AMARS
NO. 1A AUTOMATIC MESSAGE ACCOUNTING RECORDING CENTER
PRIMARY DATA SET CONTROL AND CONNECTION CABINET INSTALLATION
(J1P040B CABINET WITH ISOLATION UNITS)

CONTENTS

1. GENERAL INFORMATION

1.1 The primary DSCC cabinet contains an alarm unit, an isolation status display panel, a data set interface and auxiliary function unit, a data set connection unit, and three isolation units. The cabinet provides data set control, data set interface, No. 1A AMARC status, and alarm conditions. Connections to the CPU's are made by cables per the Cable Plan, ED-5P285.

1.2 The installation and tests for this cabinet should be completed before proceeding to Sections 204B and 204C.

2. RECORDS AND REQUIREMENTS

2.1 The E.S.S. Trouble Record form (SD-4-1391) should be used to record all troubles which are encountered when running the tests in this Handbook Section.

3. TEST EQUIPMENT

3.1 1 ITE-5356 Digital Voltmeter (or equivalent).

4. INSTALLATION OF THE CABINET

4.1 Primary Data Set Control and Connection cabinet should be positioned in accordance with floor plan data requirements (824-100-105).

4.2 The two Lorain power supplies (or equivalent) should have been installed and tested. One LORAIN will power one tape cabinet, one processor cabinet, one disk cabinet, one memory cabinet, one asynchronous channel cabinet, and supplies power to the Primary DSCC power transfer unit. Each LORAIN power plant supplies power for the Recording Center through six to nine outlets. Verify that the output voltage at each outlet for each phase is 115 VAC. Measure voltage between phase and neutral leads.

4.3 The data sets associated with the No. 1A AMARC are housed in their own separate cabinet. The 202T data sets are housed by 40B1 mountings. The 202S data sets and the 801C automatic dialing units are housed in a 40A2 mounting. The 829A data auxiliary data sets are housed by 46A1 data mountings. These are installed and maintained by the telephone company.

5. CABLING

NOTE: In connecting the ED-5P284-30 cables to the male connector on a DEC or WECO circuit board, the triangle "▷ " on the cables (female) connector should be inserted to mate with the "A" designation on the circuit board. In connecting the cables to male connectors on frame units, the triangle "▷ " on both connectors should mate. When connecting to the isolation backplane, the traingle "▷" should always be on the bottom.

5.01 Remove power by turning the ON/OFF switch on both programmer's console to OFF position.

5.02   Verify that the following intraframe cable ED-5P284-30, GRP. 14 is properly connected.

DESIG	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA60	J6-21	6-21 on CC Unit	J1-24	P1-24 on ISO Display Panel

5.03   Verify that the following intraframe cables ED-5P284-30 are connected properly.

DESIG	GRP	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA28-0	13	J2-1	2-1 on CC Unit	J1-16A	P1 of JW175, 03-16 in DSIAFO
CA27-0	16	J2-5	2-5 on CC Unit	J1-16B	P1-16B on Alarm Unit
CA28-1	13	J6-1	6-1 on CC Unit	J1-11A	P1 of JW175, 03-11 in DSIAF1
CA27-1	16	J6-5	6-5 on CC Unit	J1-11B	P1-11B on Alarm Unit
CA24-0	13	J10-21	10-21 on CBO Unit	J1-20B	P1 of JW440, 03-20 in DSIAFO
CA24A-0	12	J14-21	14-21 of CBO Unit	J1-20A	P1-20A on DSC Unit
CA24-1	15	J18-21	18-21 of CB1 Unit	J1-07B	P1 of JW440, 03-07 in DSIAF1
CA24A-1	15	J22-21	22-21 of CB1 Unit	J1-07A	P1-07A on DSC Unit
CA21-0	13	J10-47	10-47 of CBO Unit	J1-19B	P1 of JW440, 03-19 in DSIAFO
CA21A-0	15	J14-47	14-47 of CBO Unit	J1-19A	P1-19A on DSC Unit
CA21-1	15	J18-47	18-47 of CB1 Unit	J1-08B	P1 of JW440, 03-08 in DSIAF1
CA21A-1	12	J22-47	22-47 of CB1 Unit	J1-08A	P1-08A on DSC Unit
CA26-0	13	J10-17	10-17 of CBO Unit	J1-22B	P1 of JW172, 03-22 in DSIAFO
CA26A-0	12	J14-17	14-17 of CBO Unit	J1-22A	P1-22A on DSC Unit
CA26-1	15	J18-17	18-17 of CB1 Unit	J1-05B	P1 of JW172, 03-05 in DSIAF1
CA26A-1	15	J22-17	22-17 of CB1 Unit	J1-05A	P1-05A on DSC Unit
CA23-0	13	J10-43	10-43 of CBO Unit	J1-21B	P1 of JW172, 03-21 in DSIAFO
CA23A-0	15	J14-43	14-43 of CBO Unit	J1-21A	P1-21A on DSC Unit
CA23-1	15	J18-43	18-43 of CB1 Unit	J1-06B	P1 of JW172, 03-06 in DSIAF1
CA23A-1	12	J22-43	22-43 of CB1 Unit	J1-06A	P1-06A on DSC Unit
CA22-0	13	J10-45	10-45 of CBO Unit	J2-22B	P2 of JW172, 03-22 in DS1AFO

5.03   (Cont'd)

DESIG	GRP	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA22A-0	15	J14-45	14-45 of CB0 Unit	J2-22A	P2-22A on DSC Unit
CA22-1	15	J18-45	18-45 of CB1 Unit	J2-05B	P2 of JW172, 03-05 in DSIAF1
CA22A-1	12	J22-45	22-45 of CB1 Unit	J2-05A	P2-05A on DSC Unit
CA25-0	13	J10-19	10-19 of CB0 Unit	J2-21B	P2 of JW172, 03-21 in DSIAF0
CA25A-0	12	J14-19	14-19 of CB0 Unit	J2-21A	P2-21A on DSC Unit
CA25-1	15	J18-19	18-19 of CB1 Unit	J2-06B	P2 of JW172, 03-06 in DSIAF1
CA25A-1	15	J22-19	22-19 of CB1 Unit	J2-06A	P2-06A on DSC Unit
CA20-0	14	J6-3	6-3 of CC Unit	J1-14B	P1 of JW443, 03-14 in DSIAF0
CA20-1	14	J2-3	2-3 of CC Unit	J1-13B	P1 of JW443, 03-13 in DSIAF1
CA8A-0	13	J14-5	14-5 on CB0 Unit	J11A-0	P11A-0 on DSIAF Unit
CA8A-1	13	J22-5	22-5 on CB1 Unit	J11A-1	P11A-1 on DSIAF Unit
CA9A-0	13	J14-9	14-9 on CB0 Unit	J12A-0	P12A-0 on DSIAF Unit
CA9A-1	13	J22-9	22-9 on CB1 Unit	J12A-1	P12A-1 on DSIAF Unit
CA10A-0	20	J14-13	14-13 on CB0 Unit	J5A-0	P5A-0 on DSC Unit
CA10A-1	21	J22-13	22-13 on CB1 Unit	J5A-1	P5A-1 on DSC Unit
CA11A-0	20	J14-29	14-29 on CB0 Unit	J6A-0	P6A-0 on DSC Unit
CA11A-1	21	J22-29	22-29 on CB1 Unit	J6A-1	P6A-1 on DSC Unit
CA12A-0	20	J14-39	14-39 on CB0 Unit	J7A-0	P7A-0 on DSC Unit
CA12A-1	21	J22-39	22-39 on CB1 Unit	J7A-1	P7A-1 on DSC Unit
CA13A-0	21	J14-63	14-63 on CB0 Unit	J8A-0	P8A-0 on DSC Unit
CA13A-1	21	J22-63	22-63 on CB1 Unit	J8A-1	P8A-1 on DSC Unit
CA16A-0	12	J14-55	14-55 on CB0 Unit	J3A	P3A on DSC Unit
CA16A-1	12	J22-55	22-55 on CB1 Unit	J3C	P3C on DSC Unit
CA17A-0	12	J14-53	14-53 on CB0 Unit	J4A	P4A on DSC Unit
CA17A-1	12	J22-53	22-53 on CB1 Unit	J4C	P4C on DSC Unit
CA61	22	J6-27-Q1	6-27-Q1 on CC Unit	J18-03-Q4	18-03-Q4 on CB1 Unit
CA62	23	J6-27-Q3	6-27-Q3 on CC Unit	J10-03-Q4	10-03-Q4 on CB0 Unit

NOTE 1:   P1 and P2 connectors are BERG connectors mounted on circuit packs in given locations.

NOTE 2:   Alarm circuit is J1P040BA Unit, DSIAF is J1P040BB Unit, DS Conn Circuit is J1P040BC Unit.

5.04 Verify that the following cabling has been properly connected between the Data Set Con-
      nection Circuit and the data set mountings. These cords are M25 cords.

CONNECTION

DESIG.	DS. CONN. CKT	TO	CHL #
CC20-0	P1-0	1st 202S Data Set	000
CC21-0	P2-0	1st 202T Data Set	001
CC22-0	P3-0	2nd 202T Data Set	002
CC23-0	P4-0	3rd 202T Data Set	003
CC24-0	P5-0	4th 202T Data Set	004
CC25-0	P6-0	5th 202T Data Set	005
CC26-0	P7-0	6th 202T Data Set	006
CC27-0	P8-0	7th 202T Data Set	007
CC28-0	P9-0	8th 202T Data Set	010
CC29-0	P10-0	9th 202T Data Set	011
CC30-0	P11-0	10th 202T Data Set	012
CC31-0	P12-0	11th 202T Data Set	013
CC32-0	P13-0	12th 202T Data Set	014
CC33-0	P14-0	13th 202T Data Set	015
CC34-0	P15-0	14th 202T Data Set	016
CC35-0	P16-0	15th 202T Data Set	017
CC36-0	P17-0	1st 801C ACU	000
CC20-1	P1-1	2nd 202S Data Set	020
CC21-1	P2-1	16th 202T Data Set	021
CC22-1	P3-1	17th 202T Data Set	022
CC23-1	P4-1	18th 202T Data Set	023
CC24-1	P5-1	19th 202T Data Set	024
CC25-1	P6-1	20th 202T Data Set	025
CC26-1	P7-1	21st 202T Data Set	026
CC27-1	P8-1	22nd 202T Data Set	027
CC28-1	P9-1	23rd 202T Data Set	030
CC29-1	P10-1	24th 202T Data Set	031
CC30-1	P11-1	25th 202T Data Set	032
CC31-1	P12-1	26th 202T Data Set	033
CC32-1	P13-1	27th 202T Data Set	034
CC33-1	P14-1	28th 202T Data Set	035
CC34-1	P15-1	29th 202T Data Set	036
CC35-1	P16-1	30th 202T Data Set	037
CC36-1	P17-1	2nd 801C ACU	020

5.05 Before connecting leads per Fig. 5.05 from the Alarm Sending Unit (J1P040-BA, SD-5P007-01)
      to the office alarm circuit, consult with TELCo personnel to see if these leads should be
      connected now or at a later date. During installation testing, alarms will be triggered.
      If these alarm leads are not connected at this point, correct voltages at terminals spec-
      ified in Fig. 5.05 will have to be verified instead of an audio verification. The sche-
      matic drawings for the specific office alarm circuit should be available at the instal-
      lation location.

FROM ALARM SENDING UNIT (J1P040BA)

LEAD DESIGNATION	TERMINAL STRIP	TERMINAL	TO
MF	T.S.(A)	58	OFFICE ALARM CKT.
MJR	"	48	"
MJV	"	38	"
MJVR	"	28	"
MN	"	18	"
MNR	"	57	"
MNV	"	47	"
MNVR	"	37	"

FIG. 5.05

5.06 Connect the following interframe cables (ED-5P284-30, GRP2) between Data Set Conn. Ckt. and Processor 0's Asynchronous Channel Cabinet. (See Cabling NOTE under Paragraph 5)

DESIG	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA30-0	J10-13	10-13 on CB0 Unit	J5B	DZ11B00 (MUX00) in J1P040K Cabinet (CP0)
CA31-0	J10-29	10-29 on CB0 Unit	J6B	DZ11B01 (MUX01)
CA32-0	J10-39	10-39 on CB0 Unit	J7B	DZ11B02 (MUX02)
CA33-0	J10-63	10-63 on CB0 Unit	J8B	DZ11B03 (MUX03)

5.07 Connect the following interframe cables (ED-5P284-30, GRP 3) between Data Set Conn. Ckt. and Processor 1's Asynchronous Channel Cabinet: (See Cabling NOTE under Paragraph 5)

DESIG	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA30-1	J18-13	18-13 on CB1 Unit	J5B	DZ11B00 (MUX00) in J1P040K Cabinet (CP1)
CA31-1	J18-29	18-29 on CB1 Unit	J6B	DZ11B01 (MUX01) in J1P040K Cabinet (CP1)
CA32-1	J18-39	18-39 on CB1 Unit	J7B	DZ11B02 (MUX02) in J1P040K Cabinet (CP1)
CA33-1	J18-63	18-63 on CB1 Unit	J8B	DZ11B03 (MUX03) in J1P040K Cabinet (CP1)

5.08 Connect the following interframe cables (ED-5P284-30, GRP 1) between DS Control and Connection Cabinet and Processor 0's Asynchronous Channel Cabinet: (See Cabling NOTE under Paragraph 5)

DESIG	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA38-0	J14-01	14-01 on CB0 Unit	J11B	P1 of DR11C(0) in J1P040K Cabinet (CP0)
CA39-0	J14-03	14-03 on CB0 Unit	J12B	P2 of DR11C(0) in J1P040K Cabinet (CP0)
CA36-0	J10-55	10-55 on CB0 Unit	J3B	P1 of DN11DA-0 in CP0
CA37-0	J10-53	10-53 on CB0 Unit	J4B	P1 of DN11DA-1 in CP0

5.09   Connect the following interframe cables (ED-5P284-30, GRP4) between DS Control and Con-
        nection Cabinet and Processor 1's Asynchronous Channel Cabinet: (See Cabling NOTE under
        Paragraph 5)

DESIG	STAMPED	CONNECTED TO	STAMPED	CONNECTED TO
CA38-1	J22-01	22-01 on CB1 Unit	J11B	P1 of DR11C(0) in J1P040K Cabinet (CP1)
CA39-1	J22-03	22-03 on CB1 Unit	J12B	P2 of DR11C(0) in J1P040K Cabinet (CP1)
CA36-1	J18-55	18-55 on CB1 Unit	J3B	P1 of DN11DA-0 in CP1
CA37-1	J18-53	18-53 on CB1 Unit	J4B	P1 of DN11DA-1 in CP1

5.10   Connect the following interframe cables (ED-5P284-30, GRP 25) between CC Unit and Pro-
        cessor 0's Cabinet:

DESIG	CONNECTED FROM	CONNECTED TO	TITLE
CA18-0	P1 on CC Unit	DMC11-MA transmit	TRNS CP0
CA19-0	P4 on CC Unit	DM11C-MA receive	RCV CP0

5.11   Connect the following interframe cables (ED-5P284-30, GRP 25) between CC Unit and Pro-
        cessor 1's cabinet:

DESIG	CONNECTED FROM	CONNECTED TO	TITLE
CA18-1	P3 on CC Unit	DMC11-MA transmit	TRNS CP1
CA19-1	P2 on CC Unit	DMC11-MA receive	RCV CP1

5.12   Connect the following interframe cable (ED-5P284-30, GRP 24) cable to the Primary Data Set
        Control and Connection Cabinet. Do not connect to C Cabinets at this time.

DESIG	STAMPED	CONNECTED TO
CA29	J6-19	6-19 on CC Unit of B Cabinet

5.13   Connect an M6AR cord between J8 connector on 230A repeater associated with alerting TTY
        and DL11A on CPU0. Connect the DL11B cable provided between J7 connector on 230A repeater
        associated with alerting TTY and DL11B on CPU1. Connect an M6AT cord between J5 connector
        on alerting 230A repeater and alerting TTY. (ACTIVE TTY).

5.14   Connect an M6AR cord between J8 connector on 230A repeater associated with analysis TTY
        and DL11A on CPU1. Connect the DL11B cable provided between J7 connector on 230A
        repeater associated with analysis TTY and DL11B on CPU0. Connect an M6AT cord between
        J5 connector on analysis 230A and analysis TTY. (STANDBY TTY)

5.15   Restore power by turning the ON/OFF switch on both processor's console to ON position.

6.   **FUSE AND POWER**

6.1   **Power Transfer Unit**

6.11 Power for the Primary Data Set Control and Connection Cabinet is supplied by the Power
      Transfer Unit. The Power Transfer Unit obtains power from a single-phase receptacle at
      the power distribution circuit. JO and J1 receptacles on the unit receive plugs from
      power strip within cabinet. Do not connect power to the Power Transfer Unit until spec-
      ified in the following paragraphs.

6.12 Remove all plugs from outlets on both sides of the Primary Data Set Control and Connection
      Cabinet.

6.13 Disengage all circuit packs in the DSIAF Unit (J1P040BB), the Data Set Connection Unit
      (J1P040BC), and the Isolation Units (J1P040CB0, CB1, and CC Units).

6.14 Connect power cord PO to the receptacle for the Data Set Control and Connection Cabinet
      associated with CPU0. Verify that 115VAC is obtained at all outlets on both sides of
      the Data Set Control and Connection Cabinet.

6.15 Remove power cord PO from receptacle.

6.16 Connect power cord P1 to the receptacle for the Primary Data Set Control and Connection
      Cabinet associated with CPU1. Verify that 115VAC is obtained at all outlets on both sides
      of the Data Set Control and Connection Cabinet.

6.17 Restore power cord PO to the receptacle for the Data Set Control and Connection Cabinet.

6.2   **Fan Plugs**

6.21 Connect fan plugs into outlet 9 on both sides of DSCC Cabinet.

6.3   **DISAF Power**

6.31 Verify that the fuse in the DSIAF-0 and DSIAF-1 power supply (HEWLETT PACKARD 62000S-D59)
      are in place.

6.32 Connect the plug of the power supply for DSIAF-0 to Outlet 8, CPU0 side.

6.33 Connect the plug of the power supply for DSIAF-1 to Outlet 8, CPU1 side.

6.34 Connect the +24V power supply plug to Outlet 1 on CPU1 side.

6.35 Use the Digital Voltmeter to adjust the ±12V and +5V outputs of the DISAF-0 and DSIAF-1
      AC to DC power supply (H.P. #62000S-D59) as accurately as possible (at least no greater
      then ±1%). Verify these voltages at the terminals given in Fig. 6.3. Refer to SD-
      5P006-01, FS-1 if required. Do <u>NOT</u> use frame ground in making the measurements. Use the
      isolated ground bus (or the ground on terminal 104 of locations 03-20 or 30-07)

6.36 Verify +28V±1V is obtained by measuring between the +28V and REF terminal blocks on the
      CC Unit.

6.37 Turn the two power switches on the Hewlett Packard Power Supply for the DSIAF circuits
      to the OFF position. Remove the +28V power supply plug from outlet 1. Insert all cir-
      cuit packs in each DSIAF unit (J1P040BB), the Data Set Connection Circuit unit (J1P040BC),
      and the Isolation Units (J1P040CB0, CB1 and CC Units). Restore power using the two
      switches in the Hewlett Packard supply and reinsert +28V plug.

6.4   Data Sets and Equipment should be powered from both outlets on Data Set Control and Con-
      nection Cabinet.

6.5   Control Console (J1P040E) for CPU0 should be powered from outlet 4 on Primary Data Set
      Control and Connection Cabinet.

6.6   Connect power for the 230A repeater for CPU0 to outlet 3 on Primary Data Set Control and Connection Cabinet.

TERMINAL ON DSIAF UNIT (J1P040BB)

VOLT	RANGE	UNIT	LOCATION	TERMINAL
+5	+4.95 to +5.05	DSIAF0	03-20	101
+5	+4.95 to +5.05	DSIAF1	03-07	101
-12	-11.85 to -12.15	DSIAF0	03-20	106
-12	-11.85 to -12.15	DSIAF1	03-07	106
+12	+11.85 to +12.15	DSIAF0	03-20	102
+12	+11.85 to +12.15	DSIAF1	03-07	102

NOTE: Output voltages must be adjusted as accurately as physically possible to +5V and
±12V. There is a potentiometer on the panel that can be used for adjustments.

FIG. 6.3

7.   ISOLATION CONTROL

7.1   Verify that the ENABLE LED's on the Isolation Display Panel for both circuits are illuminated. Verify that the POWER FAIL LED is extinguished.

7.2   Isolation Control - CPU0

7.21   Push the DEC key under CIRCUIT 0 down and press the EXECUTE key.

7.22   Push the DSIAF key under CIRCUIT 0 down and press the EXECUTE key. Verify that the NORMAL LED under CIRCUIT 0 is illuminated; all TN37 circuit packs in CB0 unit have green LED's illuminated and the green DEC0 and DSIAF0 LED's on TN38 circuit pack are illuminated.

7.23   Push the DEC key under CIRCUIT 0 up and press the EXECUTE key. The red LED above the DEC key should light; the red DEC0 LED on TN38 should light; and all the red ISO LED's on TN37 packs in CB0 unit should light.

7.24   Repeat Paragraph 7.21. Verify that the red LED above the DEC key extinguishes; the red DEC0 LED on TN38 extinguishes and the green LED illuminates; and the red ISO LED's on TN37 packs in CB0 unit extinguish and the green LED's illuminate.

7.25   Push the DSIAF key under CIRCUIT 0 up and press the EXECUTE key. The red LED above the DSIAF key should light; all red ISO LED's in CB0 unit except TN37 in position 07 should light; and red DSIAF0 and DEC0 LED's on TN38 light.

7.26   Push the DSIAF key under CIRCUIT 0 down and press the EXECUTE key. The red LED above the DSIAF key should extinguish; the red DSIAF0 and DEC0 LED's on TN38 should extinguish and the green LED's illuminate; and all red LED's on TN37 in CB0 unit should be extinguished and all green LED's on TN37 should be illuminated.

7.3   Isolation Control - CPU1

7.31   Push the DEC key under CIRCUIT 1 down and press the EXECUTE key.

7.32   Push the DSIAF key under CIRCUIT 1 down and press the EXECUTE key. Verify that the NORMAL LED under CIRCUIT 1 is illuminated; all TN37 circuit packs in CB1 unit have green LED's illuminated; and the green DEC1 and DSIAF1 LED's on TN38 circuit pack are illuminated.

7.33   Push the DEC key under CIRCUIT 1 up and press the EXECUTE key. The red LED above the DEC key should light; the red DEC1 LED on TN38 should light; and all the red ISO LED's on TN37 packs in CB1 unit should light.

7.34   Repeat Paragraph 7.31. Verify that the red LED above the DEC key extinguishes; the red DEC1 LED on TN38 extinguishes and the green LED illuminates; and the red ISO LED's on TN37 packs in CB1 unit extinguish and the green LED's illuminate.

7.35   Push the DSIAF key under CIRCUIT 1 up and press the EXECUTE key. The red LED above the DSIAF key should light; all red ISO LED's in CB1 unit except TN37 in position 07 should light; and red DSIAF1 and DEC1 LED's on TN38 light.

7.36   Push the DSIAF key under CIRCUIT 1 down and press the EXECUTE key. The red LED above the DISAF key should extinguish; the red DSIAF1 and DEC1 LED's on TN38 should extinguish and the green LED's illuminate; and all red LED's on TN37 in CB1 unit should be extinguished and all green LED's on TN37 should be illuminated.

7.4   Power Fail

7.41   Remove fuse from SN1 board. Verify that the POWER FAIL LED on Isolation Display Panel illuminates.

7.42   Restore fuse into SN1 board. Verify that the POWER FAIL LED on Isolation Display Panel extinguishes and the green LED on SN1 pack illuminates.

No changes indicated due
to extensive revision.

Manager, Product Engineering
Control Center

Reason for Reissue:
  Add Paragraph 7 and incorporate
  design changes.