

ARMY
NAVY
AIR FORCE

TM 11-5895-856-34-16
EE640-CA-MMI-160/E154 CPU
TO 31 W2-2T-122-16

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

This copy is a reprint which includes current pages from Change 1.
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DEPARTMENTS OF THE ARMY, NAVY AND AIR FORCE

22 SEPTEMBER 1983

TECHNICAL MANUAL
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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 16 TM 11-5895-856-34-16

Card Cage Assembly "B", Interface Control Unit- R H., Wire List, Logic (149017-860)

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 logic wire list for the right-hand card cage assembly "B" of the interface control unit, drawing number 149017-860. 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 "B", INTERFACE CONTROL UNIT
- RIGHT HAND
LOGIC WIRE LIST
149017-860**

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 OF STRING LIST FOR WIRE CODE DEFINITIONS.
4. REFERENCE TO SHEET 6 OF STRING LIST 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 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 gauge 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 numbers 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 punting of the "FROM" pin.

- 10. **Misc**-Unless otherwise noted, the number 1 indicates a prepared 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 nonfunctional 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 punted 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 millilamps by a specific circuit or voltage.

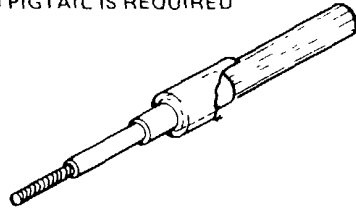
- 19. **AND Test Point**-Denotes the input test point for a specific circuit on a printed circuit board.

- 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.

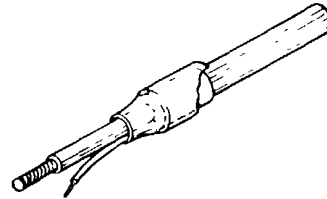
- 22. **ECO No.**-A letter number combination to show the Engineering Change Order level of that particular wire list record.

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



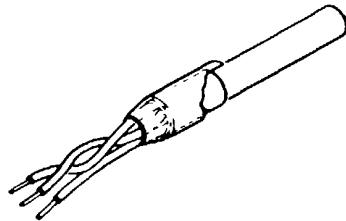
SHIELD FIGURE B

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



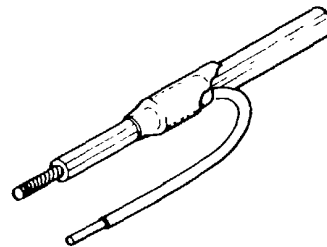
SHIELD FIGURE G

SHIELDED CABLE TERMINATION WITH DRAIN WIRE



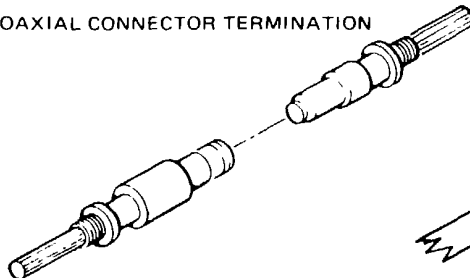
SHIELD FIGURE C

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



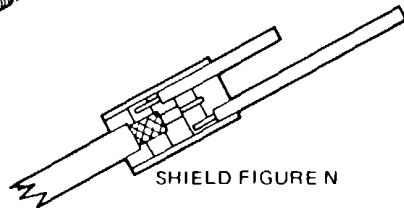
SHIELD FIGURE Z

COAXIAL CONNECTOR TERMINATION



SHIELD FIGURE N

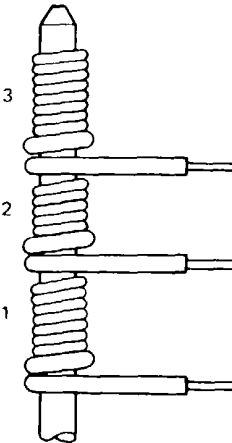
TRANSITION DEVICE WITH
SOLID WIRE PIGTAILS



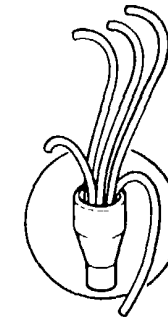
SHIELD FIGURE NO 3

SHIELD FIGURE NO 2

SHIELD FIGURE NO 1



SHIELD FIGURE NUMBER
INDICATES LEVEL OF WIRE WRAP

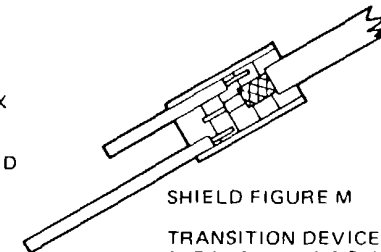


SHIELD FIGURE X

SHIELDED WIRE
PIGTAILS-HYBRID

SHIELD FIGURE M

TRANSITION DEVICE WITH
STRANDED WIRE PIGTAILS



Drawing No.
149017-860
Rev. E, sheet 4

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DADD00
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFIC7 DATE 09-03-82 PAGE 5

CONNECTOR	CIRCUIT TYPE	GROUP	TEST POINTS AND OR	EQUATION	TER MIN	DESIG NATION	FACTOR	COMMENT
KA211	TQ2	E3	30B	DADD00	00	=		
KA211	TQ2	E3	28B	(57)	01		DRONCA DMAACP 53 28B 55 29B	ADD CONTROL + WRITE
KA106	TQ2	F1	37B	DBCK0A	00	=		
KA106	TQ2	F1	38B	(75)	01		DBFCLO DBFUL0 77 38B 79 39B	
KA106	TQ2	F2	34A	DBCK1A	00	=		
KA106	TQ2	F2	36A	(72)	01		DBFCLO DBFUL0 71 36A 73 36B	
KA106	TQ2	F3	35A	DBCK2A	00	=		
KA106	TQ2	F3	34B	(69)	01		DBFCLO DBFUL0 65 34B 74 35B	
KA106	TQ2	F4	39A	DBCK3A	00	=		
KA106	TQ2	F4	37A	(80)	01		DBFCLO DBFUL0 76 37A 78 38A	
KA111	TQ2	F1	37B	DBCK4A	00	=		
KA111	TQ2	F1	38B	(75)	01		DBFCLO DBFUL0 77 38B 79 39B	
KA324	TLD	D2	21A	DBERRD4	00	=		
KA324	TLD	D2	22A	(46)	01		DBTSPQ DBERRO 48 22A 50 23A	BOOTSTRAP ERROR
KA312	TD4	D2	24B	DBERRO	00	=		
KA312	TD4	D2	23B	(45)	01		DRPERP DCYERP DRPEEA DRCLEA 43 23B 46 21A 48 22A 50 23A	
KA337	TH1	F5	36A	DBFCLA	00	=		
KA337	TH1	F5	37A	(78)	01		DBFCLO 76 37A	
KA211	TQ2	E4	33B	DBFCLO	00	=		
KA211	TQ2	E4	31B	(63)	01		DBFC1A DBFC2A 59 31B 61 32B	CLK BUFFER REG
KA333	TQ2	F3	35A	DBFC1A	00	=		
KA333	TQ2	F3	34B	(69)	01		DTNCBQ DBFC30 65 34B 74 35B	NOR 8 MHZ CLK
KA224	TQ2	A1	05A	DBFC2A	00	=		
KA224	TQ2	A1	06A	(06)	01		DBFC40 DRCL30 08 06A 10 07A	

DRAWING NUMBER 149017-860 LOGIC UNIT ASSEMBLY NO. 149017 REV E INDEX DBFC30
 UNIT ASSEMBLY NAME CARD CAGE ASSEMBLY B, IFCU FILE IDENT T39CIFC7 DATE 09-03-82 PAGE 6

CONNECTOR	CU FNC	S GROUP	TEST POINTS AND OR	EQUATION	TER MIN	DESIG NATOR	FACTOR	COMMENT
KA224	TQ2	A2	02B	DBFC30	00	=		CONTROL FOR 8 MHZ
KA224	TQ2	A2	04A	(01)	01		DMCK2A DMCK4A 04 04A 05 03B	
KA223	TQ2	F3	35A	DBFC40	00	=		
KA223	TQ2	F3	34B	(69)	01		DBFC5A DBFC6A 65 34B 74 35B	
KA328	TD4	B2	10B	DBFC5A	00	=		BUFFER FULL . SR EMPTY . WRITE
KA328	TD4	B2	09A	(21)	01		DBFULQ DSFULP DWRN00 DBFC80 14 09A 18 10A 19 09B 20 11A	. CORRECT TIME
KA312	TD4	C2	16B	DBFC6A	00	=		
KA312	TD4	C2	15A	(33)	01		DRB260 DRCM30 DRWDE5T DBFULP 30 15A 31 15B 34 16A 36 17A	
KA224	TQ2	B1	12A	DBFC80	00	=		DISC ENB* + DISC ENB.W21*.B33
KA224	TQ2	B1	13A	(22)	01		DRRENQ DBFC9A 24 13A 26 14A	
KA219	TT3	D2	23B	DBFC9A	00	=		DIC ENB . W21* .B33
KA219	TT3	D2	22B	(43)	01		DRB06Q DRRENQ DRWDE4T 41 22B 46 21A 48 22A	
				DBFUDI	00	=		
KA309	TDD	HI	22A	()	01		SPI064 48 22A	
				DBFUDN	00	=		
KA309	TDD	HN	21A	()	01		DYNC8P 46 21A	
KA309	TDD	HP	24B	DBFUDP	00	=		
KA309	TDD	HP	23A	(45)	01		DBFULP 50 23A	
KA309	TDD	HQ	23B	DBFUDQ	00	=		
KA309	TDD	HQ	22B	(43)	01		SPI061 41 22B	
				DBFULI	00	=		
KA210	TDD	EI	19A	()	01		DBFUL0 40 19A	
				DBFULN	00	=		
KA210	TDD	EN	20A	()	01		DBFCLA 42 20A	