

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-12

EE640-CA-MMI-120/E154 CPU
TO 31W2-2T-122-12

TECHNICAL MANUAL

DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
CENTRAL, MESSAGE SWITCHING, AUTOMATIC
AN/TYC-39(V)1
AND
CENTRAL OFFICE, TELEPHONE, AUTOMATIC
AN/TTC-39(V)2

AUTOMATIC DATA PROCESSING
ASSEMBLIES

DEPARTMENTS OF THE ARMY, NAVY, AND AIR FORCE

22 SEPTEMBER 1983

TECHNICAL MANUAL
NO. 11-5895-856-34-12
TECHNICAL MANUAL
EE640-CA-MMI-120/E154 CPU
TECHNICAL ORDER
TO 31W2-2T-122-12

DEPARTMENTS OF THE ARMY
THE NAVY, AND
THE AIR FORCE

Washington, DC, 22 September 1983

**DIRECT SUPPORT AND GENERAL SUPPORT
MAINTENANCE MANUAL
FOR
CENTRAL, MESSAGE SWITCHING, AUTOMATIC
AN/TYC-39(V)1
AND
CENTRAL OFFICE, TELEPHONE, AUTOMATIC
AN/TTC-39(V)2**

**AUTOMATIC DATA PROCESSING
ASSEMBLIES**

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in back of this manual direct to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: DRSEL-ME-MP, Fort Monmouth, New Jersey 07703.

For Air Force, submit AFTO Form 22 (Technical Order System Publication Improvement Report and Reply) in accordance with paragraph 6-5, Section VI, T.O. 00-5-1. Forward direct to prime ALC/MST.

For Navy, mail comments to the Commander, Naval Electronics Systems Command, ATTN: ELEX 8122, Washington, DC 20360. In either case, a reply will be furnished direct to you.

TABLE OF CONTENTS**VOLUME 12 TM 11-5895-856-34-12**

Card Cage Assembly "A", Interface Control Unit - R.H., Wire List, String (149016-800)

This volume is part of a 24-volume set covering the direct support and general support maintenance of the automatic data processing assemblies. This volume contains the string wire list for the right-hand card cage assembly "A" of the interface control unit, drawing number 149016-800. Refer to volume 1 of this series (TM 11-5895-856-34- 1) for an explanation of how to use this wire list as well as other lists contained in the set.

NOTE

The pages in volumes 2 through 24 of TM 11-5895-856-34 have been numbered in a special manner. Pages within these volumes are found by keying to two page identifiers: the drawing number and the page number. To find the page that you desire within the volume, follow the steps listed below:

1. Find the applicable wire run list in the table of contents and note the applicable drawing number.
2. Look through the pages of the volume until you find the particular drawing number of the wire run list that you seek. This will insure that you are in the correct wire run section.
3. Go through these pages until you find the page number you are looking for within this particular wire run list.

Remember, pages in the volumes cited above are found by keying to the drawing number applicable to a particular wire run list, as well as, a page number. Make sure you are on the correct page by checking both page identifiers.

**CARD CAGE ASSEMBLY "A", INTERFACE CONTROL UNIT
- RIGHT HAND
STRING WIRE LIST
149016-800**

NOTES: UNLESS OTHERWISE SPECIFIED

1. REFERENCE TO SHEET 3 FOR DEFINITION OF FIELDS.
2. REFERENCE TO SHEET 4 FOR CONFIGURATIONS OF SHIELD AND WIRE TERMINATIONS.
3. REFERENCE TO SHEET 5 FOR WIRE CODE DEFINITIONS.
4. REFERENCE TO SHEET 6 FOR WIRE PARTS LIST.
5. ALL ABBREVIATIONS PER MIL-STD-12.
6. THROUGHOUT THE BODY OF THIS DOCUMENT THE UNIT NAME IS REFERRED TO AS: CARD CAGE ASSY, A, IFCU.

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

1. **Record Number** - A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix** - An assembly alphanumeric to be used when a wire terminates in two assemblies. This number will be the reference designation as required by USAS Y32.16-1968.
3. **Connector** - Any type of terminating point, plug, receptacle, etc. Designations are in accordance with USAS Y32.16-1968.
4. **Pin** - Exact terminating point of the respective connector. Designations are unique:
 - A. SHXXXX indicates the junction of a shield and a pigtail, the four digits to the right are the wire identity of the shielded wire.
 - B. JCT indicates a common point of two or more shield pigtails.
 - C. Jacket: the terminology used when describing the line that defines the identification of a shielded wire.
5. **Sh Fg** - References a graphic representation showing how a shielded wire or coax is to be terminated. A number in this field indicates the level of automatic wire wrapping.
6. **Multi Group** - Associates wires of a group such as "twisted wire" or "shielded wire". Jacket, pigtails and center conductors will be shown as a common group.
7. **Wire Code** - A three-digit code for wire type and gage or bus bar.
8. **Wire Color** - Standard RETMA color code.
 - A. Base Stripe Tracer.
 - B. Stripe, Tracer 1 and Tracer 2 if the digit to the left is other than 9 and the two positions to the right are not blank and not equal. The Base Color is understood to be white.
9. **Wire Ident** - A number used for reference to differentiate one wire from another. This number will be used to identify the wire when specified in the wire list sleeve code field.
10. **Spc Inst** - A code which indicates that a wire must be given special attention as follows:
 - A. Direct routing, no service loops, no harnessing.
 - B. See general notes or instruction pages.
 - C. See general notes or instruction pages.
 - D. See general notes or instruction pages.
 - E. See general notes or instruction pages.
 - F. See signal description.
 - G. This connection does not go directly to the "TO" connector, but intersects a line going to the "TO" connector.
 - H. See special routing page.
 - I. Junction point for multilayer laminated board (MLB) connection.
 - J. Denotes a bus reference point.
 - K. Blank out "TO" connector and pin.
 - L. Will cause a signal name of three characters or less to be entered in the string list.
 - M. Will cause a record to be omitted from the string list. (This record will print in the connector list.)
 - N. Will suppress printing the wire identity in the harness string and double entry list.
 - P. Will cause the equation to be used as the signal name for sorting purposes only in the string list.

Drawing No.
149016-800
Rev. E, sheet 2

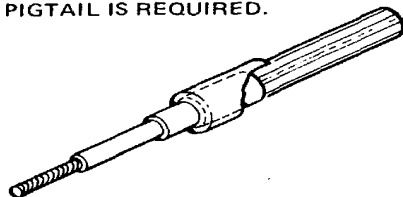
H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS - Continued

- Q. Will cause an equation record to be omitted from logic listing.
 - R. Will suppress printing the "FROM/TO" pin number in the string and connector lists.
 - S. Do not move record number to the ident field for an ADD transaction in the harness string and double entry only. (Use only when adding a file.)
 - T. Twist wire code.
 - U. Not available.
 - V. See general notes or instruction pages.
 - W. Fixed wire length submitted.
 - X. Sequence of string is to be left as is.
 - Y. See general notes or instruction pages.
 - Z. Will suppress printing of the "FROM" pin.
10. **Misc** - Unless otherwise noted, the number 1 indicates a pre-wired connector.
 11. **Signal** - An alphanumeric signal name, mnemonic where feasible, which identifies one specific function from another.
 - SPP - Denotes an available termination.
 - SPF - Denotes an unwired termination which has an assigned function.
 - SPW - Denotes a non-functional wire which is terminated at one or both ends.
 - SPO - Denotes a spare output of a circuit.
 - DNW - Indicates that a termination may not be wired.
 - SPA - Denotes an unassigned circuit, as one of a group on a printed circuit board.
 - SPI - Denotes a spare input of a circuit.
 - SPG - Denotes an unassigned logic gate, as one of a group on a printed circuit board.
 - SPR - Denotes a spare resistor.
 - SPD - Denotes an unassigned input diode of an assigned logic gate.
 12. **Seq No.** - A number which, in conjunction with SIGNAL, allows a signal string to be consistently printed in a given order.
 13. **Equation** - A mnemonic name assigned to each gate of an element.
 14. **Term** - An "OR" function composed of one or more factors.
 15. **Factor** - A specific input to a logical gate or active element.
 16. **Ckt or Chip Type** - Denotes a specific circuit board type.
 17. **Group** - Denotes a specific circuit on a printed circuit board.
 18. **Load or Power Plane** - Denotes the current draw in milliamps by a specific circuit or voltage.
 19. **AND Test Point** - Denotes the input test point for a specific circuit on a printed circuit board.
 20. **OR Test Point** - Denotes the output test point for a specific circuit on a circuit board.
 21. **Signal Description** - A written description or name of a signal or voltage.
 22. **ECO No.** - A letter number combination to show the Engineering Change Order level of that particular wire list record.

Drawing No.
149016-800
Rev. E, sheet 3

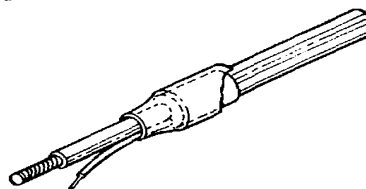
SHIELD FIGURE A

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
NO PIGTAIL IS REQUIRED.



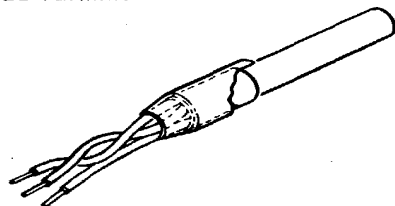
SHIELD FIGURE B

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
FRONT PIGTAIL IS REQUIRED.



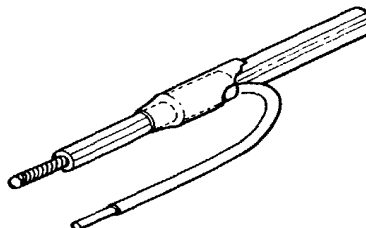
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



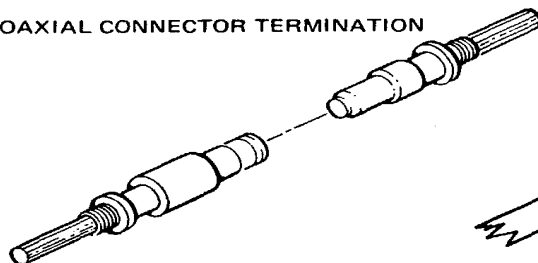
SHIELD FIGURE C

SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
A REAR PIGTAIL IS REQUIRED.



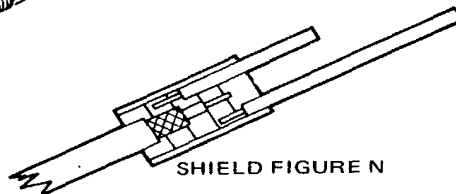
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



SHIELD FIGURE N

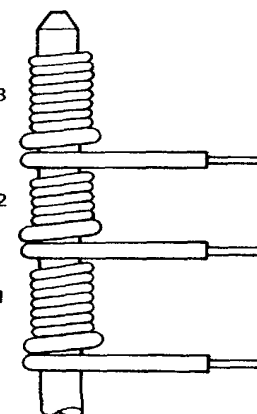
TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



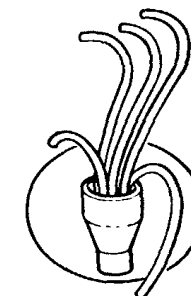
SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

SHIELD FIGURE NO. 1



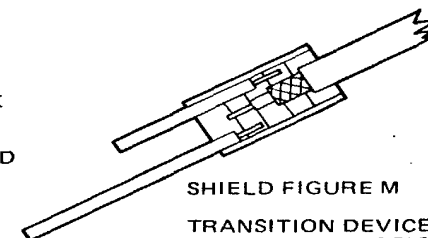
SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP



SHIELD FIGURE X
SHIELDED WIRE
PIGTAILS-HYBRID

SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



WIRE CODE DEFINITION			WIRE CODE DEFINITION		
Type	Description	AWG	Type	Description	AWG
1 = Polyvinylidene Fluoride (PVF) (Kynar)	1 = Buss Wire	A = 32	*F = MIL-C-17/94 (formerly MIL-C-17/68)	F = Tw Pr, Shielded	R = 2
2 = Teflon ET	2 = High Voltage	B = 30	*G = 898008-2	G = Tw Tpl, Stranded	S = 1
3 = Teflon E	3 =	C = 28	*H = 898008-1	H = Tw Tpl, Solid	T = 0
4 = Teflon EE	4 =	D = 26	*J = MIL-C-17/29	J = Tw Tpl, Shielded	U = 00
5 = Fluorinated Ethylene Propylene (FEP), Type K	5 = Integral Lead	E = 24	*K = MIL-C-17/30	K = Tw Quadr, Stranded	V = 000
6 = FEP, Type KT	6 = Auto Wire Wrap	F = 22	*L = MIL-C-17/79	L = Tw Quadr, Solid	W = 0000
7 = Special Condition	7 =	G = 20	*M = MIL-C-17/74	M = Tw Quadr, Shielded	X = Coax
8 = Polyvinyl Chloride (PVC) with Nylon Jacket, Type D	8 =	H = 18	*N = MIL-C-17/86	N = Tw Six Conductor, Stranded	Y =
9 = MIL-W-81044/12	9 =	I = 16	*P = MIL-C-17/28	P =	Z =
0 = Buss or Integral	0 = Special	J = 14	*R = 898008-4	R =	1 =
A = PVC without Jacket, Type B	A = Single Stranded	K = 12	*S = MIL-C-17/6	S =	2 =
B = PVC with Jacket	B = Single Solid	L = 10	*T = 898059-0001	T =	3 =
C = MIL-W-22759/1	C = Single Shielded	M = 8	U = 898017-1	U =	4 =
D = MIL-W-5086/1	D = TW Pr, Stranded	N = 6	V = 898017-2	V =	5 =
E = MIL-W-5086/2	E = Tw Pr, Solid	P = 4	W = 898007-1 thru -4	W = 70 Ohm Coax	6 =
			X = 898004, Type B	X = 50 Ohm Coax	7 =
			Y = 898004, Type D	Y = 75 Ohm Coax	8 =
			*Z = MIL-C-17/94	Z = 95 Ohm Coax	9 = Spcl
			*I = MIL-C-17/118		0 = Int Lead

NOTES: *1. Coax.

2. The word "BAR" in the Code Field indicates an electromechanical connection made possible by buss strips. Printed circuitry or power/ground planes will be coded "BUS" in the Code Field if required.

Drawing No.
149016-800
Rev. E, sheet 5

PARTS LIST					CONTRACT NUMBER	CODE IDENT 13973	PL 149016-800	REVISION E	
TITLE CARD CAGE ASSEMBLY 'A', INTERFACE CONTROL UNIT-RH, WIRE LIST							SHEET 6		
ITEM NO.	FEET OF WIRE REQD	CODE IDENT	PART OR IDENTIFYING NUMBER	DRAWING OR DOCUMENT NUMBER	NOMENCLATURE OR DESCRIPTION	REF SYM	TIMES USED	WIRE CODE	LINE REV
1.	4		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (WHITE)		5	1B3	
2.	4		898042-0003		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (BLACK)		1	1BD	
3.	32		898042-0004		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (RED)		8	1BD	
4.	4		898042-0002		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (WHITE)		1	1BD	
5.	16		898042-0034		CABLE, ELEC, TWISTED TWO CONDCT, 250V, PVF INSUL 26 GAGE (BLACK, RED)		5	1ED	
6.	9000		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (WHITE)		9030	16B	

05RES
7

Address	Hex	Dec	Hex	Dec	Label	Label	Label
03555	XA146	43	XA547	80	198 9	+05RES	00C
00015	XA547	80	XA547	79	168 9	+05RES	080
00016	XA547	79	XA544	70	168 9	+05RES	085
00019	XA544	70	XA544	69	168 9	+05RES	100
00020	XA544	69	XA544	59	168 9	+05RES	105
00021	XA544	59	XA544	60	168 9	+05RES	110
00022	XA544	60	XA544	50	168 9	+05RES	115
00023	XA544	50	XA544	49	168 9	+05RES	120
00024	XA544	49	XA544	33	168 9	+05RES	125
00025	XA544	33	XA544	34	168 9	+05RES	130
00026	XA544	34	XA544	22	168 9	+05RES	135
00027	XA544	22	XA544	21	168 9	+05RES	140
00028	XA544	21	XA544	13	168 9	+05RES	145
00029	XA544	13	XA544	14	168 9	+05RES	150
00030	XA544	14	XA544	04	168 9	+05RES	155
00031	XA544	04	XA544	03	168 9	+05RES	160
00032	XA544	03	XA442	03	168 9	+05RES	165
00047	XA442	03	XA442	04	168 9	+05RES	200
00048	XA442	04	XA442	14	168 9	+05RES	205
00045	XA442	14	XA442	13	168 9	+05RES	210
00046	XA442	13	XA442	21	168 9	+05RES	215
00043	XA442	21	XA442	22	168 9	+05RES	220
00044	XA442	22	XA442	34	168 9	+05RES	225
00041	XA442	34	XA442	33	168 9	+05RES	230
00042	XA442	33	XA442	49	168 9	+05RES	235
00039	XA442	49	XA442	50	168 9	+05RES	240
00040	XA442	50	XA442	60	168 9	+05RES	245
00037	XA442	60	XA442	59	168 9	+05RES	250
00038	XA442	59	XA442	69	168 9	+05RES	255
00035	XA442	69	XA442	70	168 9	+05RES	260
00036	XA442	70	XA442	80	168 9	+05RES	265
00033	XA442	80	XA442	79	168 9	+05RES	270
00034	XA442	79	XA346	79	168 9	+05RES	275
50009	XA346	79	XA346	80	168 9	+05RES	300
50008	XA346	80	XA346	70	168 9	+05RES	305
50007	XA346	70	XA346	69	168 9	+05RES	310
50006	XA346	69	XA346	59	168 9	+05RES	315
50005	XA346	59	XA346	60	168 9	+05RES	320
50004	XA346	60	XA346	50	168 9	+05RES	325
50003	XA346	50	XA346	49	168 9	+05RES	330
50002	XA346	49	XA346	33	168 9	+05RES	335
50017	XA346	33	XA346	34	168 9	+05RES	340
50016	XA346	34	XA346	22	168 9	+05RES	345
50015	XA346	22	XA346	21	168 9	+05RES	350
50014	XA346	21	XA346	13	168 9	+05RES	355
50013	XA346	13	XA346	14	168 9	+05RES	360
50012	XA346	14	XA346	04	168 9	+05RES	365
50011	XA346	04	XA346	03	168 9	+05RES	370

**** SIGNAL (+05RES) IS ON THE NEXT PAGE ****