

MIL-C-81954B(AS)  
11 July 1977  
Superseding  
MIL-C-81954A(AS)  
15 May 1975

MILITARY SPECIFICATION  
CABLE ASSEMBLY SET, ELECTRICAL,  
MATS, SPECIAL PURPOSE

This specification has been approved by the Naval  
Air Systems Command, Department of the Navy.

1. SCOPE

1.1 Scope. This specification covers the performance, design and test requirements for a special purpose MATS electrical cable assembly set, referred to herein as the cable set.

1.2 Classification. The cable set, Part Number 493513-1XX, shall consist of the following:

- a. Electrical umbilical cable assembly 21W1
- b. Electrical attack cable assembly 21W2

2. APPLICABLE DOCUMENTS

2.1 General. The following documents, of the issue specified in AS-4053, Applicable Document List for AWCS Test Set AN/AWM-23(V), form a part of this specification to the extent specified herein: MIL-T-81734(AS) shall be the applicable general specification for the cable set described herein (see 6.6).

SPECIFICATIONS

Military

MIL-T-81734(AS) Test Set, Airborne Weapon Control System,  
AN/AWM-23(V)

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to:

Engineering Specifications and Standards Department (Code 93) Naval Air Engineering Center, Lakehurst, NJ 08733, by using self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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Naval Air Systems Command (NAVAIR)

AS-2695	Interface Specification, F-14A Weapon Control System
AS-2696	AN/AWG-9 (N-3) Interface with the AIM-54A-1 Missile Interface Specification, AIM-54A Guided Missile (Production) Installation and Physical Interface with the F-14A Aircraft

STANDARDS

Military

MIL-STD-454 Standard General Requirements for Electronic Equipment

2.2 Availability of documents. When requesting specifications, standards, drawings, and publications, refer to both title and number. Copies of applicable specifications required by contractors in connection with specific procurement functions may be obtained upon application to the Commanding Officer, Naval Supply Depot, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120.

2.3 Precedence of documents. When the requirements of the contract, this specification, or applicable subsidiary documents are in conflict, the following precedence shall apply:

- a. Contract. The contract shall have precedence over any other document.
- b. AS-2695 and AS-2696 shall have precedence over this specification.
- c. This specification. This specification, except for b. above, shall have precedence over any other subsidiary documents. In case of discrepancies between this specification and MIL-T-81734(AS), the requirements of this specification shall govern.
- d. Referenced documents. Any document referenced in this specification shall have precedence over all applicable documents referenced therein.

3. REQUIREMENTS

3.1 Materials, parts, and processes. Applicable.

3.1.1 Selection of materials, parts and processes. Applicable.

3.1.1.1 Approval of nonstandard materials, parts and processes. Applicable.

3.1.2 Flammable materials. Applicable.

3.1.3 Cables and connectors. Applicable.

3.1.4 Wire. Applicable.

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- 3.1.5 Rotary switches. Not applicable.
- 3.1.6 Finishes. Not applicable.
- 3.1.7 Marking and identification. Applicable.
- 3.1.8 Soldering. Applicable
- 3.1.9 Welding. Not applicable.
- 3.1.10 Printed wiring. Not applicable.
- 3.1.11 Engineering changes to printed circuit boards. Not applicable.
- 3.1.12 Replaceability of electronic standard parts and materials. Not applicable.

3.2 Design and construction. Applicable.

3.2.1 Design features. The cable set shall consist of two cable assemblies, umbilical and attack, and cable straps. Two cable straps shall be adjustable, and one shall be non-adjustable. Protective covers for each connector shall be provided.

- 3.2.1.1 Method of operation. Not applicable.
- 3.2.1.2 Commercial test equipment. Not applicable.
- 3.2.1.2.1 Other commercial components. Not applicable.
- 3.2.1.3 Circuit grounds. Not applicable.
- 3.2.1.4 Interchangeability. Applicable.
- 3.2.1.5 Identification of product. Applicable.
- 3.2.1.6 Human factors. Not applicable.
- 3.2.1.7 Test set generated acoustic noise. Not applicable.
- 3.2.1.8 Forced-liquid cooling. Not applicable.
- 3.2.1.9 Space and weight limitations. The weight of the cable set shall not exceed 25 pounds. The size of the two cables within the cable set shall be as follows:

	<u>Cable Name</u>	<u>Length</u>	<u>Diameter</u>
a.	Electrical umbilical cable assembly	108+ 6 inches	1.25 inches maximum

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	<u>Cable Name</u>	<u>Length</u>	<u>Diameter</u>
	b. Electrical attack cable assembly	216+10 inches	0.50 inch maximum
3.2.1.10	<u>Connectors</u> .	Not applicable.	
3.2.1.11	<u>Secondary electrical power</u> .	Not applicable.	
3.2.1.12	<u>Interface</u> .	The cable set shall directly attach to either the Missile Auxiliaries Test Set (MATS) TS-3479( )/AWM-23(V) or the Missile Interface Test Set (MITS) TS-3561( )/AWM-23(V) and to aircraft umbilical and attack connectors at the aircraft/weapon rail interface on the aircraft fuselage.	
3.2.2	<u>Utilities</u> .	Not applicable.	
3.2.3	<u>Service conditions</u> .		
3.2.3.1	<u>Electrical</u> .	Not applicable.	
3.2.3.2	<u>Environmental</u> .	Applicable.	
3.2.3.2.1	<u>Organizational level</u> .	Applicable.	
3.2.3.2.2	<u>Intermediate level</u> .	Applicable.	
3.2.4	<u>Maintainability</u> .	Not applicable.	
3.2.5	<u>Reliability</u> .	The mean-time between-failures (MTBF) shall be 500 hours minimum.	
3.2.5.1	<u>Operating life</u> .	Applicable.	
3.2.5.2	<u>Storage life</u> .	Applicable.	
3.2.5.3	<u>Operational stability</u> .	Applicable.	
3.2.6	<u>Electromagnetic interference (EMI)</u> .	Not applicable.	
3.2.7	<u>Utilities protection</u> .	Not applicable.	
3.2.3	<u>Calibration cycle</u> .	Not applicable.	
3.3	<u>Performance</u> .		

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3.3.1 General. The cable set shall provide the physical and functional interface, defined in AS-2695 and AS-2696, between the MATS or the MITS and the F-14A umbilical and attack connectors with the AIM-54A missile weapon rail removed. The cable set shall be portable for use at the organizational level to interconnect the MATS or the MITS with the F-14A aircraft umbilical and attack connectors at the aircraft/weapon rail interface. The cable set and the appropriate adapter shall provide the interconnection of the Module Test Station (MTS) OJ-217( )/AWM-23(V) or OJ-378( )/AWM-23(V), with the MATS, or the MITS, to enable testing of the MATS, or the MITS, on the MTS at the intermediate level.

3.3.2 Organizational level functional requirements. Applicable.

3.3.3 Intermediate level functional requirements. Applicable.

3.3.4 Warmup time. Not applicable.

3.4 Detailed requirements. Not applicable.

3.5 Workmanship. Applicable.

3.6 Elements. Not applicable.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Applicable.

4.2 General. Applicable.

4.2.1 Classification. Applicable.

4.2.2 Individual items. Applicable.

4.2.3 In-process inspection. Applicable.

4.2.4 In-process data. Applicable.

4.2.5 Acceptance test plan. Applicable.

4.2.6 Test results. Applicable.

4.2.7 Acceptance. Applicable.

4.2.8 Utilities. Applicable.

4.2.9 Configuration. Applicable.

4.3 Tests.

4.3.1 Electrical and electronic items - operational run-in test.  
Not applicable.

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- 4.3.2 Mechanical items. Applicable.
- 4.4 Environmental test conditions. Applicable.
- 4.5 Test location. Applicable.
- 4.6 Acceptance schedule. Applicable.
- 4.7 Test procedures. Applicable.
- 4.8 Rejection and retest. Applicable.

## 5. PREPARATION FOR DELIVERY

- 5.1 General. Applicable.

## 6. NOTES

6.1 Intended use, cable set. The cable set is intended for use at the intermediate maintenance level to functionally test the MATS or the MITS on the MTS and for use at the organizational level to connect the MATS or the MITS to the F-14A aircraft umbilical and attack connectors.

- 6.2 Ordering data. Applicable.

- 6.3 Definitions. Applicable.

6.4 Nomenclature cross reference. The following is cross reference between the official Navy nomenclature and the major contractor part numbers. The contractor part number suffix is controlled by the configuration list in the contract.

<u>Official Nomenclature</u>	<u>Contractor Part Number</u>
a. Test Station, Module OJ-217( )/AWM-23(V) OJ-378( )/AWM-23(V)	493457-1XX
b. Test Set, Missile Auxiliaries TS-3479( )/AWM-23(V)	493502-1XX
c. Electrical umbilical cable assembly 21W1	3298230
d. Electrical attack cable assembly 21W2	3298231
e. Test Set, Missile Interface TS-3561( )/AWM-23(V)	493507-1XX

- 6.5 Liquid cooler. Not applicable.

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6.6 Use of this specification. This specification is a detail specification which uses MIL-T-81734(AS) as a general specification. Where the corresponding paragraphs of MIL-C-81954(AS) are the same as MIL-T-81734(AS) the word "applicable" is used in this specification. When the term "Not applicable" is used in this specification, it means that the corresponding paragraph requirements of MIL-T-81734(AS) are not required to be met (see 6.6 of MIL-T-81734(AS)).

6.7 Abbreviations and acronyms. Applicable.

6.8 Convenience outlet power. Not applicable.

6.9 Changes from previous issue are not marked.

Custodian:  
Navy-AS

Preparing Activity:  
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Project No. 4935-NO18

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DOCUMENT IDENTIFIER AND TITLE		
MIL-C-81954B(AS) Cable Assembly Set, Electrical, MATS, Special Purpose		
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