MASTER LEGEND FOR SEQUENCE CHARTS

1. RELAY OR OTHER APPARATUS OPERATIONS AND RELEASES ONLY ARE SHOWN.

2. VERTICAL PROGRESSION DOWNWARD SHOWS RELATIVE TIME PHASE OF RELAY OR OTHER APPARATUS MOVEMENTS (OPERATION OR RELEASE).

3. COORDINATES ARE USED TO LOCATE THE POSITION OF APPARATUS ON SC'S. THE HORIZONTAL COORDINATE IS ALPHABETICALLY DESIGNATED. THE VERTICAL COORDINATE IS NUMERICALLY DESIGNATED STARTING WITH 101 ON SHEET 1, 201 ON SHEET 2, ETC. THUS D304 MEANS VERTICAL COLUMN D, SHEET 3, HORIZONTAL LINE 4.

4. THE FOLLOWING TABLE SHOWS, ON A LINE BASIS, THE OPERATE AND RELEASE TIMES WHICH ARE USED FOR THE APPARATUS:

APPARATUS	OPERATE	RELEASE
ALL RELAYS EXCEPT SLOW OPERATE, SLOW RELEASE, TIMED AND MULTICONTACT	1 LINE	1 LINE
SLOW OPERATE RELAYS	2 LINES(MIN.)	1 LINE
SLOW RELEASE RELAYS	1 LINE	2 LINES (MIN.)
TIMED RELAYS, COLD CATHODE TUBES ETC.	SEE NOTE 11	SEE NOTE 11
MULTICONTACT RELAYS	2 LINES	1 LINE
SELECT MAGNETS	2 LINES	1 LINE
HOLD MAGNETS	2 LINES	1 LINE
PERFORATOR MAGNETS	2 LINES	2 LINES
OTHER APPARATUS	1 LINE	1 LINE

5. OPERATE SYMBOLS:

(A) ✕AL — AL RELAY OR OTHER APPARATUS COMES TO FULLY OPERATED CONDITION AT THIS POINT. FOR POLAR RELAYS WITHOUT BIASING SPRINGS, THE ARMATURE HAS MOVED TO FRONT OR LEFT CONTACT.

(B) RDR PIN ⊠ — READER PINS ARE MOVED TO PASS THROUGH THE PERFORATED HOLES IN TAPE AT THIS POINT. READER PIN CONTACTS ARE CLOSED ONLY IF A HOLE IS PERFORATED.

(C) ⊠ (B) TC — TC INTERRUPTER OR TIMER HAS CLOSED ITS B CONTACT.

6. RELEASE SYMBOLS:

(A) ┼AL — AL RELAY OR OTHER APPARATUS COMES TO FULLY RELEASED CONDITION AT THIS POINT. FOR POLAR RELAYS WITHOUT BIASING SPRINGS, THE ARMATURE HAS MOVED TO BACK OR RIGHT CONTACT.

(B) RDR PIN ⊠ — READER PINS ARE MOVED AWAY FROM THE TAPE AND ALL READER CONTACTS ARE OPENED AT THIS POINT.

(C) ⊠ (PU) TC — TC INTERRUPTER OR TIMER HAS OPENED ITS PU CONTACT.

7. COMBINED OPERATE AND RELEASE SYMBOL:

✕┼Z — Z RELAY OR OTHER APPARATUS HAS EITHER OPERATED OR RELEASED.

8. SYMBOL DESIGNATIONS:

THE OPERATE (✕) AND RELEASE (┼) SYMBOLS ARE USED IN CONJUNCTION WITH THE FOLLOWING DESIGNATIONS:

(A) RELAY WINDING DESIGNATIONS:

	EXPLANATION:
1) C-	ONE OR MORE OF CO TO C_n OR CA TO C_n
2) CO-9 OR CO-C_n	ALL OF CO TO C9 OR CD TO C_n INCLUSIVE
3) FA-D	ALL OF FA TO FD INCLUSIVE
4) A,C	BOTH A AND C
5) CB-(-1)	ALL CB- EXCEPT ONE
6) HG$\frac{2}{5}$	A COMBINATION OF "2 OUT OF 5"
7) L/R	EITHER L OR R OR ONE OF A SERIES L TO R
8) (TOP) MC	TOP HALF OF MC MULTICONTACT RELAY
9) (BOT.) MC	BOTTOM HALF OF MC MULTICONTACT RELAY
10) MC	BOTH HALVES OF MC MULTICONTACT RELAY

(B) OTHER APPARATUS DESIGNATIONS:

	EXPLANATION:
1) AR KEY	AR KEY CONTACT
2) A JACK	A JACK CONTACT
3) AL LAMP	AL LAMP
4) THOLD	T HOLD MAGNET
5) JSEL.	J SELECT MAGNET
6) USTEP 10/20	U STEP MAGNET. BRUSHES ARE IN CONTACT WITH BANK TERMINAL 10 OR 20
7) PAC MAG.	PAC MAGNET
8) A2 PERF.	A2 PERFORATOR MAGNET
9) VAR VARISTOR	VAR VARISTOR (✕ CONDUCTING, ┼ NON-CONDUCTING)
10) TWA TUBE	TWA TUBE
11) CL- PH. TRAN.	CL- PHOTO TRANSISTOR (✕ CONDUCTING, ┼ NON-CONDUCTING)

9. CONNECTING LINES:

(A) VERTICAL LINES ARE USED TO LINK CAUSES WITH EFFECTS ON SUCCEEDING LINES AS:

LINE 101 ✕A
LINE 102 ✕B

EXPLANATION: B RELAY HAS OPERATED ON LINE 102 AS RESULT OF RELAY A OPERATION ON LINE 101.

(B) HORIZONTAL AND VERTICAL LINE COMBINATIONS ARE USED AS FOLLOWS:

EXPLANATION:

┼ — CONNECTION BETWEEN LINES

┴ — NO CONNECTION BETWEEN LINES

(C) HORIZONTAL AND OBLIQUE LINES ARE USED TO CONNECT MULTIPLE CAUSES PRODUCING A COMMON EFFECT OR TO CONNECT MULTIPLE EFFECTS PRODUCED BY THE SAME CAUSE AS:

EXPLANATION:

LINE 101 ✕A ✕B
LINE 102 ✕C

C RELAY HAS OPERATED ON LINE 102 AS RESULT OF BOTH A AND B RELAY OPERATION ON LINE 101, NEITHER A NOR B RELAY OPERATION ALONE IS SUFFICIENT TO OPERATE C RELAY.

LINE 101 ✕A
LINE 102 ✕B ✕C

RELAYS B AND C HAVE OPERATED ON LINE 102 AS RESULT OF RELAY A OPERATION ON LINE 101.

A B C D
LINE 101 ✕HGK
LINE 102 A104
LINE 103 ✕LCK D101
LINE 104 ✕TK

TK RELAY HAS OPERATED ON LINE 104 AS RESULT OF OPERATION OF BOTH HGK ON LINE 101 AND LCK ON LINE 103. NEITHER HGK NOR LCK OPERATION ALONE IS SUFFICIENT TO OPERATE TK. THE DIAGONAL LINE MAY BE CONTINUOUS OR AS SHOWN. DESIGNATIONS A104 AND D101 REFER TO COORDINATE POSITIONS OF RELAYS.

(D) APPARATUS OPTIONS OR FUNCTIONAL OPTIONS ARE SHOWN BY A BREAK IN THE HORIZONTAL AND VERTICAL CONNECTING LINES.

LINE 101 ✕A ✕B ✕C
LINE 102 ✕D

EXPLANATION: D RELAY HAS OPERATED ON LINE 102 AS RESULT OF EITHER A, B, OR C RELAY OPERATION ON LINE 101.

FUNCTIONAL OPTIONS ARE EXPLAINED ON THE SC. IF A NOTE IS REQUIRED TO EXPLAIN THESE OPTIONS IT IS TO BE INTERPRETED AS PER NO. 14 ON OS 000-2.

10. ARROWHEADS:

ARROWHEADS ARE USED TO BLOCK AND LIMIT EFFECTS OF RELAY OPERATIONS ON EACH OTHER. THEY MAY BE PLACED AT THREE DIFFERENT POSITIONS ON CONNECTING LINES.

EXAMPLE: EXPLANATION:

(A) ✕A ✕B ✕C ✕D ✕E — D AND E RELAYS WILL NOT OPERATE UNTIL BOTH A AND B HAVE OPERATED, BUT C WILL OPERATE INDEPENDENTLY OF B.

(B) ✕A ✕B ✕C ✕D ✕E — E RELAY OPERATES FROM B ONLY; D FROM B AND A; AND C FROM A ONLY.

(C) ✕A ✕B ✕C ✕D ✕E — D RELAY WILL NOT OPERATE UNTIL BOTH B AND A HAVE OPERATED. ALSO E AND C WILL OPERATE FROM B INDEPENDENTLY OF A.

OR

✕A ✕B ✕C ✕D ✕E

(D) IN SOME CASES TWO ARROWHEADS MAY BE SHOWN AS:

✕A ✕B ✕C ✕D ✕E ✕F — D AND E RELAYS ARE DEPENDENT UPON OPERATION OF BOTH A AND B. ALSO, C WILL OPERATE FROM A INDEPENDENTLY OF B, AND F WILL OPERATE FROM B INDEPENDENTLY OF RELAY A.

11. THE TIME DELAY INTRODUCED BY A TIMED CIRCUIT IS SHOWN THUS:

EXAMPLE: EXPLANATION:

(A) LINE 101 ✕CWA
LINE 102 ═2 SEC. — TMA TUBE OPERATES 2 SECONDS AFTER CWA RELAY OPERATES.
LINE 103 ✕TMA TUBE

(B) LINE 101 ⊠HO
LINE 102 ═.041 SEC. — HO INTERRUPTER CONTACT IS CLOSED FOR APPROXIMATELY .041 SEC.
LINE 103 ⊠HO

12. A DOTTED VERTICAL LINE MAY DENOTE EITHER OF THE FOLLOWING:

✕A
✕C ✕B
✕D

1) INTERMEDIATE ACTION ALREADY SHOWN ELSEWHERE OR IRRELEVANT TO THE JOB SHOWN HERE.
2) INDEFINITE TIME INTERVAL.

13. PUNCH DESIGNATIONS AND LAMP INDICATIONS ARE SHOWN ON SEQUENCE CHARTS IN THE FOLLOWING MANNER:

1) A SOLID INVERTED TRIANGLE (▼) INDICATES THAT A PERFORATION IS MADE OR A LAMP IS LIGHTED IF A TROUBLE RECORD IS TAKEN AT THIS TIME.
2) A SOLID UPRIGHT TRIANGLE (▲) INDICATES THAT A PERFORATION IS NOT MADE OR A LAMP IS NOT LIGHTED IF A TROUBLE RECORD IS TAKEN AT THIS TIME.

EXAMPLE: EXPLANATION:

(A) ✕RK▼ / ✕RK▲ — RELAY AND PUNCH (OR LAMP) HAVE THE SAME RK DESIGNATION AND ARE UNDER CONTROL OF THE SAME CAUSE; OR THE PUNCH (OR LAMP) IS UNDER CONTROL OF THE RELAY.

(B) ✕PR2 ✕LC ▼PI / ┼PR2 ┼LC ▲PI — THE PUNCH (OR LAMP) HAS A DIFFERENT DESIGNATION FROM ITS CONTROLLING CAUSE.

14. ✕TS / ✕TVO(TRL) — THE CIRCUIT MOST FREQUENTLY USED IN A PARTICULAR SEQUENCE CHART IS IDENTIFIED BY AN ASTERISK OPPOSITE ITS SD NUMBER IN THE LIST OF DRAWINGS ABOVE THE TITLE BLOCK. NO CIRCUIT ABBREVIATIONS ARE SHOWN ON THE SEQUENCE CHART NEXT TO RELAYS ASSOCIATED WITH THIS CIRCUIT. THE CIRCUITS IN WHICH ALL OTHER RELAYS APPEAR ARE SHOWN IN BRACKETS ADJACENT TO THE RELAY DESIGNATIONS ON THE SEQUENCE CHART (SEE EXAMPLE).

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15. THIS LEGEND APPLIES, WITH SOME EXCEPTIONS, TO SEQUENCE CHARTS PROVIDED ON OS'S. SEE OS 000-2, NO. 13A.

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