SERIES 1000, TYPE 1001 CHANNELS FURNISHED TO A. C. NIELSEN CO.

1. GENERAL

1.01 This appendix contains descriptive, installation, and maintenance information for A. C. Nielsen Co., telemetering circuits.

2. DESCRIPTION OF CIRCUIT OPERATION

2.01 Circuits are controlled by a master station at Chicago (referred to by the customer as the Central Office). Each circuit may have up to 80 stations located in private homes.

2.02 An outlying station consists of a low-speed serial data transceiver connected to the telegraph circuit demarcation strip. This unit is polled once every five minutes throughout a 24-hour period.

2.03 The polling code consists of nine alternate spaces and marks. This binary code consists of a 125.0-millisecond space followed by four marks and four spaces. A 33.3-millisecond pulse (mark or space) represents a binary zero, and a 75.0-millisecond pulse (mark or space) represents a binary one (Fig. 1).

2.04 Each outlying station responds to its code after a pause of about 100 milliseconds with an 11-pulse reply consisting of alternate spaces and marks of either 33.3 milliseconds or 66.6 milliseconds. Each reply must contain at least two long pulses.

3. INSTALLATION

3.01 Stations are installed in private homes. Appointments should be met on time and installation work should be planned to cause minimum inconvenience to the homeowners.

3.02 DC loops should normally be terminated as covered in Section 460-110-101, Fig. 4. In addition, service orders may specify a temporary termination consisting of a 150-ohm resistor connected across the (G) and (R) terminals of the 42A demarcation block.

3.03 Transmission tests to and from the station should be made at 60 speed, using portable test equipment at the station. Tests from the STC toward the station should be made in the usual way. Where the need is indicated, loops should be loaded in accordance with standard practices.

3.04 The procedure to test from station toward STC is as follows.

(a) Connect the 911-type test message generator (or equivalent) source of signals.

(b) Transmit from the station and measure at the STC.

(c) Disconnect the source of signals.

3.05 On completion of tests, loops may be added to the circuit if the 150-ohm termination has been provided; completion reports should be forwarded in the usual way.

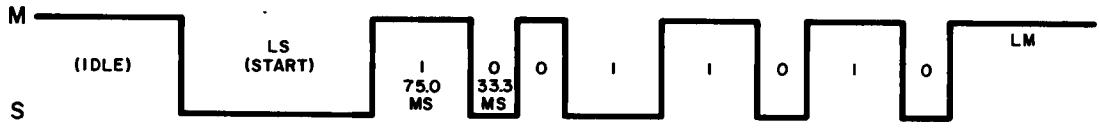
4. MAINTENANCE

4.01 All troubles normally will be reported by the customer to the Chicago STC because the stations have no indication of when they are polled or even if the circuit is operating. Generally, the troubles will be reported as "no response."

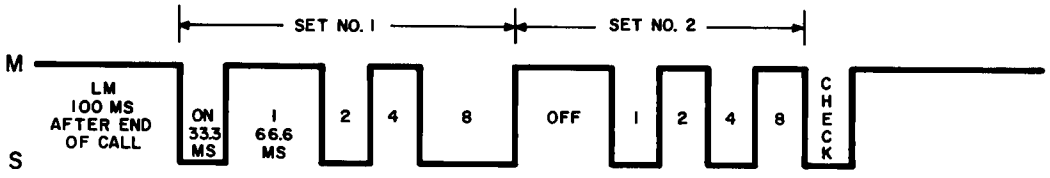
4.02 Reports will be relayed by the control office to the STC concerned if the trouble appears to be in the STC's serving link. With the STC observing signals from the station leg with a brush oscillograph, the control office will arrange to have the customer's central office send repeated scans to the station.

4.03 Signals from the station should be checked for distortion or for transients that might result in response failure.

CALL (CODE 10011010)



REPLY (CODE 01001100000)



REPLY INDICATES: SET 1 ON, TUNED TO CHANNEL 9 (1+8) SET 2 OFF.

NOTES:

1. MASTER STATION IS ARRANGED TO IDENTIFY 16 TO 50 MS AS SHORT PULSE (0), 50 TO 75 MS AS LONG PULSE (1).
2. THE OUTLYING STATION UNIT IDENTIFIES 16 TO 50 MS AS SHORT PULSE (0), 50 TO 100 MS AS LONG PULSE (1).
3. SIGNAL GENERATOR TOLERANCES MINUS SHORT AND LONG PULSES EQUAL 60.5 MS, CLOCKED BY 60-CYCLE ALTERNATING CURRENT.

Fig. 1—Signal Format, Typical Call and Reply