

MIL-C-17/31B
24 April 1978
~~SUPERSEDING~~
MIL-C-17/31A
28 February 1964
MIL-C-17/36
7 September 1955

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE COAXIAL, 125 OHMS,
M17/31-RG63, UNARMORED, M17/31-RG79, ARMORED

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for procuring the cables described herein shall consist of this document and the latest issue of Specification MIL-C-17.

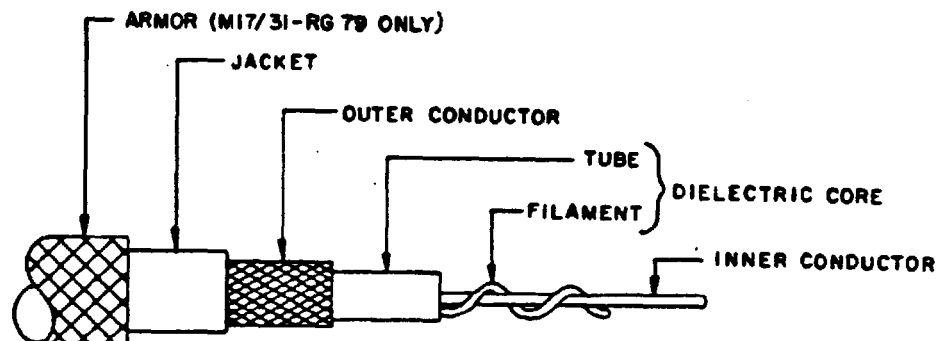


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details												
Inner conductor	Solid, copper-covered, steel wire. Diameter: .0253 inch $\pm$.0010.												
Dielectric core	Type A-3: Air-spaced polyethylene. A mono-filament thread, .070 inch approx. diameter, with a lay of 1/2 inch approx., under an extruded tube. Overall diameter: .285 inch $\pm$.010. <u>Alternate</u> A continuous tube, .003 inch thick maximum under two continuous spiral fins, with a lay of 1-1/4 inches approx., under an extruded tube of type A dielectric, overall diameter .285 inch $\pm$.010.												
Outer conductor	Single braid of AWG#33, bare, copper wire. Diameter: .340 inch maximum. <u>Alternates</u> <table><tr><td>Coverage:</td><td>94.9% nominal</td><td>94.9% nominal</td></tr><tr><td>Carriers:</td><td>16</td><td>24</td></tr><tr><td>Ends:</td><td>12</td><td>8</td></tr><tr><td>Picks/inch:</td><td>4.3% $\pm$10</td><td>6.5% $\pm$10</td></tr></table>	Coverage:	94.9% nominal	94.9% nominal	Carriers:	16	24	Ends:	12	8	Picks/inch:	4.3% $\pm$ 10	6.5% $\pm$ 10
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Jacket	Type Ila. Diameter: .405 inch $\pm$.010.												
Armor (M17/31-RG79 only)	Single braid of aluminum-alloy wire. Diameter: .475 inch maximum.												

ENGINEERING INFORMATION:

Continuous working voltage: 750 Vrms, maximum.
 Operating frequency: 1 GHz, maximum.
 Velocity of propagation: 84 percent, nominal.
 Power rating: See figure 2.
 Operating temperature range: -40 to +80°C maximum.
 Weight: 8.8 pounds per 100 feet nominal (M17/31-RG63); 13.8 pounds per 100 feet, maximum (M17/31-RG79).

Inner conductor properties:

DC resistance (maximum at 20°C): 4.4 ohms per 100 feet.

Elongation: 1 percent, minimum.

Tensile strength: 110 klbf/inch², minimum.

Engineering notes: This cable useful in low temperature applications.
 (See connector series "N", "C", and "SC" per MIL-C-39012 for M17/31-RG63. NATO preferred type NWR-4).

REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Eccentricity: 10 percent, maximum.

Aging stability: +98° ±2°C.

Cold bend: -35° ±2°C.

Dimensional stability: 85° ±2°C.

Inner conductor from core: .062 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Applicable.

Electrical:

Spark test: 5,000 Vrms, minimum.

Voltage withstanding: 3,000 Vrms, minimum.

Characteristic impedance: 125 ohms ±6.

Attenuation: 5.5 dB per 100 feet, maximum at .4 GHz.

Capacitance 11.0 pF per foot, maximum.

Part number: See table II.

Supersession data: See table II.

TABLE II. Cross reference of part number.

Part number	Superseded part number or type designation
M17/31-RG63	RG-63B/U
M17/31-RG79	RG-79B/U

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

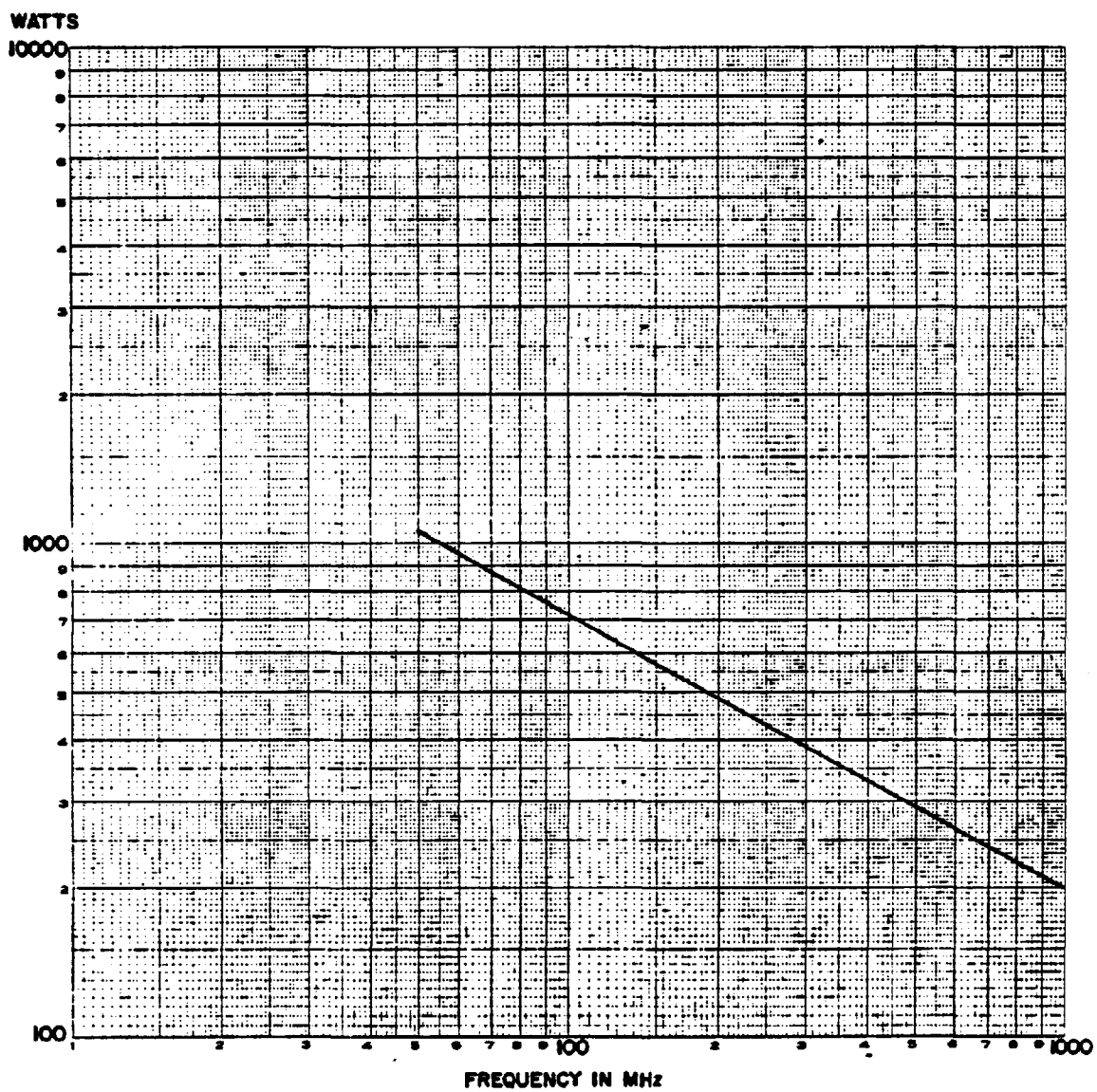


FIGURE 2. Power rating @ 25°C sea level.

Custodians:

Army: EL
Navy - EC
Air Force - 99

Review activities:

Army - MI
Navy - SH
Air Force - 17, 85, 11
DLA - ES, IS

User activities:

Army - ME, AT, AR
Navy - AS, OS, MC
Air Force - 19

Preparing activity:

Army - EL

Agent:

DLA - ES

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