REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
2. INSERT THE ATTACHED PAGES INTO THE SECTION IN THEIR PLACE.
3. PLACE THIS PINK SHEET AHEAD OF PAGE 1 OF THE SECTION.

DATA SETS 201A1, A2 AND 201B1, B2

TRANSMITTER-RECEIVER

TEST PROCEDURES

1. GENERAL

1.001 This addendum supplements Issue 2 of Section 592-011-500. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 The purpose of this addendum is to change the 914B Data Test Set matrix shown in Fig. 9. The information contained in Fig. 10 is incorporated into Fig. 9 and Fig. 10 is deleted. The figure references in 3.16 and 3.17 are also changed.

Attached:

Page 17 dated October 1971, reissued
Page 18 dated October 1971, revised
Page 23/24 dated October 1971, revised
Page 25 dated October 1971, reissued to replace Page 27

3. TEST PROCEDURES USING 914B DATA TEST SET

The following changes apply to Part 3 of the section:

(a) Page 18—revised

(b) Fig. 9—revised

(c) Fig. 10—deleted

(i) Turn switch S4 on. Lamps DS4 and DS5 should also light. The counter should count rapidly.

(j) Set the COUNTER switch to INTERVAL X.1 if the data set is equipped with B option. Set the COUNTER switch to INTERVAL X10 if the data set is equipped with E option.

(k) Move the BIT RATE switch to 2000 (for Data Set 201A) or 2400 (for Data Set 201B).

(l) Press the RESET button and switch S1 to ON. The TP1 FIRST lamp should light. The counter will indicate the interval between request-to-send on and clear-to-send on.

Requirement:

E Option—15 to 25 on counter

B Option—6.5 to 9 on counter

Note: Because of the setting of the INTERVAL switch, the 914B DTS is measuring an interval of 6.5 to 9.0 msec between RS and CS (with B option) or 150 to 250 msec (with E option).

(m) Read the transmitter output level from the meter on the 914B. This reading should be approximately equal to the output level for which the data set is strapped.

(n) End of test. Proceed to the test of the automatic answer.

Four-Wire Continuous Carrier Test

3.11 Set up the equipment as shown in Fig. 6. The test is performed as follows:

(a) Disconnect the line wires (tip and ring). If the installation includes a D25C cord, connect the S-W cord lead to the BR-W cord lead. Connect a 600-ohm or 900-ohm resistor across the W-BR and BR-W cord leads. If the installation includes a D25D cord and a 66E3 connector block, connect terminal 14 to terminal 18 and connect terminal 16 to terminal 20. Place a 600- or 900-ohm resistor across terminals 14 and 16.

(b) Connect the meter input leads across the resistor placed on the connector block.

(c) Apply power to the data set and to the 914B DTS. Verify that the DS4, DS6, and NO DATA lamps are lighted and that the counter counts rapidly.

Note: Refer to Fig. 6 for a description of which interface lead is presented on which lamp.

(d) Turn switch S1 on. Lamps DS1, DS2, DS3, DS4, DS5, and DS6 should be lighted. The NO DATA lamp should extinguish and the counter should stop.

(e) Remove the pin from SD-16 on the matrix and place it in S4-2. Lamps DS1, DS2, DS3, DS6, and the NO DATA lamp should be lighted.

(f) Turn switch S4 on. Lamps DS4 and DS5 should light.

(g) Set the COUNTER switch to INTERVAL X.1 if the data set is equipped with B option. Set the COUNTER switch to INTERVAL X10 if the data set is equipped with E option.

(h) Move the BIT RATE switch to 2000 (for Data Set 201A) or 2400 (for Data Set 201B).

(i) Press the RESET button and switch S1 to ON. The TP1 FIRST lamp should light. The counter will indicate the interval between request-to-send on and clear-to-send on.

Requirement:

E Option—15 to 25 on counter

B Option—6.5 to 9 on counter

Note: Because of the setting of the INTERVAL switch, the 914B DTS is measuring an interval of 6.5 to 9.0 msec between RS and CS (with B option) or 150 to 250 msec (with E option).

(j) Read the transmitter output level indicated on the meter of the 914B DTS. This reading should be approximately equal to the output level for which the data set is strapped.

(k) End of test. Proceed to the automatic answer test.

Automatic Answer Test

3.12 This is a test of the leads controlling the automatic answer unit. If the data set fails this test, the automatic answer unit should be replaced. Set up the equipment as shown on Fig. 7. The test is performed as follows:

(a) Apply power to the data set and to the 914B DTS.

(b) Turn switch S1 on. Lamp DS3 should light indicating a voltage of +5.0 volts or greater on the interlock (IT) lead.

(c) Manually operate the R relay. The DS1 lamp should light indicating that the R relay is functioning properly.

(d) Manually operate the H relay. The DS2 lamp should light indicating that the H relay is functioning properly.

C. Maintenance Tests

3.13 This test procedure provides a method of isolating a data set trouble to a board or group of boards in the data set. This is done by analyzing the pattern of lighted and unlighted lamps which appear on the 914B DTS. Refer to Fig. 8 for the flow chart which indicates the order in which the lamps are to be analyzed.

3.14 Before attempting to use the flow chart (Fig. 8), the installation test must be set up. Refer to Part 3B (Installation Tests) and set up the equipment as instructed for the data set under test. The DS lamps are each connected to a different interface lead. The lamp will light when a positive voltage appears on that lead. The NO CLOCK lamp will light when the 914B DTS is not receiving a clock signal from the data set. The NO DATA lamp will light when data is not being received from the data set. Refer to Fig. 8 for a comparison of which DS lamp is connected to which interface lead.

3.15 The DS1 lamp is connected to the request-to-send lead and will light when switch S1 is turned on. When performing the installation test and a DS lamp fails to light or if the NO CLOCK or NO DATA lamps light when they should not, refer to Fig. 8 and replace cards as recommended. If the lamps then light in the proper sequence, proceed with the installation test. Refer to Section 592-011-300 for other procedure to be followed when investigating a trouble report.

D. End-to-End Test

3.16 This is a test of the data set transmitter and receiver and of the connecting facilities. In this test, Data Set 201-type is driven by a word generator in the 914B DTS. At the distant end, the data signals are fed either to a 904B or 904D data test center or to a remote Data Set 201-type. When the data set is being tested, the equipment is set up as shown in Fig. 9.

3.17 If the test is conducted using a data test center, the test will be coordinated under the direction of the data test center. In either case, the transmitting and receiving equipment setup is as shown in Fig. 9.

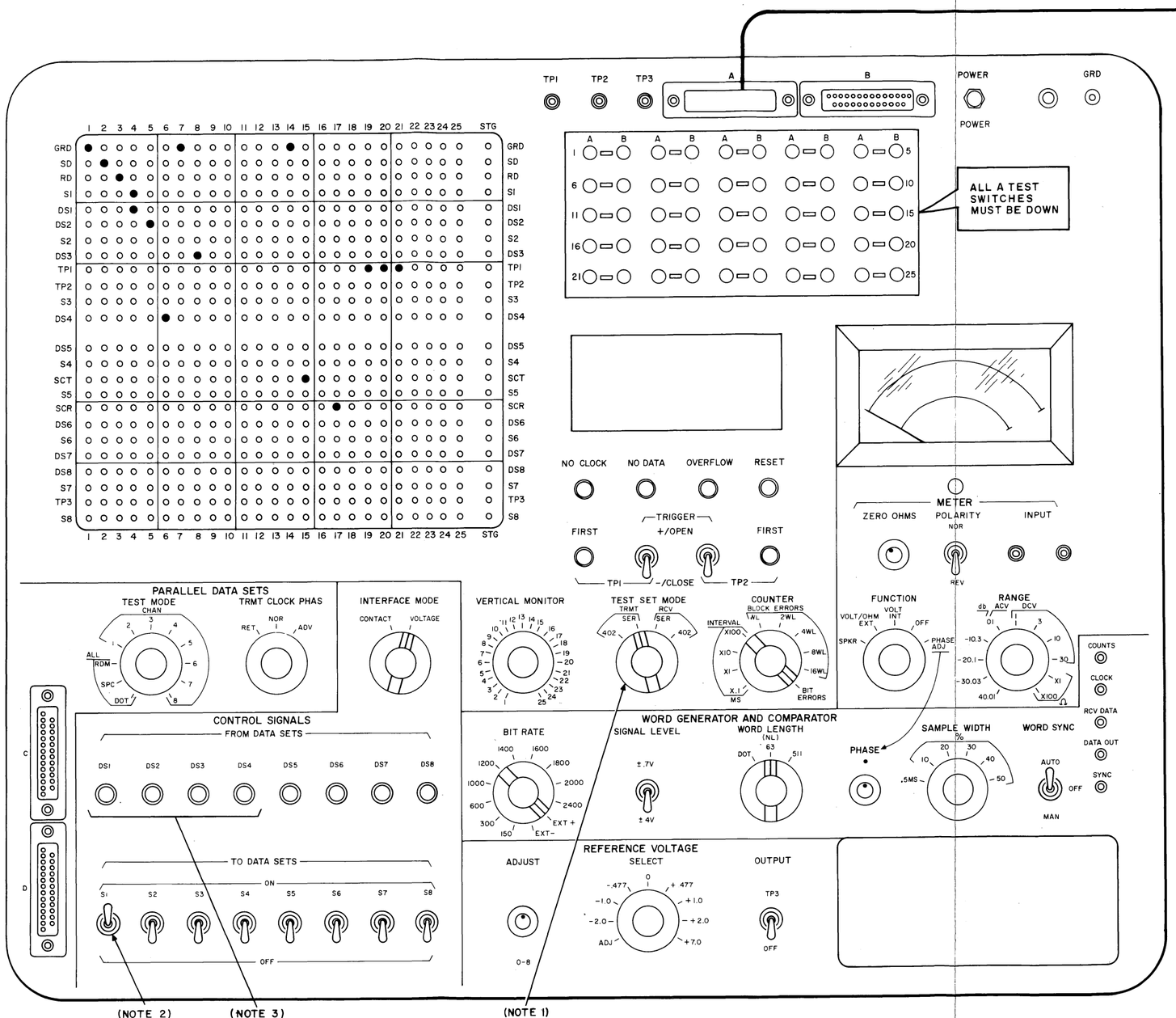
> ***Note:*** The procedure for testing from a 904 data test center is included in Section 668-102-500.

3.18 Apply power to the 914B DTS. On the switched telephone network, complete end-to-end tests consist of making two 15-minute calls and ten 1-minute calls. Establish voice communication in the manner normally used by the customer when placing data calls.

Take proper steps to insure that the customer is not billed for toll calls on test. Refer to Section 010-250-001.

3.19 Place calls alternately from each end except where one customer location will always be originating the call. Test calls should be placed during busy hours. This will make certain that all test calls do not use the same trunks and routes.

3.20 During the 15-minute calls, the receiving station should make a minute-by-minute count of errors as indicated by the counter on the 914B DTS. To prevent exceeding the counter capacity, the RESET button should be depressed at the end of each minute after the error count has been noted. Figure 4 illustrates a format which can be used for recording test data. The PEAK DISTORTION columns of Fig. 4 should be



NOTES:

1. THE TEST SET MODE SWITCH IS SET TO TRMT SER AT THE TRANSMITTING END OR TO REC SER AT THE RECEIVING END.
2. SWITCH S1 IS SET TO ON AT THE TRANSMITTING END AND MUST BE SET TO OFF AT THE RECEIVING END.
3. INTERFACE LEADS ARE PRESENTED ON THE DS LAMPS AS FOLLOWS:

DS1 DS2 DS3 DS4

RS CS CO IT

RS ON: INDICATES 914B HAS REQUESTED DATA SET TO TRANSMIT.
CS ON: INDICATES DATA SET HAS BEEN CONDITIONED TO TRANSMIT.
CO ON: INDICATES DATA SET RECEIVER RECOGNIZES CARRIER ON THE LINE.
IT ON: INDICATES DATA SET IS IN THE DATA MODE.

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Fig. 9—End-to-End Test, Transmitting Side

ignored for those tests. Occasionally, a noise burst or "hit" may cause the error counter to lose synchronization and indicate continuous errors. The interval up to and including the burst should be tabulated as "over 100 bit errors." The RESET button on the 914B DTS should be depressed to continue tests.

3.21 On private line systems, the length of the test period will be prescribed by the serving test center. Voice communication between terminals can be established over a separate facility if a DAS 804A or telephone set is not associated with the data set.

3.22 After a voice connection has been established, the attendant at the receiving end should verify that the CLOCK and DATA lamps on the 914B DTS are extinguished. This will indicate that a valid connection has been established. If either of the lamps light during the test, the receiving station attendant must contact the transmitting station attendant and agree to retest.

3.23 At the end of the prearranged time interval, voice communication is established again and an agreement is made to repeat the test in the opposite direction. The test is then repeated with the first transmitting station becoming the receiver and the first receiving station becoming the transmitter.

3.24 The test call requirements for the switched telephone network are as follows:

(a) For 15-minute calls:

(1) During ten of the fifteen 1-minute calls, no more than two bit errors per interval

(2) During three of the remaining five 1-minute intervals, no more than ten bit errors per interval

(3) During the remaining two 1-minute intervals, no error requirements.

(b) For 1-minute calls:

(1) During eight out of ten calls, no more than ten bit errors in any one minute.

3.25 Restore the equipment to operating condition. Refer to Section 592-011-200 for option strapping.