INCH-POUND

MIL-A-29563 (AS)
AMENDMENT 1
31 January 1997

MILITARY SPECIFICATION

ANTENNA SYSTEM, AIMS SHIPBOARD,
ELECTRONICALLY STEERED OE-120/UPX

This amendment forms a part of MIL-A-29563 (AS), dated 24 February 1989, and is approved for use by all Departments and Agencies of the Department of Defense.

PAGE 1

Change the beneficial comments block to read as follows:

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Supply Center Columbus, ATTN: DSCC-VAT, 3990 East Broad Street, Columbus, Ohio 43216-5000, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

PAGE 3

3.1, fourth sentence: Delete "(1X and 36X)", and substitute "1X"; sentence 6: delete "1 to 90 RPM", and substitute "1 to 90 revolutions per minute."

PAGE 6

3.2.20.3: Delete:

"Third coat Devran 1/209 No. 27 haze grey 2-3 mils (Dry thickness)"

and substitute:

"Third coat Devoe 229K2616 Navy grey 1.5-2 mils (Dry thickness)"

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3.2.22, line 2: Delete "(capable of transmitting if an IFF pretrigger is present)" and substitute "(capable of transmitting if RF is present)"

3.2.27: Delete "MIL-STD-2000 Task G", and substitute "MIL-STD-2000A".

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3.3.1(d): Delete "(1X and 36X)" and substitute "1X".

3.3.1(g): Delete "Capability to automatically compensate for ships pitch and roll from externally supplied (other subsystem) signals." and substitute "Capability to compensate for ships, pitch and roll 2X (60 or 400 Hz) inputs from externally supplied (other subsystem) signals."

3.3.1 After 3.3.1(g), add the following:

"(h) Capability to automatically compensate the beam position for ship's heading (TRUE) from externally supplied 1X (60 or 400 Hz) synchro signals. This function shall be front panel switch selectable.

(i) Capability to detect the presence or absence of the Interrogator Side Lobe Suppression (ISLS) trigger. Provide correct switching of the ISLS RF to the omni-directional pattern and the remaining RF to the beam pattern. Generate an operator alarm and ISLS inhibit signal for output to external equipment when the ISLS trigger is absent. The inhibit signal shall be disabled within 1,340 microseconds upon receipt of an ISLS trigger. The operator alarm shall be removed within 20 milliseconds upon receipt of an ISLS trigger."

3.3.3.2: Delete:

"Size (inches) 56H - 22W - 18D
Weight (pounds) 240"

and substitute:

"Size (inches) 23H - 23W - 23D
Weight (pounds) 85"

3.3.4(a): Delete in its entirety, and substitute the following:

"(a) Directive beam

Beamwidth: 5.6 degrees to 7.8 degrees azimuthal.
40 degrees to 60 degrees vertical.

Voltage standing wave ratio (VSWR):
1.5 to 1, or less.

Gain of main lobe:
Overall gain of at least 13.5 decibels isotropic (dBi). Losses in the RF section may exceed 4.5 decibels (dB), but shall not exceed 7.5 dB. Overall gain of the main lobe shall be at least 13.5 dB average, including the RF section. The average gain value shall be determined by taking twenty gain measurements at both the transmit and receive frequencies, summing the gains measured, and dividing the total number (forty measurements) into the sum. The minimum overall gain at any directive beam position shall be at least 13.0 dBi. The difference between the average of the gain measurements at the transmit frequency and the average of the gain measurements at the receive frequency shall not differ by more than 0.5 dB.

Polarization:
Vertical.

Transmit frequency:
1030 megahertz (MHz).

Receive frequency:
1090 MHz.

Transmit peak power:
5 kilowatts (kW) at the input to unit 2;
0.5 to 10 microsecond (μs) pulses at 0.02 duty cycle.

Switching time:
Less than 50 μs from one position to any other position.

Bearing positions:
1024 equidistant steps through 360 degrees.

Synchronization:
A - 10-bit digital word.
B - Radar 1X synchro data, 60 hertz (Hz).

Secondary lobes:
The side lobe levels shall average at least 20.5 dB below the main lobe. The average side lobe level shall be determined by summing the maximum side lobe level measured at forty individual directive beam positions [twenty at both the transmit and the receive frequencies], and dividing the sum by the total number (forty) of directive beam patterns measured. The maximum side lobe level at any directive beam position shall be at least 18.0 dB below the main lobe.

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3.3.6 (b): Delete "(1X and 36X)" and substitute "1X".

3.3.6 (d): Delete "ISLS from internal switching functions." and substitute "ISLS inhibit output from missing ISLS trigger detection."

3.3.6 Add the following new subparagraphs:

"(i) Compensation of the beam position up to ±3.1635° in azimuth for antenna assembly mounting inaccuracies.
(j) An RS-232 interface providing capability to monitor system operation, to perform program debugging, and to load operating program code.
(k) Beam positioning referenced to either TRUE north or RELATIVE to the ship's bow. The TRUE compensation signal shall be 1X 60 Hz or 400 Hz synchro signals."

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3.3.6.2, first sentence, delete:"(1X and 36X)" and substitute "1X". Delete the second sentence in its entirety.

3.3.6.5 In the third sentence after " ... shall be in the beam position", add the following:

"and if absent for a period exceeding 20 ms cause an ISLS inhibit signal to be output. A visual indication that the ISLS is being inhibited shall be provided. When the ISLS inhibit is being output and an ISLS trigger is detected, the ISLS inhibit signal shall be disabled within 1,340 µs and the ISLS inhibit indicator shall be disabled within 20 ms."

3.3.6.6: Delete in its entirety, and substitute the following:

"3.3.6.6 Bearing indication of the main beam. A direct reading indicator shall be provided that continuously identifies the bearing of the main beam. When true correction is selected, the readout shall indicate the true bearing of the beam; when relative is selected, the readout shall indicate the relative bearing of the beam. A visual inspection of the beam reference shall be provided adjacent to the bearing indicator."

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3.4.4(a)(3): Delete "AN/UPM-137" and substitute "AN/UPM-137 or AN/UPM-155".

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3.4.4(c)(3): Delete in its entirety, and substitute the following:

"(3) Indicators for level C BITE shall be provided. The indicators can be mounted on the surface of each subassembly so that they are visible from the maintenance positions, or they may be mounted on the control and interface unit front panel."

3.4.4(e)(1)(c): Delete Level C in its entirety, and substitute the following: "Level C BITE: On the subassembly or on the control and interface unit front panel." Also add the following after 3.4.4(e)(2):

"(3) An RS-232 interface shall be provided in accordance with the industry communications standard known as 'EIA Interface Standard RS-232C.' The RS-232 interface shall provide the capability to monitor system operation, perform program debugging, and to load operating program code."

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6.4, after "Signal, Syncro Data,", delete "(1X and 36X)" and substitute "1X".

CONCLUDING MATERIAL

Custodians:
Navy - AS

Preparing Activity:
DLA - CC
(Project 5985-N633)

Review Activities:
Navy - EC