

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-15
EE640-CA-MMI-150/E154 CPU
TO 31W2-2T-122-15

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

DEPARTMENT OF THE ARMY, NAVY, AND AIR FORCE

22 SEPTEMBER 1983

TECHNICAL MANUAL
NO. 11-5895-856-34-15
TECHNICAL MANUAL
EE640-CA-MMI-150/E154 CPU
TECHNICAL ORDER
TO 31W2-2T-122-15

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 15 TM 11-5895-856-34-15

Card Cage Assembly "B", Interface Control Unit- R.H., Wire List, String (149017-800)

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 "B" of the interface control unit, drawing number 149017-800. 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 1 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.

WARNING

HIGH VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions Learn the areas containing high voltage in each piece of equipment Be careful not to contact high-voltage connections when installing or operating this equipment Before working Inside the equipment, turn power off and ground points of high potential before touching them.

WARNING

USE OF CLEANING SOLVENT

Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE (NSN 6850-00-105-3084) Prolonged breathing of vapor should be avoided The solvent should not be used near heat or open flame, the products of decomposition are toxic and irritating Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided When necessary, use gloves which the solvent cannot penetrate If the solvent is taken internally, consult a physician Immediately.

LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands. Change to wiring diagrams are indicated by shaded areas.

Dates of issue for original and changed pages are:

Original . . . 0 . . . 22 Sept 83

Change . . . 1 . . . 17 May 85

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 356 CONSISTING OF THE FOLLOWING:

Page	Change No.
Cover	0
Safety Steps.....	0
a.....	0
b.....	1
i-ii.....	0
(149017-800)	
1-63.....	0
64.....	1
65-112.....	0
113.....	1
114-172.....	0
173.....	1
174-341.....	0
Error Report Forms	0

*Zero in this column indicates and original page.

**CARD CAGE ASSEMBLY "B", INTERFACE CONTROL UNIT
-- RIGHT HAND
STRING WIRE LIST
149017-800**

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 B. 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. JOT 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.

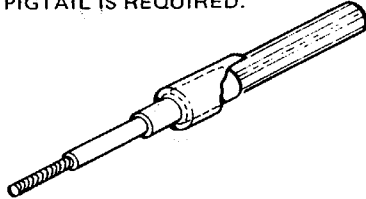
H78 STRING AND CONNECTOR LIST, DEFINITION OF FIELDS- Continued

- 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. **Disc**- 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.
149017-800
Rev. E, sheet 3

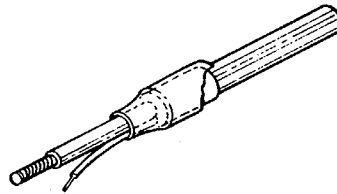
SHIELD FIGURE A

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



SHIELD FIGURE B

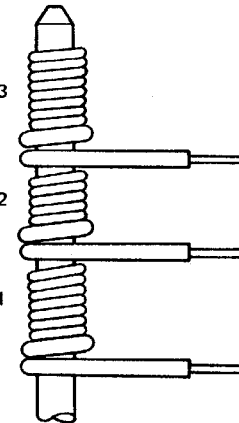
SHIELD TERMINATION FOR SHIELDED,
SINGLE AND MULTIPLE CONDUCTORS,
FRONT PIGTAIL IS REQUIRED.



SHIELD FIGURE NO. 3

SHIELD FIGURE NO. 2

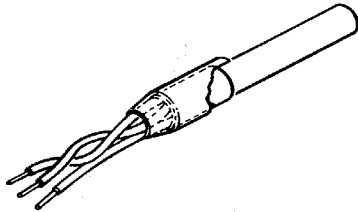
SHIELD FIGURE NO. 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

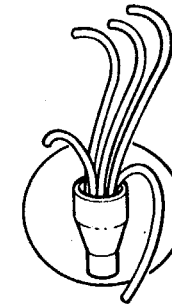
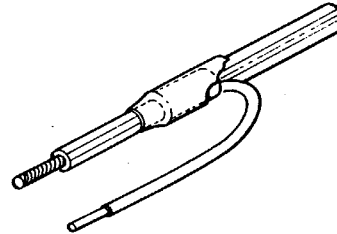
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



SHIELD FIGURE C

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

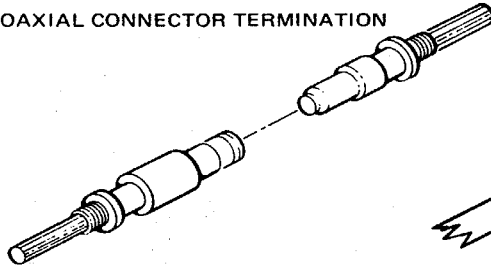


SHIELD FIGURE X

SHIELDED WIRE
PIGTAILS—HYBRID

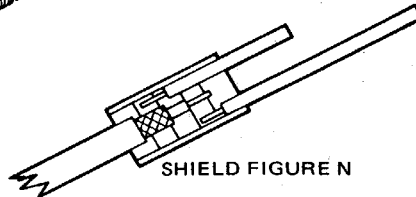
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



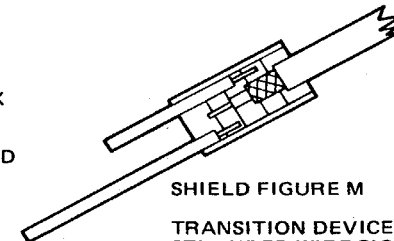
SHIELD FIGURE N

TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



WIRE CODE DEFINITION

Type	Description	AWG
1 = Polyvinylidene Fluoride (PVF) (Kynar)	1 = Buss Wire	A = 32
2 = Teflon ET	2 = High Voltage	B = 30
3 = Teflon E	3 =	C = 28
4 = Teflon EE	4 =	D = 26
5 = Fluorinated Ethylene Propylene (FEP), Type K	5 = Integral Lead	E = 24
6 = FEP, Type KT	6 = Auto Wire Wrap	F = 22
7 = Special Condition	7 =	G = 20
8 = Polyvinyl Chloride (PVC) with Nylon Jacket, Type D	8 =	H = 18
9 = MIL-W-81044/12	9 =	I = 16
0 = Buss or Integral	0 = Special	J = 14
A = PVC without Jacket, Type B	A = Single Stranded	K = 12
B = PVC with Jacket	B = Single Solid	L = 10
C = MIL-W-22759/1	C = Single Shielded	M = 8
D = MIL-W-5086/1	D = TW Pr, Stranded	N = 6
E = MIL-W-5086/2	E = Tw Pr, Solid	P = 4

WIRE CODE DEFINITION

Type	Description	AWG
*F = MIL-C-17/94 (formerly MIL-C-17/68)	F = Tw Pr, Shielded	R = 2
*G = 898008-2	G = Tw Tpl, Stranded	S = 1
*H = 898008-1	H = Tw Tpl, Solid	T = 0
*J = MIL-C-17/29	J = Tw Tpl, Shielded	U = 00
*K = MIL-C-17/30	K = Tw Quadr, Stranded	V = 000
*L = MIL-C-17/79	L = Tw Quadr, Solid	W = 0000
*M = MIL-C-17/74	M = Tw Quadr, Shielded	X = Coax
*N = MIL-C-17/86	N = Tw Six Conductor, Stranded	Y =
*P = MIL-C-17/28	P =	Z =
*R = 898008-4	R =	1 =
*S = MIL-C-17/6	S =	2 =
*T = 898059-0001	T =	3 =
U = 898017-1	U =	4 =
V = 898017-2	V =	5 =
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

H78-14 684
DRAWING NUMBER
UNIT ASSEMBLY NAME

149017-800
CARD CAGE ASSY B,IFCU

STRING

UNIT ASSEMBLY NO.
FILE IDENT

149017
T39C1FC7

REV E
DATE 09-03-82

INDEX
PAGE 7

+05AUXG
7

RECORD NUMBER	FROM				TO				WIRE				SIGNAL	SEQ NO	EQUATION	TERM	FACTOR	CKT OR CHIP TYPE	GROUP	LOAD OR POWER PLANE	TEST POINTS		SIGNAL DESCRIPTION	ECO NO
	PREFIX	CONNECTOR	PIN	FE	PREFIX	CONNECTOR	PIN	FE	MULTI GROUP	CODE	COLOR	IDENT									AND	OR		
58556		XA548	67			XA146	32		AD	1ED	0		+05AUXG	01										
12223		XA146	32			XA325	02		AE	1ED	0		+05AUXG	06										C06
58595		XA325	02										+05AUXG	07				MTS						C06
58557		XA146	44			XA251	64		ZA	1ED	0	K	+05AUXG	08				RR4						C06
58413		XA251	64			XA251	66			16B	9		+05AUXG	09				MTS						B06
58414		XA251	66			XA551	66		ZC	1ED	0		+05AUXG	10				EXT						
58415		XA551	66			XA551	64			16B	9		+05AUXG	11				EXT						
58416		XA551	64			XA350	66			16B	9		+05AUXG	12				EXT						B06
58558		XA350	66									K	+05AUXG	122				EXT						B06
10427		XA146	63			XA549	66		ZE	1ED	0		+05AUXG	13				MTS						B04
58417		XA549	66			XA549	64			16B	9		+05AUXG	14				EXT						B06
58418		XA549	64			XA550	64		ZG	1ED	0		+05AUXG	15				EXT						B06
58419		XA550	64			XA550	66			16B	9		+05AUXG	16				EXT						B06
58420		XA550	66										+05AUXG	17				EXT						B06
10405		XA146	39			XA325	04			1BD	2		+05RES	005				MTS						
12225		XA325	04									K	+05RES	010				RR4	AP					A01
10396		XA146	29			XA325	04		AE	1ED	2		+05RES	015				MTS						
00003		XA325	04	1		XA325	03	1		16B	9		+05RES	020				RR4	AP					
00004		XA325	03			XA325	13			16B	9		+05RES	025				RR4	AP					
00005		XA325	13			XA325	14			16B	9		+05RES	030				RR4	BP					
00006		XA325	14			XA325	22			16B	9		+05RES	035				RR4	BP					
00007		XA325	22			XA325	21			16B	9		+05RES	040				RR4	CP					
00008		XA325	21			XA325	33			16B	9		+05RES	045				RR4	CP					
00009		XA325	33			XA325	34			16B	9		+05RES	050				RR4	DP					
00010		XA325	34			XA325	50			16B	9		+05RES	055				RR4	DP					
00011		XA325	50			XA325	49			16B	9		+05RES	060				RR4	EP					
00012		XA325	49			XA325	59			16B	9		+05RES	065				RR4	EP					
00013		XA325	59			XA325	60			16B	9		+05RES	070				RR4	FP					
00014		XA325	60			XA325	70			16B	9		+05RES	075				RR4	FP					
00015		XA325	70			XA325	69			16B	9		+05RES	080				RR4	GP					
00016		XA325	69			XA326	03			16B	9		+05RES	085				RR4	GP					
11242		XA326	03			XA326	04			16B	9		+05RES	09A				RR1	AP					B06
11243		XA326	04			XA326	13			16B	9		+05RES	09C				RR1	AP					
11251		XA326	13			XA326	14			16B	9		+05RES	09E				RR1	BP					
11252		XA326	14			XA326	33			16B	9		+05RES	09G				RR1	BP					
11268		XA326	33			XA326	34			16B	9		+05RES	09J				RR1	OP					
11269		XA326	34			XA326	49			16B	9		+05RES	09L				RR1	OP					
11283		XA326	49			XA326	50			16B	9		+05RES	09P				RR1	EP					
11284		XA326	50			XA326	59			16B	9		+05RES	09R				RR1	EP					
11292		XA326	59			XA326	60			16B	9		+05RES	09T				RR1	FP					
11293		XA326	60			XA326	69			16B	9		+05RES	09V				RR1	FP					
11301		XA326	69			XA326	70			16B	9		+05RES	09X				RR1	GP					
11302		XA326	70			XA326	79			16B	9		+05RES	09Z				RR1	GP					
11311		XA326	79			XA326	80			16B	9		+05RES	095				RR1	HP					
11312		XA326	80			XA242	80			16B	9		+05RES	097				RR1	HP					B06
00035		XA242	80			XA242	79			16B	9		+05RES	170				RR4	HP					
00036		XA242	79			XA242	69			16B	9		+05RES	175				RR4	HP					
**** SIGNAL [+05RES] IS ON THE NEXT PAGE ****																								