TYPE N AND ON2 CARRIER TELEPHONE SYSTEMS
DEVIATION REGULATOR — PRELIMINARY TESTS
CHECK OF LOCAL CABLING, SPAN PADS AND ARTIFICIAL LINE SECTIONS

The input to a deviation regulator is connected directly from the output of an N carrier repeater. Span pads and artificial lines, if required, are connected between the deviation regulator output and the MDF or cable terminal.

In these tests measurements are made of the dc resistance of the cable pairs between the deviation regulator input and the preceding N carrier repeater, and between the deviation regulator output and the MDF or cable terminal. The resistance between the deviation regulator output and the MDF or cable terminal will include the resistance of the span pads and artificial line sections when they are provided. Fig. 1 shows the jack arrangements of the deviation regulators and the associated N carrier repeaters.

APPARATUS:

VOM

STEP	PROCEDURE
	Preliminary Tests and Inspections
1	Remove the +130V fuses from the deviation regulator and the N carrier repeaters under test.
2	When a deviation regulator is connected through an MDF to a cable pair the heat coils at the MDF must be removed and replaced with permanently soldered straps.
3	Remove the CONNECTOR plugs from jacks J1 and J2 on the deviation regulator.
4	With the VOM check for continuity between the following terminals on jacks J1 and J2.

J1 TERMINAL		J2 TERMINAL
0	and	0
1	and	1
3	and	3
4	and	4
9	and	9
12	and	12
14	and	14
15	and	15

5	Check to insure that none of the above terminals are grounded.

STEP	PROCEDURE
	Check of Local Cabling to Preceding N Carrier Repeater
6	Remove the CONNECTOR plugs from jacks J2 and J3 on the N carrier repeater which precedes the deviation regulator being checked. (There is one repeater and deviation regulator combination in each direction of transmission. See Fig. 1.)
7	Short-circuit the local cable pair terminals at jack J2 or J3 on the preceding N carrier repeater as follows:

REPEATER	TERMINALS
W-E	14 and 15
E-W	2 and 5

8	Connect the VOM to terminals 0 and 1 on jack J1 or J2 on the deviation regulator and measure the resistance of the local cabling to the preceding N carrier repeater.
9	The resistance of the local cabling as measured from terminals 0 and 1 of a deviation regulator to a short at the preceding N carrier repeater output terminals should be: ***Requirement:*** Approximately 5 ohms or less.
10	Repeat Steps 1 through 9 on the deviation regulator in the other direction of transmission.
	Check of Local Cabling to Cable Terminal — Including Span Pads and Artificial Lines When Used
11	At the MDF or cable terminal, short the cable pairs which have been assigned to the deviation regulators being tested.
12	Obtain the values of span pads and artificial lines which have been specified for each direction of transmission from the circuit layout card for the system.
13	Compute the value of resistance between the deviation regulator output and the MDF or cable terminal in each direction of transmission. The resistance of various size span pads and artificial lines is listed in Table A.

TABLE A

LOOP RESISTANCE OF SPAN PADS

SPAN PAD Db	RESISTANCE Ohms	SPAN PAD Db	RESISTANCE Ohms
2	31	14	181
4	62	16	195
6	90	18	209
8	116	20	222
10	141	22	230
12	163	24	239

LOOP RESISTANCE OF ARTIFICIAL LINES

ART. LINE Miles	RESISTANCE Ohms
1	62
2	82
4	204

STEP	PROCEDURE
14	Connect the VOM to terminals 14 and 15 on jack J1 or J2 on the deviation regulator in one direction of transmission and measure the resistance to the short on the MDF or cable pair. Repeat the test on the deviation regulator in the other direction of transmission. ***Requirement:*** The measured value of resistance should be a close approximation of the total resistance of the span pad and the artificial line, as given in Table A. Allow up to 5 ohms for local cabling when an MDF is used.
15	Restore the system to normal as follows: (a) Remove the shorts which were placed at the N carrier repeater output jack terminals. (b) Remove the shorts from the deviation regulator output cable pairs. (c) Replace the CONNECTOR plugs in the J jacks of the N carrier repeaters and the deviation regulators. (d) Replace all of the fuses in the deviation regulators and the N carrier repeaters under test.

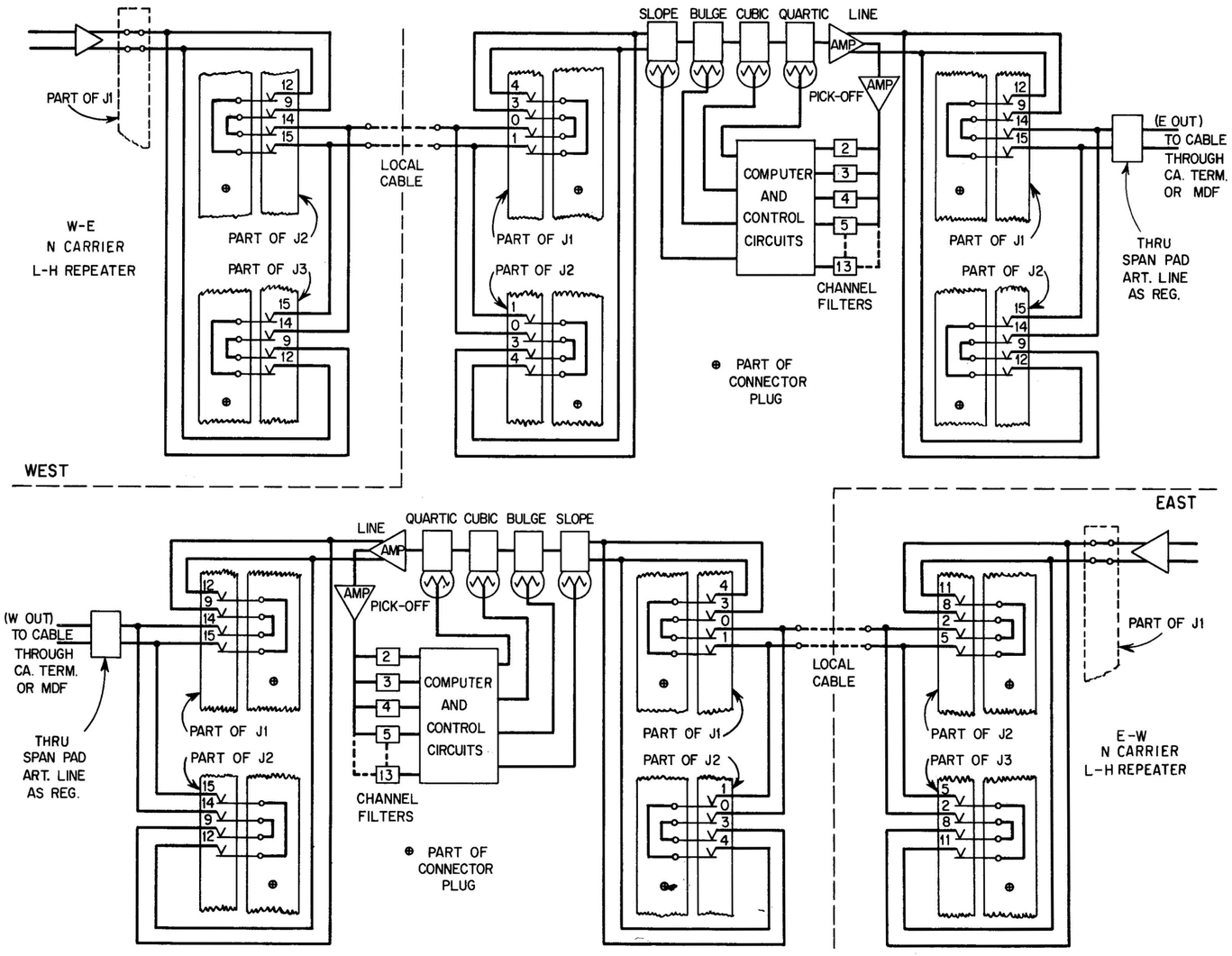

Fig. 1 — Deviation Regulator Jack Arrangements