CUSTOMER LINE CARRIER SYSTEMS

ANACONDA S6A STATION CARRIER SYSTEM

TESTING, MAINTENANCE, AND

REPAIR BUREAU RECORDS

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1. General

1.01 The S6A Station Carrier System is a form of Outside Plant designed to provide economical exchange plant extension for expansion and upgrading of service.

1.02 This section is issued to replace Section 004-140-029SN which is replaced in its entirety.

2. Definitions

2.01 The "physical circuit" as used in this practice, shall be understood as the conditioned cable pair over which the carrier frequencies are transmitted and received.

2.02 The "system" includes all the carrier equipment, both in the central office and in the field assigned to a particular cable pair, and identified by a system number.

2.03 "Carrier derived line" shall be considered as one of the six customer lines assigned to a particular carrier system.

SECTION 004-234-001SN

3. Description

3.01 The S6A is a multi-channel carrier system capable of providing private line exchange service for six customers over one physical cable pair.

3.02 The system consists of two types of equipment.

1) Terminal equipment, which includes the central office terminal and customer terminals.

2) Line treatment equipment, which includes repeaters, line terminations, directional couplers, matching transformers, etc.

3.03 The system uses a single cable pair (non loaded) with repeaters spaced at 35 db intervals to compensate for cable losses.

3.04 The central office terminal consists of a common housing containing plug-in units for each channel, a line driver, and a power supply card. It has also, a block for cross connections to the assigned customers' lines, power supply and cable pair.

3.05 A voltage of 270 volts DC is applied to the tip and ring of the carrier pair by the central office terminal. This voltage powers the repeaters and customer terminals.

3.06 The customer channel unit can be in either a double unit housing, pole mounted, or in group applications, all channel units of the system can be mounted in a single cabinet.

3.07 Each customer terminal contains a long-life maintenance-free battery that is associated with the ringing circuit. It is kept charged from the central office when the system is in an idle condition.

4. Trouble Testing

4.01 The Testing Technician cannot test a carrier derived line in the usual manner. When the line is dialed up on a distributor, it will indicate a high resistance short circuit from the central office unit. The line can be rung and some analysis can be done by talking with the customer.

4.02 On receiving a report, the Testing Technician must determine if he has a single channel trouble, or if the system itself is in trouble. This can be determined by phoning other customers in the same system. If no one in the system can be reached it should be considered a system trouble.

5. Maintenance

5.01 The use of modular plug-in units simplifies maintenance to unplugging a defective module and plugging in a good one.

5.02 Where the S6A is used as a six channel system, the concept of a seventh channel as a spare maintenance channel reduces out-of-service time to a minimum. This channel is known as "Channel X" and is provided for in the central office terminal, thus affording a hot stand-by capability. To restore service to any of the six channels, all that is required is to exchange the C. O. transceiver of the channel in trouble with Channel X transceiver and to replace the subscriber end of the down channel with the Channel X subscriber terminal.

5.03 Replacement of defective channel units shall be considered a temporary clearance of the trouble report. After the channel unit has been repaired, the customer shall be restored to the originally assigned channel, and the line card returned to the file.

6. System Trouble

6.01 CENTRAL OFFICE ALARM - Cause of system alarms can be determined by opening the cable repair at the M.D.F.

6.02 CAUTION - Remove fuse F1 anytime it is necessary to remove the 270 volts from the cable pair.

6.03 The alarm light indicates a power feed irregularity. The alarm circuit is activated by excess current demand through the carrier line from the repeaters and customer terminals. The alarm circuit may also indicate a malfunction in the power supply unit or line driver unit. When the alarm light lights, substitution of these two units should be tried.

6.04 Trouble affecting all channels in the system will be given to the Cable Department for clearance. This includes responsibility for clearance of troubles in repeaters.

6.05 Testing Technicians and other craftsmen shall be aware that the Carrier System cable pair has been given Essential Service Line Protection (ESLP).

6.06 Cable breakdown sets will not be used unless all carrier equipment has been removed from the cable pair.

7. Channel Trouble

7.01 Trouble affecting one or more channels or customers shall be dispatched to and cleared by Service Technicians.

7.02 Testmen shall bring channel trouble to the attention of the central office technicians before dispatching to the field.

7.03 The central office technicians will replace the customer's channel card with the spare and the Testing Technician will again attempt to raise the customer. If the customer still cannot be called, a Service Technician shall be dispatched.

7.04 The Service Technician shall test for dial tone at the customer's channel unit and, if still no dial tone, both he and the C.O. Technician shall substitute Channel X modules for the units affected.

7.05 If dial tone was available on the Service Technician's arrival, the C.O. Technician should try the original card once more.

8. Trouble Beyond The Customer's Channel Unit

8.01 Trouble beyond the customer's channel unit will be localized and cleared by the Service Technician in the usual manner.

8.02 It should be understood the Service Technician must use his meter for determining trouble that might exist between the channel unit and the customer's premises since the testboard cannot test the line for him.

9. Repair Bureau Records

9.01 Line cards of customers assigned to carrier systems will show the system number and channel, as well as other facilities.

9.02 Carrier system line cards shall have the carrier system number, the assigned cable and pair, locations of repeaters, customer channel units, and carrier termination unit. It shall also include the wire numbers assigned to the six channels. Carrier System line cards shall also be noted ELSP.

9.03 Examples of a line card and a carrier system card are shown in Attachment 1.

9.04 A typical dual channel housing installation in shown in Attachments II and III, and a typical group housing application is shown in Attachment IV.