	02	0466	4	04	0516	b	14	0566	1	01
0417	1	01	0467	1	01	0517	1	01	0567	FMT	42
0418	8	10	0468	8	10	0518	FMT	42	0568	3	03
0419	6	06	0469	FMT	42	0519	3	03	0569	8	10
0420	FMT	42	0470	3	03	0520	b	14	0570	2	02
0421	1	01	0471	b	14	0521	F	16	0571	2	02
0422	b	14	0472	2	02	0522	XSQ	12	0572	8	10
0423	7	07	0473	2	02	0523	9	09	0573	0	00
0424	4	04	0474	8	10	0524	XSQ	12	0574	FMT	42
0425	1	01	0475	2	02	0525	FMT	42	0575	3	03
0426	8	10	0476	FMT	42	0526	3	03	0576	6	06
0427	FMT	42	0477	3	03	0527	b	14	0577	6	06
0428	3	03	0478	b	14	0528	2	02	0578	2	02
0429	b	14	0479	6	06	0529	2	02	0579	8	10
0430	1/X	17	0480	2	02	0530	8	10	0580	XSQ	12
0431	5	05	0481	6	06	0531	3	03	0581	FMT	42
0432	4	04	0482	XSQ	12	0532	FMT	42	0582	3	03
0433	1	01	0483	FMT	42	0533	3	03	0583	5	05
0434	FMT	42	0484	3	03	0534	b	14	0584	6	06
0435	3	03	0485	b	14	0535	6	06	0585	2	02
0436	b	14	0486	2	02	0536	2	02	0586	6	06
0437	F	16	0487	0	00	0537	6	06	0587	3	03
0438	XSQ	12	0488	7	07	0538	XSQ	12	0588	FMT	42
0439	8	10	0489	1/X	17	0539	FMT	42	0589	3	03
0440	XSQ	12	0490	FMT	42	0540	3	03	0590	b	14
0441	FMT	42	0491	3	03	0541	b	14	0591	7	07
0442	3	03	0492	b	14	0542	2	02	0592	9	09
0443	b	14	0493	6	06	0543	2	02	0593	8	10
0444	2	02	0494	2	02	0544	9	09	0594	4	04
0445	2	02	0495	6	06	0545	7	07	0595	FMT	42
0446	8	10	0496	XSQ	12	0546	FMT	42	0596	3	03
0447	3	03	0497	FMT	42	0547	3	03	0597	b	14
0448	FMT	42	0498	3	03	0548	b	14	0598	1/X	17
0449	3	03	0499	b	14	0549	7	07	0599	5	05

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM.
PLACE CONTINUE'S IN THESE AREAS IF THIS ROM IS NOT AVAILABLE

			MODEL	9865A	STK NO.	
LINE PRETEST PROCEDURE						
			BY	G.H. Sandberg	DATE	4/25/72
			APPD.		SHEET NO.	32 OF 39
			SUPERSEDES		DWG. NO.	A-09865-6852-4
PC NO.	APPROVED	DATE				
REVISIONS						

7830-006-1

HEWLETT-PACKARD CO.



APPENDIX A (continued)

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0600	4	04	0650	3	03	0700	3	03	0750	3	03
0601	0	00	0651	3	03	0701	3	03	0751	3	03
0602	3	03	0652	3	03	0702	3	03	0752	3	03
0603	3	03	0653	3	03	0703	3	03	0753	3	03
0604	3	03	0654	3	03	0704	3	03	0754	3	03
0605	7	07	0655	2	02	0705	3	03	0755	3	03
0606	2	02	0656	6	06	0706	3	03	0756	3	03
0607	4	04	0657	3	03	0707	3	03	0757	3	03
0608	2	02	0658	3	03	0708	3	03	0758	3	03
0609	3	03	0659	3	03	0709	3	03	0759	3	03
0610	3	03	0660	3	03	0710	3	03	0760	3	03
0611	3	03	0661	3	03	0711	3	03	0761	3	03
0612	1/X	17	0662	0	00	0712	3	03	0762	3	03
0613	1	01	0663	0	00	0713	3	03	0763	3	03
0614	0	00	0664	1/X	17	0714	3	03	0764	3	03
0615	2	02	0665	3	03	0715	3	03	0765	3	03
0616	3	03	0666	3	03	0716	3	03	0766	3	03
0617	3	03	0667	3	03	0717	3	03	0767	3	03
0618	3	03	0668	3	03	0718	3	03	0768	3	03
0619	2	02	0669	2	02	0719	3	03	0769	3	03
0620	2	02	0670	3	03	0720	3	03	0770	3	03
0621	8	08	0671	5	05	0721	3	03	0771	3	03
0622	2	02	0672	3	03	0722	3	03	0772	3	03
0623	3	03	0673	3	03	0723	3	03	0773	3	03
0624	3	03	0674	3	03	0724	3	03	0774	3	03
0625	3	03	0675	3	03	0725	3	03	0775	3	03
0626	6	06	0676	3	03	0726	3	03	0776	3	03
0627	2	02	0677	5	05	0727	3	03	0777	3	03
0628	6	06	0678	9	09	0728	3	03	0778	3	03
0629	3	03	0679	3	03	0729	3	03	0779	3	03
0630	3	03	0680	3	03	0730	3	03	0780	3	03
0631	3	03	0681	3	03	0731	3	03	0781	3	03
0632	3	03	0682	1/X	17	0732	3	03	0782	3	03
0633	1/X	17	0683	1	01	0733	3	03	0783	3	03
0634	5	05	0684	0	00	0734	3	03	0784	3	03
0635	4	04	0685	2	02	0735	3	03	0785	3	03
0636	0	00	0686	3	03	0736	3	03	0786	3	03
0637	3	03	0687	3	03	0737	3	03	0787	3	03
0638	3	03	0688	3	03	0738	3	03	0788	3	03
0639	3	03	0689	7	07	0739	3	03	0789	3	03
0640	6	06	0690	1	01	0740	3	03	0790	3	03
0641	3	03	0691	3	03	0741	3	03	0791	3	03
0642	5	05	0692	2	02	0742	3	03	0792	3	03
0643	9	09	0693	3	03	0743	3	03	0793	3	03
0644	3	03	0694	3	03	0744	3	03	0794	3	03
0645	3	03	0695	3	03	0745	3	03	0795	3	03
0646	3	03	0696	3	03	0746	3	03	0796	3	03
0647	2	02	0697	2	02	0747	3	03	0797	3	03
0648	2	02	0698	3	03	0748	3	03	0798	3	03
0649	8	08	0699	9	09	0749	3	03	0799	3	03

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM
PLACE CONTINUE'S IN THESE AREAS IF THIS ROM IS NOT AVAILABLE

			MODEL 9865A		SHEET NO.	
LINE PRETEST PROCEDURE						
			BY G11 Sandberg		DATE 4/25/72	
			APPRO		SHEET NO 33 OF 38	
			SUPERSEDES		DWG NO A-09865-66562-1	
PC NO	APPROVED	DATE				
REVISIONS						

HEWLETT-PACKARD CO.



APPENDIX A (continued)

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0800--	b	14	0850--	0	00	0900--	3	03	0950--	0	15
0801--	7	07	0851--	0	00	0901--	XSQ	12	0951--	0	00
0802--	8	10	0852--	0	00	0902--	b	14	0952--	FM	42
0803--	XSQ	12	0853--	2	02	0903--	FM	42	0953--	3	03
0804--	a	13	0854--	FM	42	0904--	3	03	0954--	b	14
0805--	FM	42	0855--	3	03	0905--	b	14	0955--	0	00
0806--	3	03	0856--	b	14	0906--	0	00	0956--	0	15
0807--	b	14	0857--	0	00	0907--	b	14	0957--	6	06
0808--	2	02	0858--	0	00	0908--	0	00	0958--	a	13
0809--	0	00	0859--	0	00	0909--	0	00	0959--	FM	42
0810--	7	07	0860--	3	03	0910--	FM	42	0960--	3	03
0811--	1/X	17	0861--	FM	42	0911--	3	03	0961--	b	14
0812--	FM	42	0862--	3	03	0912--	b	14	0962--	0	00
0813--	3	03	0863--	b	14	0913--	0	00	0963--	b	14
0814--	b	14	0864--	0	00	0914--	5	05	0964--	6	06
0815--	6	06	0865--	0	00	0915--	0	00	0965--	6	06
0816--	2	02	0866--	0	00	0916--	0	00	0966--	FM	42
0817--	6	06	0867--	4	04	0917--	FM	42	0967--	3	03
0818--	XSQ	12	0868--	FM	42	0918--	3	03	0968--	b	14
0819--	FM	42	0869--	3	03	0919--	b	14	0969--	0	00
0820--	3	03	0870--	b	14	0920--	0	00	0970--	0	15
0821--	b	14	0871--	0	00	0921--	a	13	0971--	b	14
0822--	1/X	17	0872--	0	00	0922--	0	00	0972--	a	13
0823--	5	05	0873--	0	00	0923--	0	00	0973--	FM	42
0824--	4	04	0874--	5	05	0924--	FM	42	0974--	3	03
0825--	0	00	0875--	FM	42	0925--	3	03	0975--	b	14
0826--	FM	42	0876--	3	03	0926--	b	14	0976--	0	00
0827--	3	03	0877--	b	14	0927--	0	00	0977--	b	14
0828--	b	14	0878--	0	00	0928--	0	00	0978--	3	16
0829--	6	06	0879--	8	10	0929--	2	02	0979--	b	14
0830--	XSQ	12	0880--	4	04	0930--	7	07	0980--	FM	42
0831--	7	07	0881--	8	10	0931--	FM	42	0981--	3	03
0832--	1	01	0882--	FM	42	0932--	3	03	0982--	b	14
0833--	FM	42	0883--	3	03	0933--	b	14	0983--	0	00
0834--	3	03	0884--	b	14	0934--	1/X	17	0984--	0	15
0835--	b	14	0885--	0	00	0935--	1/X	17	0985--	6	06
0836--	1/X	17	0886--	3	03	0936--	0	15	0986--	1/X	17
0837--	1	01	0887--	a	13	0937--	8	10	0987--	END	46
0838--	0	00	0888--	0	00	0938--	FM	42			
0839--	2	02	0889--	FM	42	0939--	3	03			
0840--	FM	42	0890--	3	03	0940--	b	14			
0841--	3	03	0891--	b	14	0941--	1/X	17			
0842--	b	14	0892--	0	00	0942--	6	06			
0843--	0	00	0893--	2	02	0943--	3	03			
0844--	0	00	0894--	0	00	0944--	b	14			
0845--	0	00	0895--	1	01	0945--	FM	42			
0846--	1	01	0896--	FM	42	0946--	3	03			
0847--	FM	42	0897--	3	03	0947--	b	14			
0848--	3	03	0898--	b	14	0948--	8	10			
0849--	b	14	0899--	0	00	0949--	XSQ	12			

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM.
PLACE CONTINUE'S IN THESE AREAS IF THIS ROM IS NOT AVAILABLE.

				MODEL 9865A		SER. NO.	
LINE PRETEST PROCEDURE							
BY Gil Sandberg				DATE 4/25/72			
APPD				SHEET NO 34 OF 35			
REVISIONS				SUPERSEDES			
DWG NO A-09865-66562-1							



APPENDIX B ASSEMBLY LANGUAGE PROGRAM LISTING

PAGE 0322 #31

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0001      ASMB,A,B,L
0002 01001      ORG 1001B
0003 01001 050115 JSM GETKE
0004 01002 031721 STA SCLED
0005 01003 050115 JSM GETKE
0006 01004 011171 CPA ONE
0007 01005 065017 JMP RONE
0008 01006 011172 CPA TWO
0009 01007 065046 JMP RTWO
0010 01010 011173 CPA THREE
0011 01011 065065 JMP RTHRE
0012 01012 011174 CPA FOUR
0013 01013 065121 JMP RFOUR
0014 01014 011175 CPA FIVE
0015 01015 065131 JMP RFIVE
0016 01016 155173 JMP ERSTP,I
0017*
0018 01017 161215 RONE JSM TESTU,I
0019 01020 061161 JSM OFFLD
0020 01021 021210 RONE1 LDA ELDLY
0021 01022 072033 RIA *
0022 01023 061143 JSM GTSTS
0023 01024 074544 SBL 5
0024 01025 074292 SBM RONE2
0025 01026 021204 LDA RCRF
0026 01027 061152 JSM GOIT
0027 01030 172500 SFS 0
0028 01031 065021 JMP RONE1
0029 01032 021177 RONE2 LDA B1660
0030 01033 170300 CLR
0031 01034 021203 LDA B1001
0032 01035 025201 LDB B1654 R1
0033 01036 074557 RONE3 STA B+1
0034 01037 070212 SAM RONE4
0035 01040 074070 SIB *+1
0036 01041 070704 SAL 2
0037 01042 065036 JMP RONE3
0038 01043 021210 RONE4 LDA ELDLY
0039 01044 072030 RIA *
0040 01045 170422 RET
0041*
0042 01046 061143 RTWO JSM GTSTS
0043 01047 074504 SBL 6
0044 01050 074112 SBM RTW01
0045 01051 165176 JMP ERSTP,I
0046 01052 161213 RTW01 JSM R564,I
0047 01053 021203 LDA STOP
0048 01054 051152 JSM GOIT
0049 01055 025207 LDB LDELY
0050 01056 076030 RIB *
0051 01057 176241 LTB 1
0052 01060 061155 JSM GOIT+3
0053 01061 172241 LTA 1
0054 01062 074057 CPA B
0055 01063 165214 JMP WRDTA,I
0056 01064 165212 JMP HERSP,I

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MODEL 9865A

SIR NO

LINE PRETEST PROCEDURE

BY Gil Sandberg

DATE 4/25/72

APPD

SHEET NO 35

OF 33

REVISIONS

SUPERSEDES

DWG. NO. A-09865-66502-1

7830-006-1

HEWLETT-PACKARD CO.



APPENDIX B (continued)

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0057*			
0058	01065	061161	REHRE JSM OFFLD
0059	01066	021203	LDA STOP
0060	01067	061152	JSM GOIT
0061	01070	172501	SFS 1
0062	01071	165212	JMP HERSP,1
0063	01072	021202	LDA WCFS
0064	01073	061152	JSM GOIT
0065	01074	021206	LDA DELAY
0066	01075	072030	RIA *
0067	01076	172521	SFS 1
0068	01077	165212	JMP HERSP,1
0069	01100	021203	LDA STOP
0070	01101	061152	JSM GOIT
0071	01102	021206	LDA DELAY
0072	01103	072030	RIA *
0073	01104	021202	LDA WCFS
0074	01105	061152	JSM GOIT
0075	01106	020177	LDA RCFS
0076	01107	061152	JSM GOIT
0077	01110	021206	LDA DELAY
0078	01111	072030	RIA *
0079	01112	172701	SFC 1
0080	01113	165212	JMP HERSP,1
0081	01114	021203	LDA STOP
0082	01115	061152	JSM GOIT
0083	01116	021207	LDA LDELY
0084	01117	072030	RIA *
0085	01120	165215	JMP TESTU,1
0086*			
0087	01121	061161	RFOUR JSM OFFLD
0088	01122	021202	LDA WCFS
0089	01123	061152	JSM GOIT
0090	01124	061143	JSM GTSTS
0091	01125	074604	SBL 4
0092	01126	172520	SFS 0
0093	01127	075513	SBP RFOUR
0094	01130	170402	RET
0095*			
0096	01131	021202	RFIVE LDA WCFS
0097	01132	061152	JSM GOIT
0098	01133	172500	SFS 0
0099	01134	065131	JMP RFIVE
0100	01135	021203	LDA STOP
0101	01136	061152	JSM GOIT
0102	01137	160017	JSM DISP,1
0103	01140	011205	CRA CNTKY
0104	01141	065131	JMP RFIVE
0105	01142	170402	RET
0106*			
0107	01143	070742	GTSTS SAR 16
0108	01144	161211	JSM CHAND,1
0109	01145	172741	STF 1
0110	01146	172141	OTA 1
0111	01147	172741	STF 1
0112	01150	176241	LFB 1

		MODEL 9865A		STK NO	
LINE PRETEST PROCEDURE					
BY Gil Sandberg				DATE 4/28/72	
APPD				SHEET NO 36 OF 38	
REVISIONS				DWG NO A-09865-66562A-1	
LT#	P.C. NO	APPROVED	DATE		

7830-006-L

86239



APPENDIX B (continued)

PAGE 2004 431

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0113 01151 170402 RET
0114*
0115 01152 025721 GOIT LDB SCLED
0116 01153 074146 RBR 4
0117 01154 074217 TOR 3
0118 01155 172741 STF 1
0119 01156 172141 OTA 1
0120 01157 172621 STC 1
0121 01158 170402 RET
0122*
0123 01161 061143 OFFLD JSH GTSTS
0124 01162 074544 SBL 5
0125 01163 074253 SBP OFLD1
0126 01164 020177 LQA RCFS
0127 01165 061152 JSH GOIT
0128 01166 172500 SFS 0
0129 01167 065161 JHP OFFLD
0130 01170 170402 OFLD1 RET
0131*
0132 00115 GETKE EQU 1150
0133 01171 000001 ONE OCT 1
0134 01172 000002 TWO OCT 2
0135 01173 000003 THREE OCT 3
0136 01174 000004 FOUR OCT 4
0137 01175 000005 FIVE OCT 5
0138 01176 004110 ERSTP DEF 41100
0139 01177 001660 01660 OCT 1660
0140 01200 001001 01001 OCT 1001
0141 01201 001654 01654 OCT 1654
0142 00177 RCFS EQU 1770
0143 01202 006000 WCFS OCT 6000
0144 01203 002400 STOP OCT 2400
0145 00017 DISP EQU 170
0146 01204 005400 RCRF OCT 5400
0147 01205 000047 CNTRY OCT 47
0148 01721 SCLED EQU 17210
0149 01206 177730 DELAY DEC -40 450 USEC DELAY
0150 01207 173074 LDEL DEC -2500 40 MSEC DELAY
0151 01210 105320 ELDI DEC -30000
0152 01211 006553 CMND DEF 65530 **
0153 01212 006146 HERSP DEF 61460 **
0154 01213 006713 R564 DEF 67130 **
0155 01214 006354 WRDTE DEF 63540 **
0156 01215 006557 TESTU DEF 65570 **
0157 END
* NO ERRORS*

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		MODEL 9865A		STK NO	
LINE PRETEST PROCEDURE					
BY Gil Sandberg				DATE 4/25/72	
APPD				SHEET NO 32 OF 38	
SUPERSEDES				DWG NO A-09865-66562-1	
LTB	P.C. NO	APPROVED	DATE		
REVISIONS					

7830-006-1



APPENDIX G CONTROL PROGRAM

STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE	STEP	KEY	CODE
0000	LBL	51	0050	X=Y	50	0100	5	05	0150	UP	27
0001	1	01	0051	GTO	44	0101	CLX	37	0151	STP	41
0002	CNT	47	0052	LBL	51	0102	1	01	0152	LBL	51
0003	1	01	0053	E	60	0103	UP	27	0153	7	07
0004	UP	27	0054	CNT	47	0104	0	00	0154	7	07
0005	UP	27	0055	2	02	0105	FMT	42	0155	UP	27
0006	STP	41	0056	FMT	42	0106	3	03	0156	UP	27
0007	FMT	42	0057	5	05	0107	CNT	47	0157	FMT	42
0008	3	03	0058	5	05	0108	5	05	0158	3	03
0009	CNT	47	0059	XFR	67	0109	2	02	0159	CNT	47
0010	5	05	0060	LBL	51	0110	0	00	0160	5	05
0011	1	01	0061	2	02	0111	FMT	42	0161	5	05
0012	2	02	0062	2	02	0112	5	05	0162	GTO	44
0013	UP	27	0063	.	21	0113	5	05	0163	0	00
0014	1	01	0064	1	01	0114	CLX	37	0164	LBL	51
0015	FMT	42	0065	UP	27	0115	X>Y	53	0165	E	60
0016	5	05	0066	UP	27	0116	GTO	44	0166	CLR	20
0017	5	05	0067	STP	41	0117	LBL	51	0167	DIV	35
0018	SFL	54	0068	0	00	0118	E	60	0168	STP	41
0019	SFL	54	0069	FMT	42	0119	CNT	47	0169	GTO	44
0020	0	00	0070	5	05	0120	LBL	51	0170	0	00
0021	FMT	42	0071	5	05	0121	4	04	0171	END	46
0022	5	05	0072	CLX	37	0122	2	02			
0023	5	05	0073	2	02	0123	.	21			
0024	CLX	37	0074	UP	27	0124	3	03			
0025	DN	25	0075	0	00	0125	UP	27			
0026	2	02	0076	FMT	42	0126	UP	27			
0027	X=Y	50	0077	5	05	0127	STP	41			
0028	GTO	44	0078	5	05	0128	FMT	42			
0029	LBL	51	0079	XTO	23	0129	3	03			
0030	E	60	0080	FMT	42	0130	CNT	47			
0031	CNT	47	0081	5	05	0131	5	05			
0032	2	02	0082	5	05	0132	3	03			
0033	UP	27	0083	SQT	76	0133	LBL	51			
0034	0	00	0084	2	02	0134	5	05			
0035	FMT	42	0085	FMT	42	0135	5	05			
0036	5	05	0086	5	05	0136	5	05			
0037	5	05	0087	5	05	0137	5	05			
0038	XTO	23	0088	XFR	67	0138	UP	27			
0039	FMT	42	0089	LBL	51	0139	UP	27			
0040	5	05	0090	3	03	0140	STP	41			
0041	5	05	0091	2	02	0141	FMT	42			
0042	SQT	76	0092	.	21	0142	3	03			
0043	0	00	0093	2	02	0143	CNT	47			
0044	FMT	42	0094	UP	27	0144	5	05			
0045	5	05	0095	UP	27	0145	4	04			
0046	5	05	0096	STP	41	0146	LBL	51			
0047	CLX	37	0097	0	00	0147	6	06			
0048	DN	25	0098	FMT	42	0148	6	06			
0049	0	00	0099	5	05	0149	UP	27			

GRAY AREAS DENOTE PROGRAM STEPS UTILIZING THE PRINTER ALPHA ROM.
PLACE CONTINUE'S IN THESE AREAS IF THIS ROM IS NOT AVAILABLE.

				MODEL	9865A	STR. NO.	
				LINE PRETEST PROCEDURE			
				BY	G11 Sandberg	DATE	4/25/72
				APPRO		SHEET NO.	38 OF 38
LTR	P.C. NO.	APPROVED	DATE	SUPERSEDES		DWG. NO. A-09865-66562-1	
REVISIONS							