

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-18
EE640-CA-MMI-180/E154 CPU
TO 31W2-2T-122-18

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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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 18 TM 11-5895-856-34-18

Card Cage Assembly, Input/Output Unit - L.H., Wire List, String (149019-800)

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 left-hand card cage assembly of the input/output unit, drawing number 149019-800. 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, INPUT/OUTPUT UNIT
- LEFT HAND
STRING WIRE LIST
149019-800**

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 SUMMARY 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, I/O UNIT.

H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS

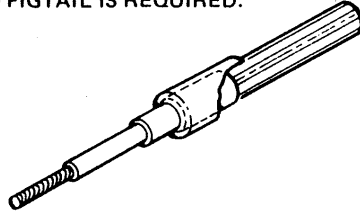
1. **Record Number** - A unique Data Processing number which associates all information pertaining to a wire "FROM" Connector, "TO" Connector, Wire Code, etc. This number is the wire ID when that field is blank.
2. **Prefix** - An assembly alphanumeric to be used when a wire terminates in two assemblies.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

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.

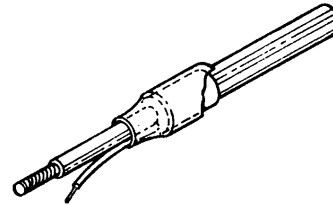
SHIELD FIGURE A

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



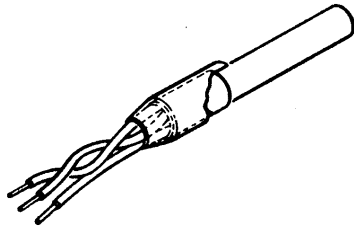
SHIELD FIGURE B

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



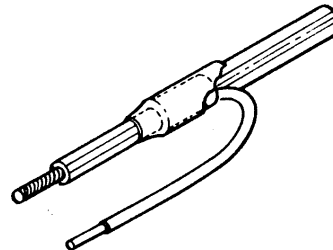
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



SHIELD FIGURE C

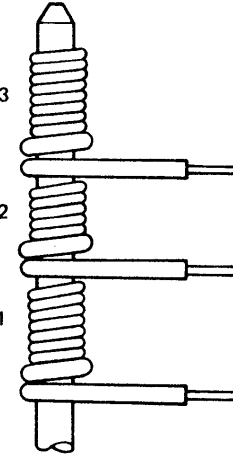
SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
A REAR PIGTAIL IS REQUIRED.



SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

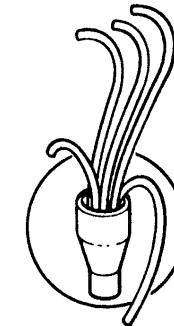
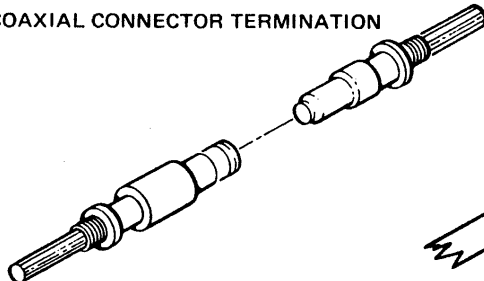
SHIELD FIGURE NO. 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION

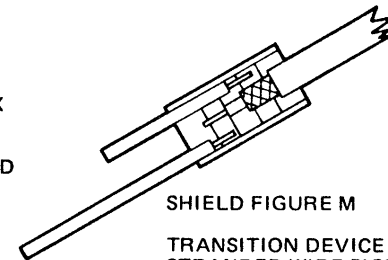


SHIELD FIGURE X

SHIELDED WIRE
PIGTAILS—HYBRID

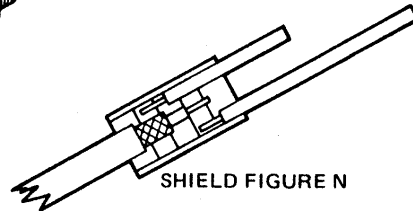
SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



SHIELD FIGURE N

TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



Drawing No.
149019-800
Rev. G, sheet 4

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
			*/ = MIL-C-17/118		0 = Int Lead

- NOTES:**
- *1. Coax.
 - 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.

WIRE SUMMARY LIST				CODE IDENT:	DRAWING NUMBER:	REVISION:
				13973	149019-800	G
TITLE: CARD CAGE ASSY I/O UNIT					PROJECT: T39B FILE: IUX2	SHEET: 6
ITEM NUM.	PART NUMBER	MIL. NUMBER	NOMENCLATURE OR DESCRIPTION	REF SYM	TIMES USED	WIRE CODE
1.	898041-0002	MIL-W-81822/3-B	WIRE,ELEC,250V,PVF INSUL,SOLID CNDCT. 30 GAGE (WHITE)		6	1BB
2.	898042-0004	MIL-W-81822/3-B	WIRE,ELEC,250V,PVF INSUL,SOLID CNDCT. 26 GAGE (RED)		13	1BD
3.	898042-0002	MIL-W-81822/3-B	WIRE,ELEC,250V,PVF INSUL,SOLID CNDCT. 26 GAGE (WHITE)		1	1BD
4.	898041-0023	MIL-W-81822/3-B	CABLE,ELEC,TW. SOLID TWO CNDCT,250V,PVF INSUL 30 GAGE (BLACK WHITE)		111	1EB
5.	898042-0034	MIL-W-81822/3-B	CABLE,ELEC,TW. SOLID TWO CNDCT,250V,PVF INSUL 26 GAGE (BLACK RED)		15	1ED
6.	898042-0023	MIL-W-81822/3-B	CABLE,ELEC,TW. SOLID TWO CNDCT,250V,PVF INSUL 26 GAGE (BLACK WHITE)		4	1ED
7.	898041-0002	MIL-W-81822/3-B	WIRE,ELEC,250V,PVF INSUL 30 GAGE (WHITE)		10495	16B

DRAWING NUMBER 149019-800 UNIT ASSEMBLY NAME CARD CAGE ASSY, I/G UNIT										STRING		UNIT ASSEMBLY NO 149019 FILE IDENT T39BIJX2		REV G DATE 09-03-82		INDEX PAGE 7		+05REG	
RECORD NUMBER	PREFIX	CONNECTION	PIN	TO	PREFIX	CONNECTION	PIN	CODE	GROUP	IDENT	SIGNAL	SPU	EQUATION	FILE	CKT OR FILE TYPE	LOAD OR PAPER FILE NO	TEST POINTS OR FUNCTION	SIGNAL DESCRIPTION	ECO NO
00006		XA107	44		XA120	02		PC	1ED	0	+05REG	01			MTS				
00001		XA120	02								K	+05REG	02		RR4				
00005		XA107	63		XA337	67		PD	1ED	0	+05REG	03			MTS				
20842		XA337	67								K	+05REG	04		RP4				
20843		XA107	44		XA410	67		PF	1ED	0	+05REG	05			MTS				
21124		XA410	67								K	+05REG	06		RR4				
00004		XA107	67		XA430	44		PE	1ED	0	+05REG	07			MTS				C13
21388		XA430	44								+05REG	08							C13
00010		XA107	43		XA410	34		PF	1ED	2	+05RES	332			MTS				C13
00085		XA410	34		XA410	33		168	9		+05RES	400			RR4 DP				
00084		XA410	33		XA410	22		168	9		+05RES	405			RR4 DP				
00083		XA410	22		XA410	21		168	9		+05RES	410			RR4 CP				
00082		XA410	21		XA410	14		168	9		+05RES	415			RP4 CP				
00081		XA410	14		XA410	13		168	9		+05RES	420			RR4 BP				
00080		XA410	13		XA410	04		168	9		+05RES	425			RR4 BP				
00079		XA410	04		XA410	03		168	9		+05RES	430			RR4 AP				
00078		XA410	03		XA411	03		168	9		+05RES	435			RR4 AP				
00094		XA411	03		XA411	04		168	9		+05RES	440			RR4 AP				
00095		XA411	04		XA411	13		168	9		+05RES	445			RR4 AP				
00096		XA411	13		XA411	14		168	9		+05RES	450			RR4 BP				
00097		XA411	14		XA411	21		168	9		+05RES	455			RR4 BP				
00098		XA411	21		XA411	22		168	9		+05RES	460			RR4 CP				
00099		XA411	22		XA411	33		168	9		+05RES	465			RP4 CP				
00100		XA411	33		XA411	34		168	9		+05RES	470			RR4 DP				
00101		XA411	34		XA430	03		168	9		+05RES	475			RR4 DP				C13
00126		XA430	03		XA430	04		168	9		+05RES	600			RR4 AP				
00127		XA430	04		XA430	13		168	9		+05RES	605			RR4 AP				
00128		XA430	13		XA430	14		168	9		+05RES	610			RR4 BP				
00129		XA430	14		XA430	21		168	9		+05RES	615			RR4 BP				
00130		XA430	21		XA430	22		168	9		+05RES	620			RR4 CP				
00131		XA430	22		XA430	69		168	9		+05RES	625			RR4 CP				B05
00138		XA430	69		XA430	70		168	9		+05RES	660			RR4 GP				
00139		XA430	70		XA430	79		168	9		+05RES	665			RR4 GP				
00140		XA430	79		XA430	80		168	9		+05RES	670			RR4 HP				
00141		XA430	80		XA107	68		PE	1ED	9	+05RES	675			RP4 HP				C13
00012		XA107	68								+05RES	920			MTS				
00009		XA107	39		XA120	33		PC	1ED	2	+05RES1	010			MTS				B04
00013		XA120	33		XA120	34		168	9		+05RES1	015			RR4 DP				B04
00014		XA120	34		XA120	49		168	9		+05RES1	020			RR4 DP				B04
00015		XA120	49		XA120	50		168	9		+05RES1	025			RR4 EP				B04
00016		XA120	50		XA120	59		168	9		+05RES1	030			RR4 EP				B04
00017		XA120	59		XA120	60		168	9		+05RES1	035			RR4 FP				B04
00018		XA120	60		XA121	70		168	9		+05RES1	040			RR4 FP				B04
00032		XA121	70		XA121	69		168	9		+05RES1	045			RR4 GP				B04
00031		XA121	69		XA121	60		168	9		+05RES1	050			RR4 GP				B04
00030		XA121	60		XA121	59		168	9		+05RES1	055			RR4 FP				B04
										****	SIGNAL	(+05RES1)	IS ON THE NEXT PAGE ****						