

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-9
EE640-CA-MMI-090/E154 CPU
TO 31 W2-2T-122-9

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

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TECHNICAL MANUAL
NO. 11-5895-856-34-9
TECHNICAL MANUAL
EE640-CA-MMI-090/EI 54 CPU
TECHNICAL ORDER
TO 31 W2-2T-1 22-9

DEPARTMENTS OF THE ARMY
THE NAVY, AND
THE AIR FORCE

Washington, DC, 22 September 1983

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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.

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VOLUME 9 TM 11-5895-856-34-9

Card Cage Assembly, Interface Control Unit - R.H., Wire List, String (149015-800)

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 of the interface control unit, drawing number 149015-800. 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, INTERFACE CONTROL UNIT
- RIGHT HAND
STRING WIRE LIST
149015-800**

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 ASSEMBLY IFCU.

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

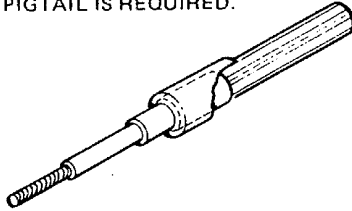
1. **Record Number** - A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix** - An assembly alphanumeric to be used when a wire terminates in two assemblies. 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 multi-layer 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.

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.

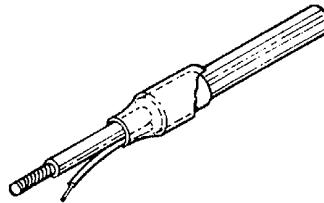
SHIELD FIGURE A

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



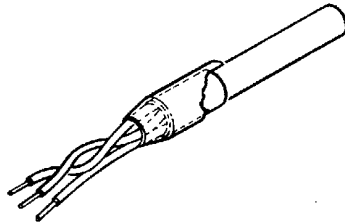
SHIELD FIGURE B

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



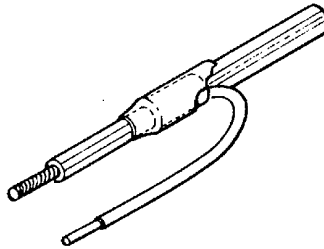
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



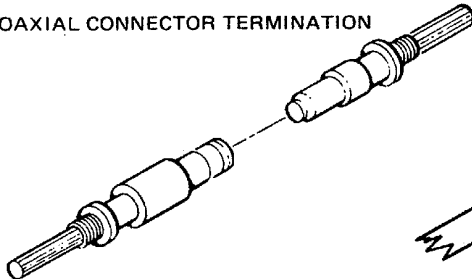
SHIELD FIGURE C

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



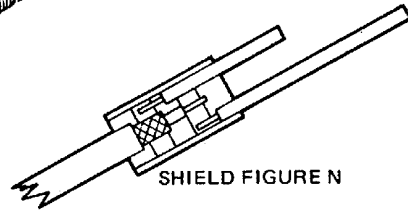
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



SHIELD FIGURE N

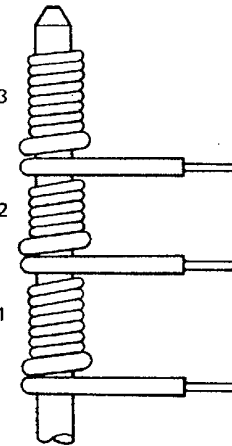
TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

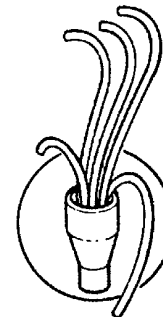
SHIELD FIGURE NO. 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

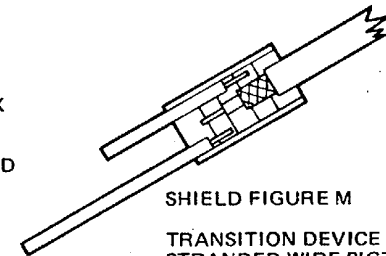
SHIELD FIGURE X

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

PARTS LIST					CONTRACT NUMBER	CODE IDENT	PL	REVISION	
							13973	149015-800	C
TITLE								SHEET	
CARD CAGE ASSEMBLY, INTERFACE CONTROL UNIT-R.H., WIRE LIST								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.	2		898042-0003		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (BLACK)		1	1BD	
2.	14		898042-0004		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (RED)		8	1BD	
3.	2		898042-0002		WIRE, ELEC, 250V, PVF INSUL 26 GAGE (WHITE)		1	1BD	
4.	10		898042-0034		CABLE, ELEC, TWISTED TWO CONDCT, 250V, PVF INSUL 26 GAGE (BLACK, RED)		6	1ED	
5.	10,100		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (WHITE)		10111	16B	
6.	2		898041-0002		WIRE, ELEC, 250V, PVF INSUL 30 GAGE (WHITE)		1	1BB	

H78-14 1

DATA SYSTEMS

DRAWING NUMBER 149015-800
UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY IFCU

STRING

UNIT ASSEMBLY NO. 149015
FILE IDENT T39C1FC5

REV C
DATE 09-03-82

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RECORD NUMBER	PREFIX	CONNECTOR	PIN	TO	PREFIX	CONNECTOR	PIN	WIRE	CODE	COLOR	IDENT	SIGNAL	SEQ NO	EQUATION	TERM	FACTOR	CKT OR CHIP TYPE	GROUP	LOAD OR POWER PLANE	TEST POINTS AND OR	SIGNAL DESCRIPTION	ECO NO
36551		XA146	39		XA144	80		168	9			+05RES	00F				MTS					
33001		XA144	80		XA144	79		168	9			+05RES	01				RR4	HP				
33002		XA144	79		XA144	69		168	9			+05RES	02				RR4	HP				
33003		XA144	69		XA144	70		168	9			+05RES	03				RR4	GP				
33004		XA144	70		XA144	60		168	9			+05RES	04				RR4	GP				
33005		XA144	60		XA144	59		168	9			+05RES	05				RR4	FP				
33006		XA144	59		XA144	49		168	9			+05RES	06				RR4	FP				
33007		XA144	49		XA144	50		168	9			+05RES	07				RR4	EP				
33008		XA144	50		XA144	34		168	9			+05RES	08				RR4	EP				
33009		XA144	34		XA144	33		168	9			+05RES	09				RR4	DP				
33010		XA144	33		XA144	21		168	9			+05RES	10				RR4	DP				
33011		XA144	21		XA144	22		168	9			+05RES	11				RR4	CP				
33012		XA144	22		XA144	14		168	9			+05RES	12				RR4	CP				
33013		XA144	14		XA144	13		168	9			+05RES	13				RR4	BP				
33014		XA144	13		XA144	03		168	9			+05RES	14				RR4	BP				
33015		XA144	03		XA144	04		168	9			+05RES	15				RR4	AP				
33016		XA144	04		XA244	03		168	9			+05RES	16				RR4	AP				
44015		XA244	03		XA244	04		168	9			+05RES	16F				RR4	AP				
44016		XA244	04		XA244	13		168	9			+05RES	17				RR4	AP				
44014		XA244	13		XA244	14		168	9			+05RES	18				RR4	BP				
44013		XA244	14		XA244	22		168	9			+05RES	19				RR4	BP				
44012		XA244	22		XA244	21		168	9			+05RES	20				RR4	CP				
44011		XA244	21		XA244	33		168	9			+05RES	21				RR4	CP				
44010		XA244	33		XA244	34		168	9			+05RES	22				RR4	DP				
44009		XA244	34		XA244	50		168	9			+05RES	23				RR4	DP				
44008		XA244	50		XA244	49		168	9			+05RES	24				RR4	EP				
44007		XA244	49		XA244	59		168	9			+05RES	25				RR4	EP				
44006		XA244	59		XA244	60		168	9			+05RES	26				RR4	FP				
44005		XA244	60		XA244	70		168	9			+05RES	27				RR4	FP				
44004		XA244	70		XA244	69		168	9			+05RES	28				RR4	GP				
44003		XA244	69		XA244	79		168	9			+05RES	29				RR4	GP				
44002		XA244	79		XA244	80		168	9			+05RES	30				RR4	HP				
44001		XA244	80		XA347	79		168	9			+05RES	31				RR4	HP				
64481		XA347	79		XA347	80		168	9			+05RES	31B				RR1	HP				
64482		XA347	80		XA347	70		168	9			+05RES	31E				RR1	HP				
64472		XA347	70		XA347	69		168	9			+05RES	31H				RR1	GP				
64471		XA347	69		XA347	59		168	9			+05RES	31K				RR1	GP				
64462		XA347	59		XA347	60		168	9			+05RES	31N				RR1	FP				
64463		XA347	60		XA347	50		168	9			+05RES	31R				RR1	FP				
64454		XA347	50		XA347	49		168	9			+05RES	31U				RR1	EP				
64453		XA347	49		XA347	33		168	9			+05RES	31X				RR1	EP				
64438		XA347	33		XA347	34		168	9			+05RES	32				RR1	DP				
64439		XA347	34		XA347	22		168	9			+05RES	32B				RR1	DP				
64429		XA347	22		XA347	21		168	9			+05RES	32E				RR1	CP				
64428		XA347	21		XA347	13		168	9			+05RES	32H				RR1	CP				
64421		XA347	13		XA347	14		168	9			+05RES	32K				RR1	BP				
64422		XA347	14		XA347	04		168	9			+05RES	32N				RR1	BP				
64413		XA347	04		XA347	03		168	9			+05RES	32R				RR1	AP				
								***			SIGNAL	(+05RES)		IS ON THE						****		