

QUALITY ASSURANCE PROVISIONS

8/7/2003

C-321: SPECIFICATION:

NSN: 9G-1560-00-402-8655 P/N: (26512) 1128CE40176-3

NOMEN: CANOPY, EA-6B

Articles to be furnished hereunder shall be manufactured, tested and inspected in accordance with drawing number (26512) 1128CE40176-3 REV. "E ", Design Specification CE-128CS-1F and **C-321 para. II,B**, and all details and specifications referenced therein.

The contractor shall deliver 2 unit(s) of lot/item 0001 within 180 calendar days from the date of this contract. 1 unit for First Article Testing Government (I-961), and 1 unit for First Article Testing Contractor (I-961).

I. Quality/Inspection Requirements

- A. MIL-I-45208 or equivalent applies: Refer to contract section E.
- B. First Article Testing applies: Refer to contract section I
- C. Mandatory Inspection applies: Refer to contract section C.

II. Supplemental Requirements

- A. Additionally, para. 3.1-3.5, 5.1-5.2, 6.1-6.2 of MIL-Q- 9858 or equivalent apply.
- B. Required changes to current Grumman CE-128CS-1F Specification EA-6B Qualification Testing

Abrasion

Grumman CE-128CS-1F Specification Section - None
Per ASTM F 735

- 4 Calibrate motor speed to 300 strokes per minute. Sand used for calibration shall be discarded.
- 5 Measure transmission and haze prior to testing specimen.
- 6 Mount specimen in holding plate, using protective means to prevent abrasion or scratching of bottom surface of specimen.
- 7 Cover specimen with sand to a uniform depth of 13 mm (0.50 in.)
 - 7.1 A given batch of sand may be used for a maximum of 600 strokes. New sand shall be used for each specimen tested.
- 8 Subject the specimen to 100, 200, 300, and 600 strokes.
- 9 After each increment of strokes, remove the specimen from the holder. Handle specimen by the edges only. Wash with distilled water for a minimum of 10 seconds.
- 10 Measure transmittance and haze.

Requirement: Delta Haze shall be no more than 25% after 600 strokes.

Adhesion

Grumman CE-128CS-1F Specification Section - 4.3.3 and 4.4.4

Per ASTM D 3359

- 4 Select an area free of blemishes and minor surface imperfections. Ensure the surface is clean and dry.
 - 4.1 For specimens that have been immersed: clean and wipe the specimen with a solvent that will not harm the integrity of the coating. Dry and prepare the specimen.
- 5 Make 2 cuts in the film each about 40 mm (1.5 in.) long that intersect near their middle with a smaller angle of between 30 and 45°.
- 6 Inspect the cut to make sure the coating film has been penetrated. If the substrate has not been reached, make another cut in a different location.
- 7 Remove 2 complete laps of pressure-sensitive 3M #250 tape from a role and discard. Remove an additional length at a steady rate and cut a piece approximately 75 mm (3 in.) long.
- 8 Place the center of the tape at the intersection of the cuts. Smooth the tape into place then rub firmly until good contact has been made.
- 9 Within 90 ± 30 seconds of application, remove the tape by seizing the free end and pulling it rapidly back upon itself as close to an angle of 180° as possible.
- 10 Inspect the area for removal of coating.
- 11 Repeat this process in 5 other locations on each test panel.

Requirement: There shall be no removal or degradation of coating.

Humidity

Grumman CE-128CS-1F Specification Section - 4.3.1

Per ASTM F 520

- 4 Expose the test specimen to 13 cycles of condensing humidity in a chamber with a controlled temperature of $120 \pm 5^\circ\text{F}$ and a relative humidity of 90 – 100%.
 - 4.1 Water used to maintain humidity shall not contain more than 200 ppm total solids.
- 5 Each cycle shall be a 16-hour exposure in the condensing humidity chamber and an 8-hour exposure to ambient temperature and humidity.

Requirement: There shall be no change in the optical and external threat protection qualities of the specimen.

RF Attenuation

Grumman CE-128CS-1F Specification Section - 3.3.4

Requirement: Minimum 23 dB at 3.0 GHz.

Temperature Cycling Test

Grumman CE-128CS-1F Specification Section - 4.3.2

- 4 The specimen shall be placed in a chamber with a temperature of $-65 \pm 5^{\circ}\text{F}$.
 - 4.1 The chamber will be held at this temperature for 15 minutes.
- 5 The temperature shall be permitted to rise until it reaches $175 \pm 5^{\circ}\text{F}$.
 - 5.1 The chamber will be held at this temperature for 15 minutes.
- 6 This shall be repeated for a total of 500 cycles.

Requirement: There shall be no change in the optical and external threat protection qualities of the specimen.

Chemical Craze Testing

Grumman CE-128CS-1F Specification Section - None

Per ASTM F 791

1. Place the specimen in the fixture handling only by the edges.
2. Apply a load of 2000 psi to the specimens for 10 ± 0.5 min and observe to be sure no craze has occurred.
3. Place a piece of filter paper 12.5 mm wide by 25 mm long (1/2 in by 1 in) directly in the center of the specimen so there is a clear area along each edge to avoid edge crazing.
4. Apply the test chemical to the filter paper only.
 - 4.1 Chemicals to be tested include:
Isopropyl Alcohol, Toluene, MEK, Jet Fuel (JP-4 JP-8), Hydraulic Fluid, Navy Plastic Polish PP-560, Alodine 1200, Airplane Wash Cleaner MIL-C-8514 or MIL-C-85570, Ethylene glycol, Naptha, Repcon, 50/50 Methonol-Water Solution, ACF-50, COR-BAN-35.

1. Keep the filter paper moist with the chemical for 30 minutes.
2. Remove the filter paper after the test period and inspect for craze.

Requirement: No crazing should occur at or below a stress level of 2000 psi at room temperature. Coating materials should not deteriorate (i.e. wrinkle, dissolve, discolor, etc.)

First Article Testing shall consist of two (2) each. ALL FIRST ARTICLE TESTING TO BE WITNESSED BY THE GOVERNMENT (NAVICP, NAVAIR, NADEP-Jax, and DLA/DSCR)

1. One (1) of each part number shall be complete manufactured for (First Article Government Testing). Test to be performed are: Fit Check (on aircraft at NADEP-Jax), on-aircraft pressurization check I/A/W MIL-E-18927 (on aircraft at NADEP-Jax), Dimensional Check 100% (at contractor facility with government witnessing), and Requirements of GSS11803A optical requirements (at contractor facility with government witnessing).

2. One (1) of each part number shall be formed with coatings only, and without edging for (First Article Contractor Testing). Test to be performed are: Dimensional Check 100%, Requirements of GSS11803A optical requirements, Compliance with drawing (26512) 1128CE40175 and (26512) 1128CE40176 and Design Specification CE-128CS-1F and **C-321 para. II,B**, and all specifications referenced therein, RF Attenuating Coating I/A/W CE-1128TP-1, CE-128CS-1F and **C-321 para. II,B**, data should include but not be limited to abrasion testing and environmental testing, And all requirements to be incorporated from a, b, c and d of **C-321 para. II**, and review documentation as provided under DD 1423 requirements.

Qualification Test Procedures (QTP) and Acceptance Test Procedures (ATP) shall be required and approved by the government prior to submission of First Article Test units. Review and approval of the Acceptance Test Procedures shall be granted contingent upon successful completion of First Article Testing/QTP.

C. The contractor shall include on the detailed process/operation sheets developed, all in house manufacturing processes and the identity of all manufacturing sources performing processes/ operations outside of their facilities. These sheets shall not be revised or altered after the successful completion of First Article or Production Lot Testing without approval from the basic design engineering activity via the PCO.

D. The Inspection Method Sheets which list the characteristics of each item produced under the contract shall have serial number traceability to the raw material, casting, or forging.

E. Markings should be I/A/W MIL-STD-130 REV. "K" para. 5.3.3(a), (b), (c) and (g). Method and location shall be I/A/W drawing.

III. Mandatory Inspection Requirements:

During production, mandatory inspection is required to be accomplished by the contractor as follows:

A. Level of Inspection (LOI).

1) Critical Characteristics: 100% inspection shall apply.

2) Major and Minor Characteristics - LOI shall be I/A/W a sampling plan acceptable to the QAR.

B. Critical Characteristics

1) NOTE 18 of drawing (26512) 1128CE40176-3 and **C-321 para. II,B.**

2) NOTE 19 of drawing (26512) 1128CE40176-3 and **C-321 para. II,B.**

- 3) NOTE 20 of drawing (26512) 1128CE40176-3 and **C-321 para. II,B.**
- 4) Compliance with drawing (26512) 1128CE40176-3 REV. "E ", Design Specification CE-128CS-1F and **C-321 para. II,B.**, and specifications referenced therein.
- 5) Requirements of GSS11803A optical requirements.
- 6) Review documentation as provided under DD 1423 requirements.

C. Major and Minor Characteristics

- 1) Shall be defined by the contractor subject to QAR concurrence, unless defined on applicable drawings and associated specifications.

IV. Unless expressly provided for elsewhere in this Clause, equipment such as fixtures, jigs, dies, patterns, templates, mylars, special tooling, test equipment, or any other manufacturing aid required for the manufacture and/or testing of the subject item(s) will not be provided by the Government or any other source and is the sole responsibility of the contractor. The foregoing applies notwithstanding any reference to such equipment or the furnishing thereof that may be contained in any drawing or referenced specification.

V. The following manufacturing aid(s) will be furnished for the purpose(s) indicated and shall be returned to the Government after use as intended and not later than the delivery date of the last production item of the contract:

<u>EQUIPMENT</u>	<u>PURPOSE</u>	<u>COGNIZANT ACTIVITY</u>
NSN: 9G-1560-00-402-8655 P/N: (26512) 1128CE40176-3 (2 RFI UNITS NOT PREVIOUSLY INSTALLED ON AN AIRCRAFT)	(MANUFACTURING AID)	DSCR

I-961 FIRST ARTICLE TESTS REQUIRED (GOVERNMENT TESTING)

NSN: 9G-1560-00-402-8655 P/N: (26512) 1128CE40176-3
NOMEN: CANOPY, EA-6B

I. First Article Inspection/Test Criteria:

The tests to be performed under the First Article approval clause of the contract are:

- A. Fit/Check
- B. An on-aircraft cockpit pressurization check I/A/W MIL-E-18927.
- C. Compliance with drawing (26512) 1128CE40176-3 REV. "E ", Design Specification CE-128CS-1F and **C-321 para. II,B.**, and specifications referenced therein.
- D. Review documentation as provided under DD 1423 requirements.

In addition to the above tests, the First Article(s) to be delivered hereunder shall also be subjected to those tests which will demonstrate that the article(s) comply with contract requirements.

The contractor shall be responsible for providing necessary parts and repair of the First Article Sample(s) during testing.

II. Special Instructions

- A. Sample(s) may be considered as production items under the contract provided the sample(s) can be refurbished to ready for issue (RFI) condition and provided the sample(s) have inspection approval of the cognizant QAR. Sample(s) may be shipped as production items only after all other units required under the contract have been produced and are ready for shipment.

NOTIFICATION OF SHIPMENT OF MATERIAL FOR GOVERNMENT TESTING

Fourteen (14) days prior to shipment of First Article Sample(s), the contractor shall notify the designated test facility, in writing of the anticipated shipping date, with an information copy to the ACO, Attn: _____. The contractor shall also arrange for preliminary inspection of test samples by the CAO/QAR. Upon shipment of First Article Sample(s), two (2) copies of the Material Inspection and Receiving Report (DD Form 250), bearing the QAR's signature and indication of preliminary inspection, shall be forwarded to ACO Code _____, with duplicate copies to DSCR Code _____ and to the designated test facility. The envelopes shall be clearly marked. "DO NOT OPEN IN MAILROOM".

Within 60 days after receipt of sample(s) the test site shall complete testing/evaluation and submit two (2) copies of their test report with conclusions and recommendations to ACO Code _____.

I-964 FIRST ARTICLE APPROVAL (GOVERNMENT TESTING)

NSN: 9G-1560-00-402-8655 P/N: (26512) 1128CE40176-3

NOMEN: CANOPY, EA-6B

A. The contractor shall deliver 1 unit(s) of lot/item 0001 within 180 calendar days from the date of this contract to the Government at:

Commanding Officer

Naval Air Depot

Attn: First Article Testing Office (Larry Giggey)

Door - 16

NAS Jacksonville, FL 32212-0016

(904) 542-0790

Marking of test sample(s) shipping container:

"FOR FIRST ARTICLE TESTING. NOT RFI MATERIAL. DO NOT TAKE UP IN STOCK.

CONTRACT NUMBER: _____."

For First Article Test, the shipping documentation shall contain this contract number and the lot/item identification. The characteristics that the First Article must meet and the testing requirements are specified elsewhere in this contract.

B. Within 105 calendar days after the Government receives the First Article, the contracting officer shall notify the contractor, in writing, of the conditional approval, approval or disapproval of the First Article. The notice of conditional approval or approval shall not relieve the contractor from complying with all requirements of the specifications and all other terms and conditions of this contract. A notice of conditional approval shall state any further action required of the contractor. A notice of disapproval shall cite reasons for the disapproval.

C. If the First Article is disapproved, the contractor, upon Government request, shall submit an additional First Article for testing. After each request, the contractor shall make any necessary changes, modification, or repairs to the First Article or select another First Article for testing. All costs related to these tests are to be borne by the contractor, including any and all costs for additional tests following a disapproval. The contractor shall furnish any additional First Article to the Government under the terms and conditions and within the time specified by the Government. The Government shall act on this First Article within the time limit specified in paragraph B above. The Government reserves the right to require an equitable adjustment of the contract price for any extension of the delivery schedule or for any additional costs to the Government related to these tests.

D. If the contractor fails to deliver any First Article on time, or the contracting officer disapproves any First Article, the contractor shall be deemed to have failed to make delivery within the meaning of the default clause of this contract.

E. Unless otherwise provided in the contract, the contractor -

1) May deliver the approved First Article as a part of the contract quantity, provided it meets all contract requirements for acceptance and was not consumed or destroyed in testing.

F. If the Government does not act within the time specified in paragraph B or C above, the contracting officer shall, upon timely written request from the contractor, equitably adjust under the changes clause of this contract the delivery or performance dates and/or the contract price, and any other contractual term affected by the delay.

G. The contractor is responsible for providing operating and maintenance instructions, spare parts support, and repair of the First Article during any First Article Test.

H. Before First Article approval, the acquisition of materials or components for, or the commencement of production of, the balance of the contract quantity is at the sole risk of the contractor. Before First Article approval, the costs thereof shall not be allocable to this contract for 1) progress payments, or 2) termination settlements if the contract is terminated for the convenience of the Government.

I. The contractor shall produce both the First Article and the production quantity at the same facility and shall submit a certification to this effect with each First Article.

J. The contractor shall provide specific written notification to the procuring contracting officer informing him of the shipment of any article(s) furnished in accordance with this clause. Such notification must be addressed to the attention of ACO code _____ with copies to ACO code _____ and to the testing activity. Failure to provide such notification shall excuse the Government from any delay in performing First Article Testing and informing the contractor of the results thereof.

I-961 FIRST ARTICLE TESTS REQUIRED (CONTRACTOR TESTING)

NSN: 9G-1560-00-402-8655 P/N: (26512) 1128CE40176-3

NOMEN: CANOPY, EA-6B

I. First Article Inspection/Test Criteria: The tests to be performed under the First Article approval clause of the contract are:

- A. Dimensional Check 100% to be accomplished during first piece layout.
- B. Requirements of GSS11803A optical requirements *per government approved Qualification Test Procedure*
- C. Compliance with drawing (26512) 1128CE40176-3 REV. "E ", Design Specification CE-128CS-1F and **C-321 para. II,B.**, and specifications referenced therein *per government approved Qualification Test Procedure.*
NOTE: Qualification Test Procedure shall be performed on the first article unit concurrently with Acceptance Procedure to be performed on a oversized coupon of minimum of 1 foot by 4 foot to simulate actual canopy conditions.
- D. RF Attenuating Coating I/A/W CE-1128TP-1, CE-128CS-1F and **C-321 para. II,B.**.
- E. Review documentation as provided under DD 1423 requirements.

In addition to the above tests, the First Article(s) to be delivered hereunder shall also be subjected to those tests which will demonstrate whether the article(s) comply with contract requirements.

II. Special Instructions: The contractor shall be responsible for providing necessary parts and repair of the First Article Sample(s) during testing.

- A. The successful offerer will be furnished a sample to serve as an aid in manufacturing. Any alleged conflict between the sample and the applicable drawings/specifications shall be promptly reported in writing to the contracting officer.
 - 1. Following production of all items under the quantity requirements of the contract, the contractor will be responsible for the return of the Government furnished sample in ready for issue (RFI) condition to the Government.

III. NOTIFICATION OF TESTING: The contractor shall notify the PCO, ACO and QAR prior to conducting First Article Tests so that the Government may witness such testing (see I-962, para. (A)).

A. The QAR shall be present to witness all First Article Tests.

B. The following additional personnel shall witness First Article Testing.

NAVICP Philadelphia

Code: 0731.14 / Vincent Loiseau and 073.7 / Mark Fitting

NAWC-WD China Lake

Code: 4B1100D / Don Decker

NAVAIR Patuxent River

Code: 4.3.5.4 / Jaimie Cosgrove

NADEP Jacksonville

Code: 4.3.3 / Terry Taylor

IV. Test Report: The test report shall be in accordance with MIL- STD-831 and shall be submitted (2 copies) via the Cognizant CAO/QAR to the Navy Aviation Supply Office Attn: Code 0731.14. The CAO/QAR shall provide comments on Form DD 1222 (2 copies) which shall be forwarded with the test report. Approval of the test report is the PCO's responsibility. Upon notification of approval/conditional approval, the ACO shall execute the DD 250 to indicate Government acceptance of the test report.

V. Disposition of First Article Sample(s)

A. Sample(s) may be considered as production items under the contract provided the sample(s) can be refurbished to ready for issue (RFI) condition and provided the sample(s) have inspection approval of the cognizant QAR. Sample(s) may be shipped as production items only after all other units required under the contract have been provided and are ready for shipment.

I-962 First Article Approval (Contractor Testing)

A. The contractor shall test 1 unit(s) of lot/item 0001 as specified in this contract. At least 30 calendar days before the beginning of First Article Tests, the contractor shall notify the contracting officer, in writing, of the time and location of the testing so that the Government may witness the tests.

B. The contractor shall submit the First Article Test Report within 210 calendar days from the date of this contract to:
ACO

Marked "FIRST ARTICLE TEST REPORT: Contract NO: lot/item NO. ", Within 45 calendar days after the government receives the test report, the contracting officer shall notify the contractor, in writing, of the conditional approval, approval, or disapproval of the First Article. The notice of conditional approval or approval shall not relieve the contractor from complying with all requirements of the specifications and all other terms and conditions of this contract. A notice of conditional approval shall state any further action required of the contractor. A notice of disapproval shall cite reasons for the disapproval.

C. If the First Article is disapproved, the contractor, upon government request, shall repeat any or all First Article Tests. After each request for additional tests, the contractor shall make any necessary changes, modifications, or repairs to the First Article or select another First Article for testing. All costs related to these tests are to be borne by the contractor, including any and all costs for additional tests following a disapproval. The contractor shall then conduct the tests and deliver another report to the Government under the terms and conditions and within the time specified in paragraph B above. The government reserves the right to require an equitable adjustment of the contract price for any extension of the delivery schedule, or for any additional costs to the Government related to these tests.

D. If the contractor fails to deliver any First Article report on time, or the contracting officer disapproves any First Article, the contractor shall be deemed to have failed to make delivery within the meaning of the default clause of this contract.

E. Unless otherwise provided in the contract, and if the approved First Article is not consumed or destroyed in testing, the contractor may deliver the approved First Article as part of the contract quantity if it meets all contract requirements for acceptance.

F. If the government does not act within the time specified in paragraph B or C above, the contracting officer shall, upon timely written request from the contractor, equitably adjust under the changes clause of this contract the delivery or performance dates and/or the contract price, and any other contractual term affected by the delay.

G. Before First Article Approval, the acquisition of materials or components for, or the commencement of production of, the balance of the contract quantity is at the sole risk of the contractor. Before First Article approval, the costs thereof shall not be allocable to this contract for 1) progress payments, or 2) termination settlements if the contract is terminated for the convenience of the Government.

H. The contractor shall provide both the First Article and the production quantity at the same facility and shall submit a certification to this effect with each First Article.

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved

OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.		B. EXHIBIT	C. CATEGORY: TDP <input type="checkbox"/> TM <input type="checkbox"/> OTHER <input type="checkbox"/>		
D. SYSTEM/ITEM 9G-1560-00-402-8655		E. CONTRACT/PR NO.		F. CONTRACTOR	

1. DATA ITEM NO. 0003	2. TITLE OF DATA ITEM REQUEST FOR DEVIATION	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) DI-CMAN-80640	5. CONTRACT REFERENCE	6. REQUIRING OFFICE DSCR
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7. DD250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY AS REQUIRED	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION
8. ADP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	

16. REMARKS ORIGINAL	a. ADDRESSEE	b. COPIES	
	DSCR/JUPD	Draft	Final
		Reg	Repro
			1/0
		15. TOTAL	

1. DATA ITEM NO. 0004	2. TITLE OF DATA ITEM REQUEST FOR WAIVER	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) DI-CMAN-80641	5. CONTRACT REFERENCE	6. REQUIRING OFFICE DSCR
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7. DD250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY AS REQUIRED	12. DATE OF FIRST SUBMISSION	14. DISTRIBUTION
8. ADP CODE		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	

16. REMARKS ORIGINAL	a. ADDRESSEE	b. COPIES		
	DSCR/JUPD	Draft	Final	
		Reg	Repro	
			1/0	
		15. TOTAL		1/0

G. PREPARED BY VINCENT J. LOISEAU 0731.14	H. DATE 02/11/03	I. APPROVED BY VINCENT J LOISEAU	J. DATE 02/11/03
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