

DIAGNOSTIC FUNCTION TEST
REPRODUCTION

WORDMARK AND BUFFER TEST

A. PURPOSE

1. TO INSERT A WORDMARK IN EACH PRINT POSITION, TEST FOR IT AND PRINT IT.
2. TO ALTERNATELY PRINT A LINE OF PRINT AND THEN A LINE OF WORDMARKS.
3. TO TEST THE PRINT BUSY AND CARRIAGE BUSY LATCHES ON A BUFFERED MACHINE. (IF THE MACHINE IS NOT BUFFERED, ERROR PRINTOUT WILL OCCUR.)

B. LOADING PROCEDURES

PLACE TEST IN 1402 READ HOPPER AND DEPRESS LOAD KEY.
 WHEN RUNNING TEST FROM TAPE, ENTER A 1 IN 1261.

C. PROGRAM CONTROL

1. SENSE SWITCHES

- B ON FOR SCOPING
OFF TO CONTINUE
- D ON TO REPEAT SECTION OF TEST
OFF TO CONTINUE
- E ON TO STOP ON ERROR (BUFFER TEST)
OFF TO PRINT ERROR (BUFFER TEST)

D. TEST PROCEDURE

1. THE PRINT AREA IS LOADED AND A PRINTOUT IS MADE. A WORDMARK IS INSERTED IN ADDRESS 201 AND A TEST IS MADE FOR A WORDMARK IN 201. IF THE WORDMARK IS MISSING, AN ERROR HALT OCCURS. THE ADDRESS IS INCREASED, THE WORDMARK IS INSERTED AND TESTED FOR AND PRINTED OUT UNTIL ALL 132 PRINT POSITIONS CONTAIN WORDMARKS, THEN A LINE IS PRINTED. VISUAL INSPECTION DETERMINES WHETHER AN ERROR OCCURRED.
2. THE PRINT AREA IS LOADED AND WORD MARKS ARE PLACED IN ALL 132 PRINT POSITIONS. ALTERNATE PRINT WORD MARKS AND PRINT A LINE OP-CODES ARE EXECUTED UNTIL 40 LINES HAVE PRINTED.
3. IF THE PRINTER (1403) ON THIS SYSTEM IS NOT BUFFERED OR IF THIS SECTION OF THE TEST IS NOT DESIRED, CHANGE THE INSTRUCTION IN LOCATION 622 FROM NL810 TO B348.

DATE	2-2-61	6-29-63	17. 10. 63				
ENG. CHG. NO.	110378	117628	TA 1976				

F. (CONTINUED)

REPRODUCTION

1234567890ABCDEFGHIJKLMN OPQRSTUVWXYZ*~!@#%&'()*+,-./:;<=>?`{|}~1234567890ABCDEFGHIJ

ALTERNATE PRINT WORDMARKS + PRINT LINE TEST-ALTERNATE PRINT WORDMA
ALTERNATE PRINT WORDMARKS + PRINT LINE TEST-ALTERNATE PRINT WORDMA
ALTERNATE PRINT WORDMARKS + PRINT LINE TEST-ALTERNATE PRINT WORDMA

- BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
- BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
- BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
- BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.

2. ERROR - BUFFER TEST ONLY.

- PRINT LATCH ERROR 1 BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
- CARRIAGE LATCH ERROR 1 BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.
- PRINT LATCH ERROR 1 BUFFERED MACHINES PRINT AND CARRIAGE BUSY TEST.

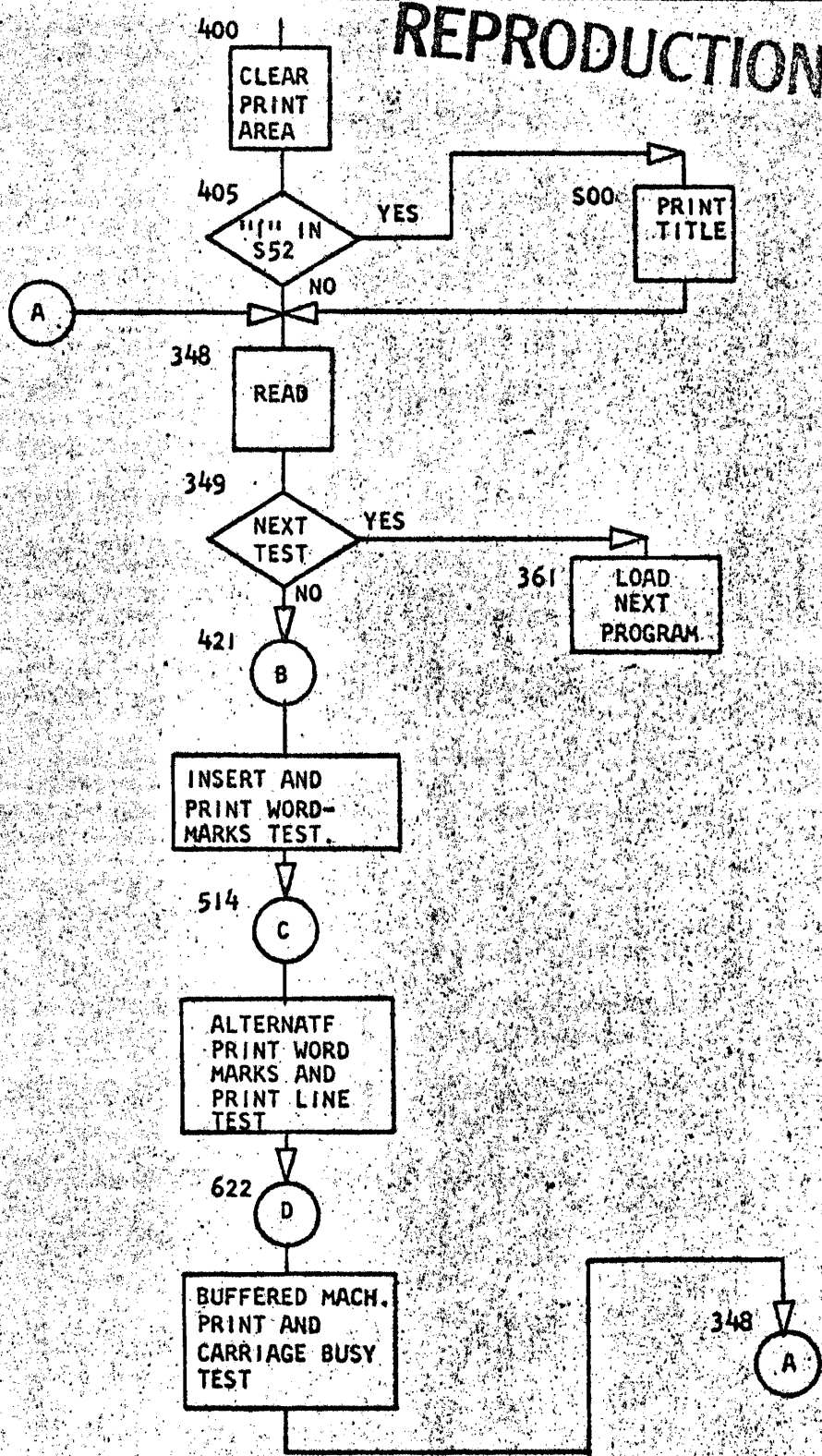
G. COMMENTS

1. PRINT ERROR NUMBER 1 INDICATES THAT THE PRINTER BUSY LATCH FAILED TO STAY ON FOR APPROXIMATELY 79 MS.
2. PRINTER ERROR NUMBER 2 INDICATES THAT THE PRINTER BUSY LATCH WAS ON AFTER APPROXIMATELY 86 MS.
3. CARRIAGE ERROR NUMBER 1 INDICATES THAT THE CARRIAGE BUSY LATCH FAILED TO STAY ON FOR APPROXIMATELY 13 MS.
4. CARRIAGE ERROR NUMBER 2 INDICATES THAT THE CARRIAGE BUSY LATCH WAS ON AFTER 16 MS.

DATE	2-2-61	6-29-63	17. 10. 63				
ENG. CHG. NO.	110378	117628	TA 1976				

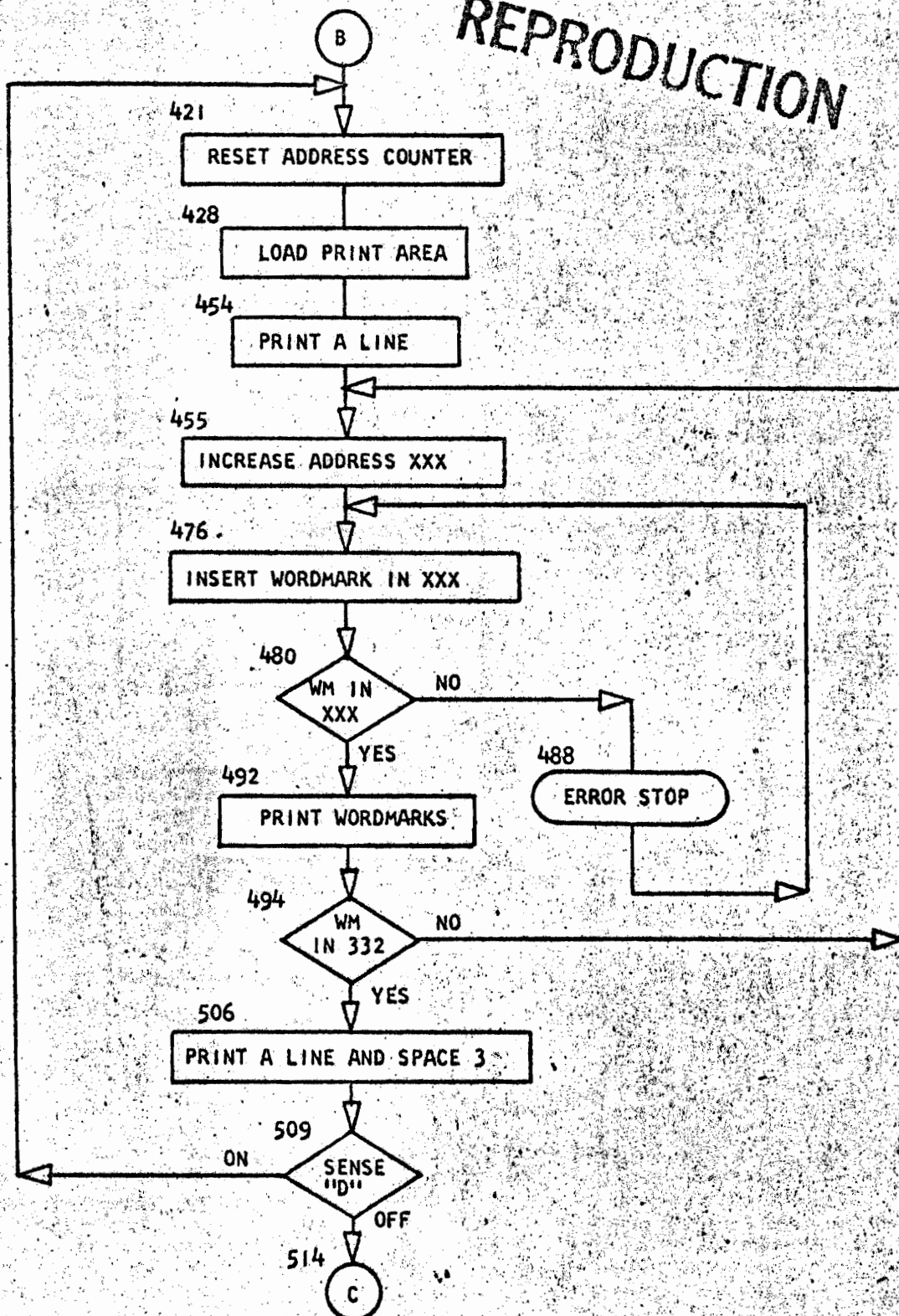
DIAGNOSTIC FUNCTION TEST

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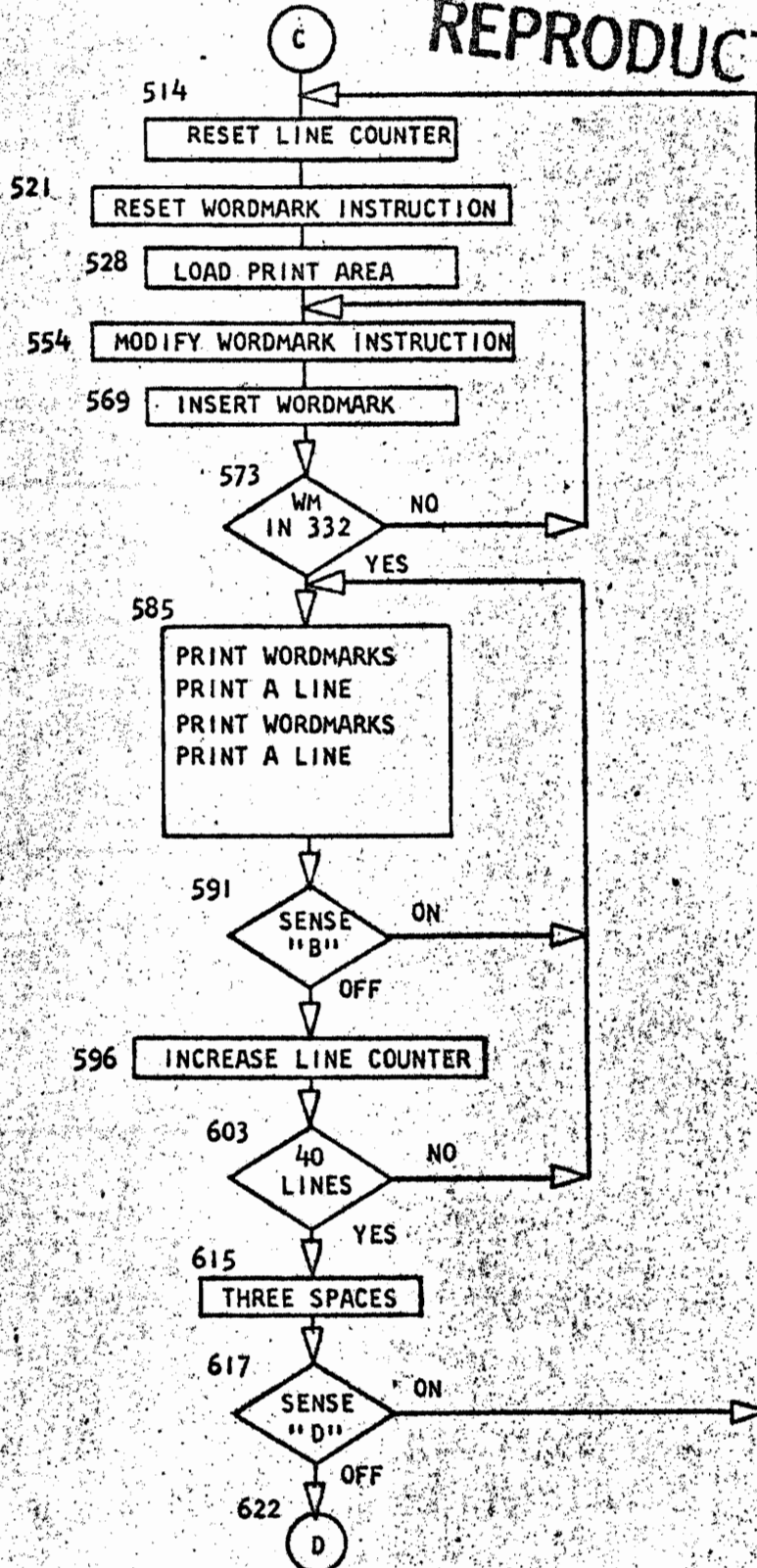
DATE	2-2-61	6-29-63	17. 10. 63				
ENG. CHG. NO.	110378	117628	TA 1976				

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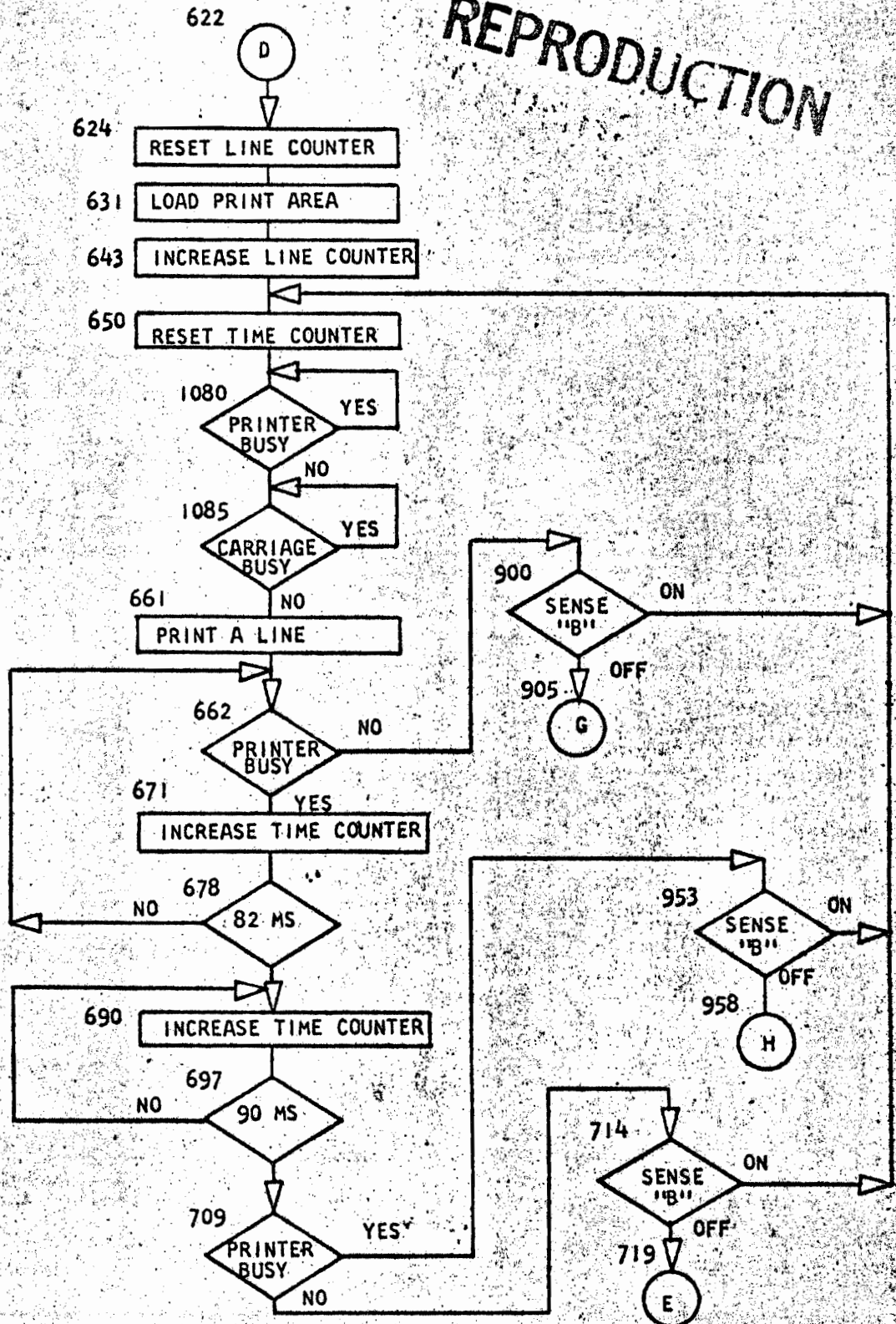
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NG. CHG. NO.	110378	117628	TA 1976				

REPRODUCTION



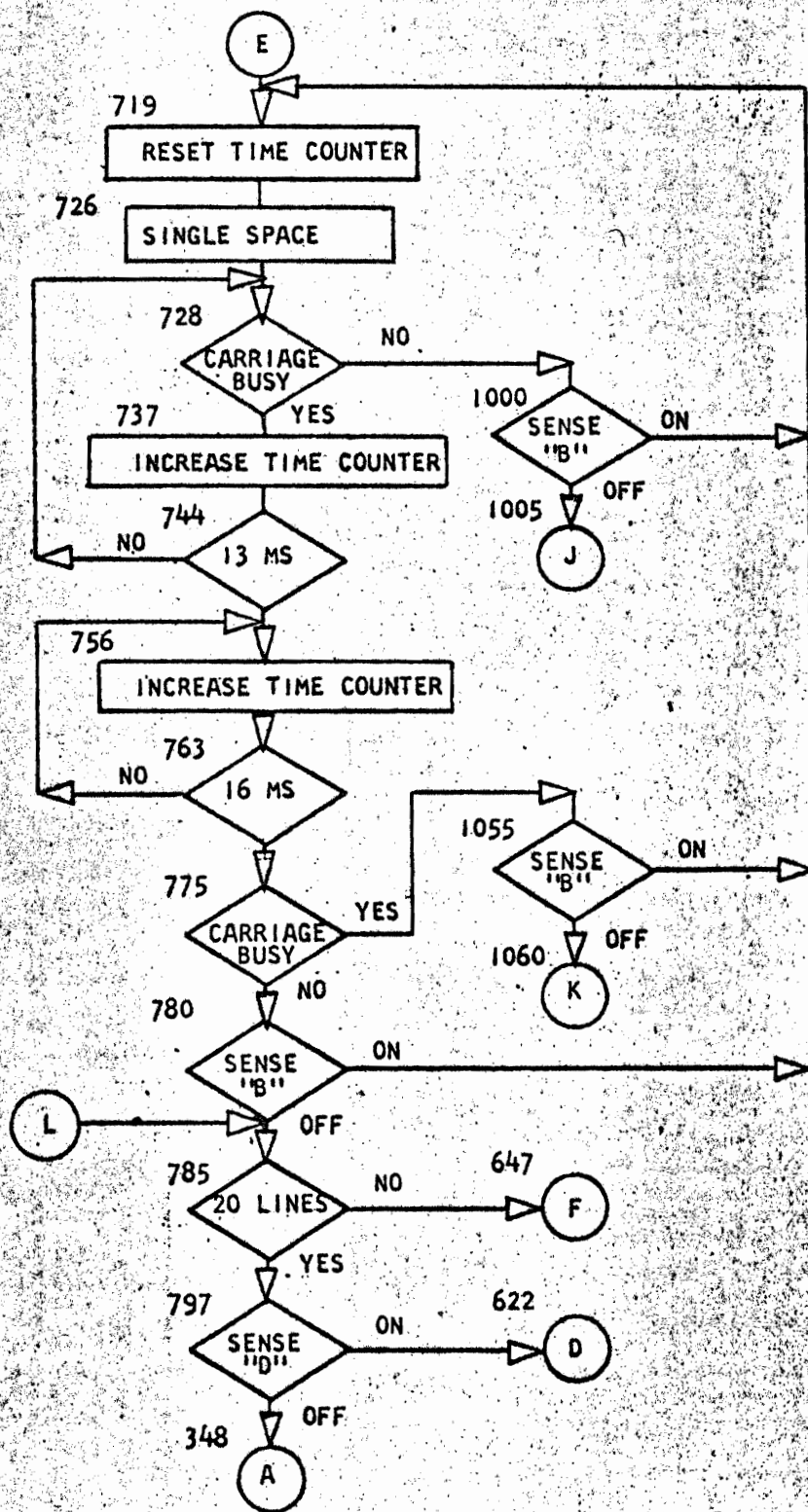
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ENG. CHG. NO.	110378	117628	TA 1976				

REPRODUCTION



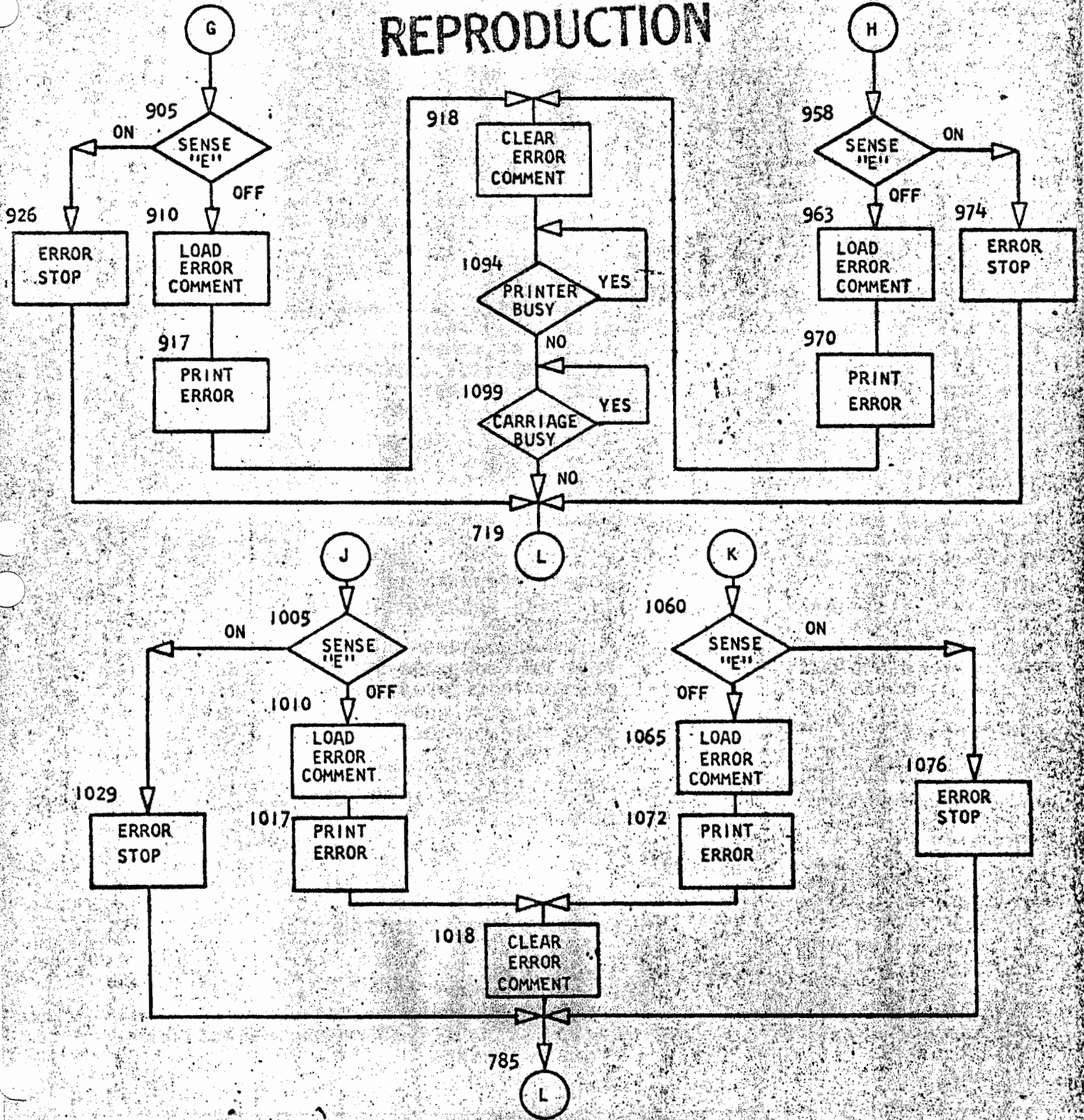
DATE	2-2-61	6-29-63	17.10.63					
ENG. CHG. NO.	110378	117628	TA 1976					

REPRODUCTION



DATE	2-2-61	6-29-63	17. 10. 63				
ENG. CHG. NO.	110378	117628	TA 1976				

REPRODUCTION



DATE	2-2-61	6-29-63	17.10.63				
ENG. CHG. NO.	110378	117628	TA1976				

1401 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

PART NO. 451418
SHEET 10 OF 13
BLOCK NO. 1010C

REPRODUCTION

PROGRAM LISTING FOR USE WITH FLOW CHART

WORDMARK AND BUFFER TEST 1010C

INSTRUCTION	ADDRESS	OP	A	B	REMARKS
087	087	4	21		LOAD A TAG AREA
377	377	B	400	S611	USE WHEN TESTS ARE RUN FROM TAPE
385	385	B	S88		..
400	400	/	332		START TEST
404	404	/			..
405	405	B	S00	S521	BR TO TITLE PRINT ROUTINE IF 1 IN S52
413	413	/	080		CLEAR READ AREA
417	417	B	421		BRANCH TO PROGRAM
421	421	L	814	817	RESET ADDRESS COUNTER
428	428	/	332		LOAD PRINT AREA
432	432	/			..
433	433	L	/53	244	..
440	440	M	244	288	..
447	447	M	244	332	..
454	454	2			PRINT
455	455	A	455	817	INCREASE ADDRESS XXX
462	462	M	817	479	..
469	469	M	817	486	..
476	476	.	XXX		*INSERT WORDMARK IN XXX
480	480	V	492	XXX1	*TEST FOR WORDMARK IN XXX
488	488	.	476		ERROR STOP
492	492	2	□		PRINT WORDMARKS
494	494	V	506	3321	TEST FOR WORDMARK IN 332
502	502	B	455		BRANCH TO INCREASE ADDRESS
506	506	F	T		PRINT A LINE AND-
508	508	2			SKIP THREE SPACES
509	509	B	421	D	ON TO REPEAT
514	514	L	810	808	RESET LINE COUNTER
521	521	M	814	572	RESET WORDMARK INSTRUCTION
528	528	/	332		LOAD PRINT AREA
532	532	/			..
533	533	L	/98	244	..
540	540	M	244	288	..
547	547	M	244	332	..
554	554	.	570		..
558	558	A	558	572	MODIFY WORDMARK INSTRUCTION
565	565	□	570		..
569	569	.	200		..
573	573	V	585	3321	*INSERT WORDMARK
581	581	B	554		TEST FOR WORDMARK IN 332
585	585	2	□		BRANCH TO MODIFY WORDMARK INSTRUCTION
587	587	2			PRINT WORDMARKS
					PRINT A LINE

SS

DATE	2-2-61	6-29-63	17.10.63				
ENG. CHG. NO.	110378	117628	TA 1976				

1401 DATA PROCESSING SYSTEM
DIAGNOSTIC FUNCTION TEST

REPRODUCTION

588	588	2	□	PRINT WORDMARKS	
590	590	2		PRINT A LINE	
591	591	B	585 B	B ON TO SCOPE	SS
596	596	A	596 808	INCREASE LINE COUNTER	
603	603	B	615 8071	TEST FOR 40 LINES OF PRINT	
611	611	B	585	BRANCH TO REPEAT TEST	
615	615	F	L	TRIPLE SPACE	
617	617	B	514 D	D ON TO REPEAT TEST	SS
622	622	N		*AN ASTERISK MEANS INSTRUCTION CHANGES	
624	624	L	810 808	RESET LINE COUNTER	
631	631	/	332	LOAD PRINT AREA	
635	635	/		..	
636	636	L	879 289	..	
643	643	A	643 808	INCREASE LINE COUNTER	
650	650	L	811 817	RESET TIME COUNTER	
657	657	B	*80	BRANCH TO FREE PRINTER AND CARRIAGE	
661	661	2		PRINT A LINE	
662	662	B	671 P	BRANCH ON PRINTER BUSY	
667	667	B	900	BRANCH TO ERROR PRINT 1	
671	671	A	671 817	INCREASE TIME COUNTER	
678	678	C	817 820	TEST FOR 78 MS	
685	685	B	662 /	BRANCH TO PRINTER BUSY	
690	690	A	690 817	INCREASE TIME COUNTER	
697	697	C	817 823	TEST FOR 86 MS	
704	704	B	690 /	BRANCH TO INCREASE TIME COUNTER	
709	709	B	953 P	BRANCH ON PRINTER BUSY TO ERROR 2	
714	714	B	650 B	B ON TO SCOPE	SS
719	719	N	8/1 817	RESET TIME COUNTER	
726	726	L		
727	727	F	J	SINGLE SPACE	
729	729	B	738 R	BRANCH ON CARRIAGE BUSY	
734	734	B	*00	BRANCH TO CARRIAGE ERROR 1	
738	738	A	738 817	INCREASE TIME COUNTER	
745	745	C	817 826	TEST FOR 13 MS	
752	752	B	729 /	BRANCH TO CARRIAGE BUSY	
757	757	A	757 817	INCREASE TIME COUNTER	
764	764	C	817 829	TEST FOR 16 MS	
771	771	B	757 /	BRANCH TO INCREASE TIME COUNTER	
776	776	B	*55 R	BRANCH ON CARRIAGE BUSY TO ERROR 2	
781	781	B	719 B	B ON TO SCOPE	SS
786	786	B	798 8072	TEST FOR 20 LINES OF PRINT	
794	794	B	643	BRANCH TO REPEAT TEST	
798	798	B	622 D	D ON TO REPEAT TEST	SS
803	803	B	348	BRANCH TO CHAINING ROUTINE	
807	807	L	L	CONSTANT	
809	809	0	00	..	
812	812	2	00	..	
815	815	A	AA	COUNTER	
818	818	1	63	78 MS	C FOR TA
821	821	1	91	86 MS	C FOR TA
824	824	0	41	19.2 MS	C FOR TA

DATE	2-2-61	6-29-63	17. 10. 63				
ENG. CHG. NO.	110378	117628	TA 1976				

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827	827	O 44	20.3 MS	C FOR TA
830	830	B UFF	ERED MACHINES PR FIELD	
850	850	I NT	AND CARRIAGE BUS	.. NO WM
870	870	Y TE	ST.
880	880	P RIN T	LATCH ERROR 1	COMMENT
900	900	B 650	B	ON TO SCOPE SS
905	905	B 926	E	ON FOR ERROR STOP SS
910	910	M 898	229	MOVE ERROR COMMENT
917	917	2		PRINT ERROR COMMENT
918	918	/ 235		REMOVE ERROR COMMENT
922	922	B 994		BRANCH TO FREE PRINTER AND CARRIAGE
926	926	. 719		ERROR HALT
930	930	P RIN T	LATCH ERROR 2	COMMENT
953	953	B 650	B	ON TO SCOPE SS
958	958	B 974	E	ON FOR ERROR STOP SS
963	963	M 948	229	MOVE ERROR COMMENT
970	970	2 918		PRINT ERROR AND BRANCH
974	974	. 719		ERROR HALT
978	978	C ARR IAGE	LATCH ERROR 1	COMMENT
1000	900	B 719	B	ON TO SCOPE SS
1005	905	B 926	E	ON FOR ERROR STOP SS
1010	910	M 999	232	MOVE ERROR COMMENT
1017	917	2		PRINT ERROR COMMENT
1018	918	/ 235		REMOVE ERROR COMMENT
1022	922	B 786		BRANCH TO CONTINUE
1026	926	. 786		ERROR HALT
1030	930	C ARR IAGE	LATCH ERROR 2	COMMENT
1055	955	B 719	B	ON TO SCOPE SS
1060	960	B 976	E	ON FOR ERROR STOP SS
1065	965	M 951	232	MOVE ERROR COMMENT
1072	972	2 918		PRINT ERROR AND BRANCH
1076	976	. 786		ERROR HALT
1080	980	B 980	P	BRANCH UNTIL PRINTER IS FREE
1085	985	B 985	R	BRANCH UNTIL CARRIAGE IS FREE
1090	990	B 661		BRANCH TO CONTINUE
1094	994	B 994	P	BRANCH UNTIL PRINTER IS FREE
1099	999	B 999	R	BRANCH UNTIL CARRIAGE IS FREE
1104	104	B 719		BRANCH TO CONTINUE
1110	110	1 234	567890□□AB CDEFGH	FIELD
1130	130	I JKL	MNOPQRSTUVWXYZ**	.. NO WM
1150	150	* □□□	
1155	155	A L T E	R NATE PRINT WORD
1175	175	M ARK S +	PRINT LINE T	.. NO WM
1195	195	E ST.	
1230	S30	O 02		ALTER LOOP CONSTANT FOR ADV PROGRAM

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TABLE OF UNPRINTABLE CHARACTERS

LP-LEFT PARENTHESIS	12 5 8	SE-SEMICOLON	11 6 8	DE-DELTA	11 7 8
WS-WORD SEPARATOR	0 5 8	LT-LESS THAN	12 6 8	PZ-PLUS ZERO	12 0
TS-TAPE SEGMENT MARK	0 7 8	GT-GREATER THAN	6 8	TM-TAPE MARK	7 8
GM-GROUP MARK	12 7 8	MZ-MINUS ZERO	11 0	CO-COLON	5 8
RP-RIGHT PARENTHESIS	11 5 8	AP-APOSTROPHE	0 6 8		

.008015,022029,033033N	1001	WORDMARK AND BUFFER TEST	1010C 0
.008015,022029,033033N	1001	SET WORDMARK CARD	1010C 0
L035089N N N	1001421		1010C 0
L067367,340344,348349,357361	1001,008012,001100118361080AB421/340080		1010C 0
L069404,377385,400404,405405	1001 8400S611BS88	/3 2/	1010C 0
L067439,413417,421428,432433	1001BS00S521/080B421L814817/332/L/53244		1010C 0
L072479,447454,455462,469476	1001M244288M2443322A455817M817479M817486,XXX		1010C 0
L061508,488492,494502,506508	1001V492XXX1.4762AV50633218455FT2		1010C 0
L070546,514521,528532,533540	1001B421DL810808M814572/332/L/98244M244288		1010C 0
L070584,554558,565569,573581	1001M244332,570A558572AV570,200V58533218554		1010C 1
L058610,587588,590591,596603	10012AV22AV28585BA59680886158071		1010C 1
L057635,615617,622624,631635	1001B585FLB514DN L810808/332/		1010C 1
L067670,643650,657661,662667	1001L879289A643808L811817B#802B671PB900		1010C 1
L070708,678685,690697,704709	1001A671817C817820B662/A690817C817823B670/		1010C 1
L068744,714719,726727,729734	1001B953PB650BN8/1817LFJB738R8#00A73881/		1010C 1
L068780,752757,764771,776781	1001C8178268729/A757817C817829B757/B#55R		1010C 1
L061809,786794,798738,807803	1001B719BB7988072B6438622DB348LL		1010C 1
L053829,812815,818821,824827	1001000200AAA1631910041044		1010C 1
L072869,001001,001001,001001	1001BUFFERED MACHINES PRINT AND CARRIAGE BUS		1010C 1
L072909AV870870,880900,905910	1001Y TEST. PRINT LATCH ERROR 1 B650BB926E		1010C 2
L072949,917918,922926,930930	1001M8982292/235B#94.719PRINT LATCH ERROR 2		1010C 2
L056973AV950950,953958,963970	1001 B650BB974EM9482292918		1010C 2
L068#09,978#00,#05#10,#10#10	1001.719CARRIAGE LATCH ERROR 1B719BB#26E		1010C 2
L072#49,#17#18,#22#26,#30#30	1001M9992322/235B786.786CARRIAGE LATCH ERROR		1010C 2
L058#75AV#50#50,#55#60,#65#72	1001 2 B719BB#76EM#512322#18		1010C 2
L066/09,#80#85,#90#94,#99/04	1001.786B#80PB#85RB6618#94PB#99RB719		1010C 2
L072/49,001001,001001,001001	10011234567890AVAVABCDEFGHIJKLMN OPQRSTUVWXYZAVAV		1010C 27
L072/89AV/50/50,/55/55,/55/55	1001AVAVAV ALTERNATE PRINT WORDMARKS + PRINT L		1010C 28
L055S12AV/90/90,S00S01,S05S12	1001LINE TEST. 2,049L077272		1010C 29
L062S42,S17S21,S21S21,S21S30	1001/2772421 002		1010C 30
/333080N		CLEAR WORDMARK CARD	1010C 31
.019Q27,031,038Q42B031T98GB400L046352BW04BS88		WORDMARK AND BUFFER TEST	1010C 32

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DATE	2-2-61	6-29-63	17.10.63				
ENG. CHG. NO.	110378	117628	TA1976				

