DWG NO. 6323056	REV E
SH 1	

FIRST APPLICATION	
NEXT ASSY	USED ON
FOR PARTS APPLICATION SEE OD 32190	

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
E	REVISED PER ECN G8	93-01-09	

SPECIFICATION CONTROL DRAWING

CONTR NO. N00024-79-C-5151

GE CE Aerospace

CAGE CODE 07933 — General Electric Company, Government Electronic Systems Division, Moorestown, New Jersey, 08057

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
WASHINGTON, D.C. 20362

APPROVED		
PREPARED	JJ BENES	88-4-11
CHECKED	JJ BENES	88-4-11
ENGINEER	D.P.VITT	88-4-11
ACCEPTED BY NAVSEA	SIGNATURE DOES NOT DENOTE APPROVAL	
APPROVED FOR NAVSEA	SIGN ONLY IF ENGINEERING HAS BEEN "PROVED" BY MANUFACTURING AND TEST	

REL JJB

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE THICKNESS OF PLATING

TOLERANCES ON:

BASIC DIMENSIONS	2 PLACE DECIMALS	3 PLACE DECIMALS
UP TO 6	±.02	±.010
ABOVE 6 TO 24	±.03	±.015
ABOVE 24	±.08	±.020

ANGULAR DIMENSIONS

DO NOT SCALE THIS DRAWING

CABLE, RF, FLEXIBLE, TRIAXIAL, 50 OHM, LOW SMOKE

Lockheed

SIZE	CAGE CODE	NAVSEA DWG NO.
A	53711	6323056
	SCALE —	SHEET 1 OF 9

1.0 SCOPE

THIS DETAIL SPECIFICATION DRAWING COVERS THE SPECIAL REQUIREMENTS FOR AN OPTIMIZED SHIELDED TRIAXIAL CABLE SUITABLE FOR USE ON BOARD A NAVAL SHIP. THIS CABLE ALSO INCORPORATES LOW SMOKE AND LOW TOXICITY MATERIALS IN ITS DESIGN.

2.0 APPLICABLE DOCUMENTS

THE FOLLOWING SPECIFICATIONS AND DRAWINGS FORM A PART OF THIS DETAIL SPECIFICATION TO THE EXTENT SPECIFIED HEREIN. UNLESS OTHERWISE SPECIFIED, THE ISSUE IN EFFECT ON THE DATE OF INVITATION FOR BID OR REQUEST FOR PROPOSAL SHALL APPLY. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS SPECIFICATION AND THE REFERENCE CITED HEREIN, THE TEXT OF THIS SPECIFICATION SHALL TAKE PRECEDENCE.

NAVSEA DRAWINGS

6323050 CABLE RADIO FREQUENCY, LOW SMOKE, GENERAL REQUIREMENTS FOR:

3.0 REQUIREMENTS

3.1 GENERAL

THE RF CABLE SHALL BE IN ACCORDANCE WITH NAVSEA DRAWING 6323050 AND AS SPECIFIED HEREIN. IN CASE OF CONFLICTING REQUIREMENTS, THE REQUIREMENTS LISTED HEREIN SHALL APPLY.

3.2 CONSTRUCTION

PARTS, MATERIALS AND CONSTRUCTION DETAILS SHALL BE IN ACCORDANCE WITH FIGURE 1 AND TABLE II HEREIN.

3.3 PHYSICAL, MECHANICAL AND ELECTRICAL REQUIREMENTS

THE CABLE SPECIFIED HEREIN SHALL CONFORM TO FIGURE 1, TABLES II, III, AND IV AND TO THE OTHER REQUIREMENTS OF NAVSEA DRAWING 6323050.

3.3.1 FLAME BARRIER MATERIALS, INCLUDING TAPES AND JACKET BEDDING COMPOUNDS, SHALL MEET THE REQUIREMENTS OF PARAGRAPHS 3.6.5.1 THROUGH 3.6.5.5 OF NAVSEA 6323050.

3.4 QUALIFICATION

PROCEDURES SHALL BE IN ACCORDANCE WITH PARAGRAPHS 3.3 AND 6.3 OF NAVSEA DRAWING 6323050 AND 4.1 HEREIN.

3.5 MARKING

CABLE JACKET SHALL BE MARKED WITH THE MANUFACTURER'S NAME TRADEMARK OR CAGE CODE, PART NUMBER AND YEAR OF MANUFACTURE AND BE PERMANENT AND LEGIBLE. MARKING SHALL NOT DAMAGE THE CABLE.

4.0 QUALITY ASSURANCE

4.1 QUALIFICATION INSPECTION

QUALIFICATION SHALL BE IN ACCORDANCE WITH NAVSEA 6323050, PARAGRAPH 4.3.

4.2 QUALITY CONFORMANCE INSPECTION

AS A MINIMUM, THE INSPECTION OF ALL CABLES FOR DELIVERY SHALL CONSIST OF TH
GROUP A AND B INSPECTION OF NAVSEA 6323050, PARAGRAPH 4.4.

4.3 PROCESS CONTROL INSPECTIONS

INSPECTIONS SHALL BE IN ACCORDANCE WITH NAVSEA 6323050, PARAGRAPH 4.5.

5.0 PREPARATION FOR DELIVERY

THE REQUIREMENTS OF NAVSEA 6323050, PARAGRAPH 5.0 APPLY.

6.0 NOTES

6.1 SUGGESTED SOURCE(S) OF SUPPLY

SOURCE 1	SOURCE 2
BRAND-REX CABLE SYSTEMS DIV. 1600 WEST MAIN STREET WILLIMANTIC, CT 06226-1128	TIMES MICROWAVE SYSTEMS 358 HALL AVE P.O. BOX 5039 WALLINGFORD, CT 06492-5039
CAGE CODE: 71124	CAGE CODE: 68999
PART NUMBER: SEE TABLE I	PART NUMBER: SEE TABLE I

6.2 IDENTIFICATION OF THE SUGGESTED SOURCE(S) OF SUPPLY HEREON IS NOT TO CONSTRUED AS A GUARANTEE OF PRESENT OR CONTINUED AVAILABILITY AS A SOUR OF SUPPLY FOR THE ITEM DESCRIBED ON THE DRAWING.

TABLE I

NAVSEA PART NUMBER	APPLICABLE TABLE	SOURCE 1 * PART NUMBER		SOURCE 2 * PART NUMBER	
		METHOD A	METHOD B	METHOD A	METHOD E
6323056	II, III, IV	———	T13295	AA-6965	AA-7620

* CONSTRUCTION VARIATION SHALL BE DESCRIBED IN TABLE II HEREIN, METHOD B IS THE PREFERRED METHOD. METHOD A IS INACTIVE FOR NEW PROCUREMENT.

TABLE II
DESCRIPTION
(SEE FIGURE 1)

CENTER CONDUCTOR	STRANDED CONDUCTOR, AWG. 20, TIN COATED COPPER 19/AWG 32.	.040 ± .001 IN.DIA.
DIELECTRIC CORE	CROSSLINKED POLYETHYLENE, MEDIUM DENSITY FOAM; .040 IN. WALL NOMINAL.	.120 IN. DIA. NOMINAL
INNER SHIELD BRAID	CALCULATED AREA OF COVERAGE SHIELD CONFIGURATION, 90-94% AREA OF COVERAGE: TIN COATED COPPER CONDUCTOR. 1/	.143 IN. DIA. NOMINAL
INNER JACKET	FILLED, CROSSLINKED, THERMOSET, LOW SMOKE, LOW HALOGEN POLYMER COMPOUND, .018 ± .002 IN WALL. 3/	.179 IN. DIA. NOMINAL
OUTER SHIELD BRAID	OPTIMIZED SHIELD CONFIGURATION, APPROXIMATELY 93% AREA OF COVERAGE, TIN COATED COPPER CONDUCTOR. 2/	.204 IN. DIA. NOMINAL
WRAP	CERAMIC TAPE, 0.006 IN. THICK, 50% MIN. OVERLAP: 0.012 IN WALL (NOM.) 4/	.228 IN. DIA. NOMINAL
JACKET	METHOD A: FILLED, CROSSLINKED THERMOSET, LOW SMOKE LOW HALOGEN POLYMER COMPOUND; 0.028 IN. WALL (NOM.) 3/ METHOD B: COMPOSITE / JACKET MATERIAL; FLAME BARRIER EXTRUDED LOW SMOKE, LOW HALOGEN BEDDING COMPOUND OF 50% TOTAL JACKET THICKNESS BONDED TO FILLED, CROSSLINKED, THERMOSET LOW SMOKE, LOW HALOGEN POLYMER COMPOUND, 0.038 IN WALL (NOM.) 3/, 4/	.283 ± .006 IN. DIA.

NOTES:

1/ SHIELD BRAID'S AREA OF COVERAGE SHALL BE CALCULATED IN ACCORDANCE WITH PARAGRAPH 3.7.2.2 OF 6323050 USING ANY PARAMETER.

2/ OPTIMIZED SHIELDS SHALL MEET THE DIMENSIONAL REQUIREMENTS OF TABLE II AND PERFORMANCE REQUIREMENTS OF TABLE IV HEREIN; AND PARAGRAPH 3.7.2.1 OF NAVSEA 6323050.

3/ JACKET MATERIAL SHALL MEET THE REQUIREMENTS OF PARAGRAPH 3.4.4.2 OF NAVSEA 6323050.

4/ CERAMIC TAPE WRAP IS NOT APPLICABLE WHEN METHOD B COMPOSITE/JACKET MATERIAL CONSTRUCTION IS USED.

TABLE III
ENGINEERING DATA

DIMENSIONS	FIGURE 1 AND TABLE II
WATERTIGHTNESS	N/A
CHARACTERISTIC IMPEDANCE	50 ± 2 OHMS
WEIGHT	70 LBS/M FT MAX.
OPERATING TEMPERATURE RANGE	-40 DEG TO +85 DEG C
OPERATING FREQUENCY	2 GHZ MAX
VELOCITY OF PROPAGATION	70 ± 3%
CENTER CONDUCTOR RESISTANCE (DC)	9.48 OHM / M FT MAX. (INNER CONDUCTOR)
CONTINUOUS WORKING VOLTAGE	2000 VRMS MAX

TABLE IV

INSPECTION AND TEST REQUIREMENTS 1/

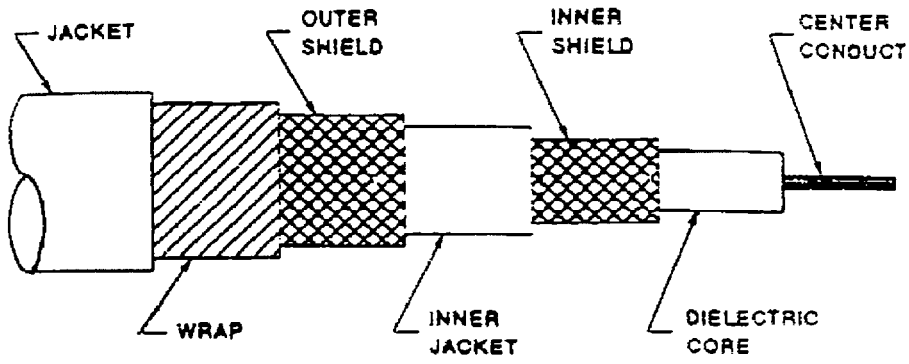
PHYSICAL AND MECHANICAL	
COLD BEND (MANDREL)	3 IN. DIA / 5 LBS
BEND CYCLING (MANDREL)	200 CYCLES / 8 LBS
HEAT AGING STABILITY	YES
ADHESION OF INSULATION	6 LBS MIN- 15 LBS (MAX)
ABRASION RESIS. (FIN. CBL)	500 CYCLES MIN/500 GRAMS (MIN)
DIMENSIONAL STABILITY	
CENTER CONDUCTOR FROM CORE	.063 IN. MAX.
CENTER CONDUCTOR FROM OUTER JACKET	.125 IN. MAX.
TENSILE AND ELONGATION	
JACKET (UNAGED)	1300 PSI (MIN.) / 160% MIN.
DIELECTRIC (UNAGED)	1000 PSI (MIN.)/ 300% MIN.
SOLDERABILITY	N/A
ELECTRICAL	
SPARK TEST-JACKET OUTER/INNER	3000 VRMS
SPARK TEST -DIELECTRIC	5000 VRMS
VOLT AGE WITHSTAND	
OUTER JACKET(SPECIMEN)	3000 VRMS
INNER JACKET (SPECIMEN)	3000 VRMS
DIELECTRIC (SPECIMEN)	5000 VRMS
INNER JACKET (FINISHED CABLE)	2000 VRMS
DIELECTRIC (FINISHED CABLE)	5000 VRMS
CORONA EXTINCTION - DIELECTRIC	2500 VRMS (MIN)
CAPACITANCE	32.2 PF/FT (MAX.)
INSULATION RESISTANCE	2500 MEGOHMS (MIN)
CAPACITANCE UNBALANCED	N/A
TRANSMISSION UNBALANCED	N/A

TABLE IV (CONTINUED)
INSPECTION AND TEST REQUIREMENTS 1/

ELECTRICAL (CONTINUED)		
TIME DELAY	N/A	
INSERTION LOSS (ATTEN.)	10 MHZ = 1.5 DB / 100 FT MAX 50 MHZ = 3.6 DB / 100 FT MAX 100 MHZ = 5.5 DB / 100 FT MAX 400 MHZ = 12.5 DB / 100 FT MAX 1 GHZ = 23 DB / 100 FT MAX	
STRUCTURAL RETURN LOSS	50 MHZ = 18 DB MIN. 400 MHZ = 15 DB MIN. 1 GHZ = 14 DB MIN.	
SURFACE TRANSFER IMPEDANCE	700 MILLIOHMS MAX	100 KHZ TO 1 GHZ
EMP RESPONSE (OUTER SHIELD)	$\overline{X}$ = 60 DB MIN	1 HZ TO 400 MHZ

1/ THE REQUIREMENTS AND PROCEDURES OF NAVSEA 6323050 APPLY UNLESS OTHERWISE STATED HEREIN.

REPRESENTS METHOD A



REPRESENTS METHOD B

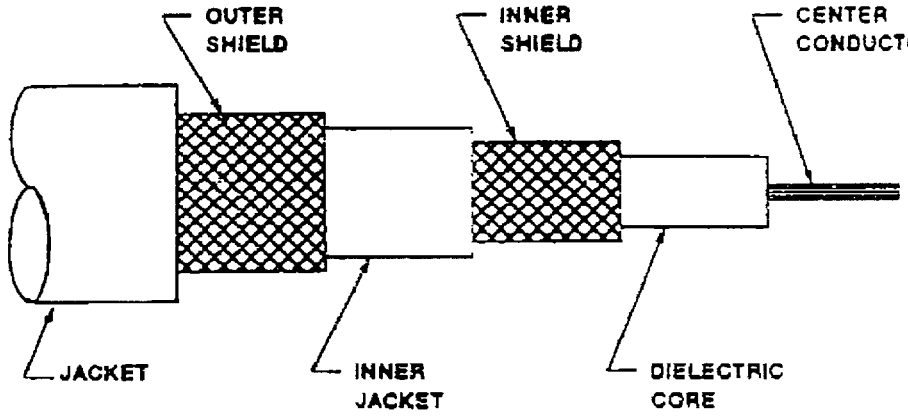


FIGURE 1
CABLE CONSTRUCTION
SEE TABLE II

SIZE	CAGE CODE	NAVSEA DWG NO.	R
A	53711	6323056	
SCALE —		SH 9	