DEPARTMENT OF HOMELAND SECURITY

Office of Inspector General

110′/123′ Maritime Patrol Boat Modernization Project

United States Coast Guard

OIG-07-27

February 2007

Office of Inspector General

U.S. Department of Homeland Security
Washington, DC 20528

Homeland Security

February 9, 2007

MEMORANDUM FOR: Admiral Thad W. Allen
Commandant
United States Coast Guard

FROM: Richard L. Skinner
Inspector General

SUBJECT: *OIG Complaint Case Number 06-14270: 110′/123′ Maritime Patrol Boat Modernization Project, United States Coast Guard*

On February 10, 2006, our office received a Hotline Complaint alleging that the Coast Guard's 123-foot Island Class Patrol Boats (123' cutter) and short-range prosecutor (prosecutor) contained safety and security vulnerabilities. The 123' cutter is a modification of the 110' Island Class patrol boat and was phased into service as part of the Deepwater project. The original Deepwater plan projected the conversion of forty-nine 110' patrol boats into 123' patrol boats as a bridging strategy to meet patrol boat needs until the new Fast Response Cutter was introduced. The prosecutor is a 24' 6" small boat that can be deployed from the National Security Cutter, Fast Response Cutter, and Offshore Patrol Cutter. The revised Deepwater Implementation Plan calls for the acquisition of 91 prosecutors. The complaint said that these vulnerabilities were the result of the contractor's failure to comply with Command, Control, Communications, Computer, Intelligence, Surveillance, and Reconnaissance (C^4ISR) design requirements as defined in the Deepwater contract. Specifically, the complainant alleged that:

- The safety of the 123′ cutter's crew was compromised by the contractor's failure to utilize low smoke cabling;
- The contractor knowingly installed aboard the 123′ cutter and prosecutor external C^4ISR equipment that did not meet specific environmental requirements outlined in the Deepwater contract;
- The cable installed during the upgrade to the cutter's C^4ISR system represented a security vulnerability; and,
- The video surveillance system installed aboard the 123′ cutter does not meet the cutter's physical security requirements.

Finally, the complainant provided information detailing his attempts, over a 2 ½ year period, to compel the contractor to comply with Deepwater contract requirements.

On February 16, 2006, we began our inquiry into the allegations of the hotline complaint. We analyzed documentation, reviewed test reports, conducted interviews, and attended briefings by key Deepwater Program staff. We also examined TEMPEST test results to determine the extent to which the C^{4}ISR systems installed aboard the 123' cutters met TEMPEST certification standards. TEMPEST is an unclassified short name referring to investigations and studies of compromising emanations. Compromising emanations are unintentional intelligence-bearing signals that, if intercepted and analyzed, will disclose classified information when they are transmitted, received, handled, or otherwise processed by any information processing equipment. The Coast Guard was responsive to all of our requests for interviews, briefings, information, and documentation requests associated with our review.

Current Status of 123' Cutter Fleet

For reasons unrelated to the issues identified in this report, operations of the 123' cutter fleet have been suspended. On November 30, 2006, the Coast Guard announced that it was suspending operations of all eight 123' cutters due to the continuing deformation of the hulls that in some instances resulted in hull breaches. These problems had previously resulted in the implementation of operating restrictions that severely undermined the mission effectiveness of 123' cutter fleet. However, these operating restrictions did not resolve the hull deformation problem but rather mitigated their impact on crew safety. Consequently, the Coast Guard had to consider whether to implement additional operational restrictions in order to meet minimum crew safety requirements or to suspend 123' cutter operations until a solution to these problems could be identified and implemented. The Coast Guard determined that additional operating limitations would have further undermined the operational effectiveness of the 123' cutter. For these reasons, 123' cutter fleet were withdrawn from service. Although the cutter operations have been suspended, the Coast Guard has not yet determined the final disposition of the 123' cutter fleet.

Results of Review

Aspects of the C^{4}ISR equipment installed aboard the 123′ cutters do not meet the design standards set forth in the Deepwater contract. Specifically, two of the four areas of concern identified by the complainant were substantiated and are the result of the contractor not complying with the design standards identified in the Deepwater contract. For example, the contractor did not install low smoke cabling aboard the 123' cutter, despite a Deepwater contract requirement that stated, “all shipboard cable added as a result of the modification to the vessel shall be low smoke.” The intent of this requirement was to eliminate the polyvinyl chloride jacket encasing the cables, which for years produced toxic fumes and dense smoke during shipboard fire. Additionally, the contractor installed C^{4}ISR topside equipment aboard both the 123' cutters and prosecutors, which either did not comply or was not tested to ensure compliance with specific environmental performance requirements outlined in the Deepwater contract.

The remaining two areas of concern identified by the complainant were in technical compliance with the Deepwater contract and deemed acceptable by the Coast Guard. Specifically, while the type of cabling installed during the C^{4}ISR system upgrade to the 123’ cutter was not high-grade braided cable; the type of cable used met the Coast Guard's minimum-security standards as required by the

Deepwater contract. Concerning the installation of the video surveillance system, while the system did not provide 360 degrees of coverage, it met minimum contract requirements. Specific concerns identified in the complaint are discussed below.

Low Smoke Cabling (123′ Cutter). — Low smoke cabling was not used during the installation of the C^{4}ISR systems aboard the 123′ cutter, despite a Deepwater contract requirement that "all shipboard cable added as a result of the modification to the vessel shall be low smoke." Although the contractor had previously requested a deviation from the low smoke requirements during May 2004, the request was not approved until December 2004. By then, several 123′ cutters had been delivered and accepted by the Coast Guard.

The contractor indicated in its May 2004 request for deviation that approximately 680 cables (or 85 cables per cutter) did not meet the low smoke requirements identified in the contract, because the "cables are either vendor provided as part of the equipment suite, are vendor proprietary, and/or are not available in a low smoke configuration." (See Enclosure 2.) The contractor's request for a deviation from the low smoke cable requirement identified the cable, its type, and its function. It did not, however, indicate the flammability and toxicity characteristics of the sub-standard cables installed. As a result: (1) the contractor installed non low smoke cable aboard at least four 123′ cutters before receiving a Coast Guard approved deviation from the low smoke cable requirements; (2) the contractor incorrectly self-certified compliance with low smoke requirements; and (3) the Coast Guard did not exercise due diligence in determining the flammability and toxicity characteristics of the replacement cables being installed prior to issuance of the deviation.

C^{4}ISR Topside Equipment Installations (123′ Cutter and Short Range Prosecutor). —The contractor installed C^{4}ISR topside equipment aboard the 123′ cutter and prosecutor that do not meet minimum design and performance requirements as specified in the Deepwater contract. Specifically, 30 C^{4}ISR system components were installed aboard the 123′ cutter and 12 C^{4}ISR system components were installed aboard the prosecutor that do not meet environmental requirements. Additionally, the contractor self-certified that the C^{4}ISR system components installed aboard the 123′ cutter and prosecutors fleets complied with the contract environmental performance standards when, in fact, they did not.

According to the Deepwater contract, the topside equipment aboard the 123′ cutters and prosecutors were required to meet the environmental performance specifications as defined by the Cutter Certification Matrix and the prosecutor performance specifications. The purpose of these requirements was to ensure that the C^{4}ISR systems installed aboard the 123′ cutters and prosecutors remained fully operational when operated under extreme weather, sea, and atmospheric conditions. This is a critical requirement given the Coast Guard's propensity to operate their cutters and small boats under such conditions.

In the case of the 123′ cutter *Matagorda*, the contractor incorrectly indicated on the self-certification documentation that there were no applicable requirements stipulated in regard to weather environment requirements, and that the certification is "not really beneficial." (See Enclosure 3.) However, the self-certification documentation references MIL-STD 1399C, Section 302, as the weather environment standard for certification requirements, which clearly stipulates minimum and maximum weather environment limits. (See Enclosure 4.) Additionally, the certificates of conformance provided with the eight 123′ cutters and eight prosecutors did not indicate that the Coast Guard had

previously approved any deviation or waiver from the environmental performance requirements identified in the contract. According to the Coast Guard, they were unaware that the 123′ cutters and prosecutors were not compliant with the environmental performance specifications until July 2005. By then, seven 123' cutters had been delivered to and accepted by the Coast Guard. A working group composed of contract and Coast Guard personnel was subsequently established to resolve these contract discrepancies. To date, these discrepancies remain unresolved.

On August 29, 2006, Coast Guard received a letter from the contractor indicating that the C^4ISR topside equipment installed aboard the 123′ cutters and the prosecutors either did not meet minimum environmental requirements as specified in the Deepwater contract or had not been evaluated against environmental performance requirements specified in the Deepwater contract prior to installation. According to the contractor, testing each of these components would be "time consuming, expensive, and of limited value." Instead the contractor stated its intention to submit Request For Waivers for each of the topside components whose performance either did not meet contract requirements or had not been evaluated against contract environmental performance requirements. The contractor stated that the Request For Waivers presented "an acceptable and reasonable approach, since most of the environmental specifications guard against weather conditions the 123′ [cutter] and [prosecutors] will likely never experience in their assigned duties, and due to the fact the environmental requirements were clarified after the 123′ [cutters] were produced and deployed." (See Enclosure 5.)

However, we identified the following facts and circumstances:

- The C^4ISR topside equipment requirements for the 123′ cutter were clearly defined in the Cutter Certification Matrix. If the contractor was unclear about the requirements, it was incumbent on them to obtain the necessary clarification before purchasing, installing, and certifying the installation as meeting the requirements;
- At the time the topside equipment was purchased and installed, the Coast Guard planned to deploy the 123′ cutters and prosecutors along the U.S. Atlantic, Pacific, and Gulf coasts. The contractor could not have known that structural design problems would later force the Coast Guard to deploy all eight 123′ cutters to Key West, Florida; and
- The Coast Guard's original and revised Deepwater Implementation Plans called for the acquisition of at least 91 prosecutors, the majority of which were to be deployed aboard the 123′ cutter, the National Security Cutter, and the Fast Response Cutter. These cutters were originally intended to form the nucleus of the Coast Guard's Deepwater surface fleet. Given the Coast Guard's intention to deploy the National Security Cutter and Fast Response Cutter (or its replacement), offshore along the U.S. Atlantic, Pacific, and Gulf coasts, the contractor's assertion that prosecutors would not be operated in areas where severe environmental conditions could affect performance, is not accurate.

  To date, the Coast Guard has not indicated whether they will grant the contractor's request for waiver. Regardless of their decision, the outcome is unlikely to be satisfactory. For example, should the Coast Guard decide to enforce the contract, 123′ cutters, and to a lesser extent the prosecutors, will have to be withdrawn from service while the necessary modifications are made, further exacerbating the patrol boat capability gap. However, should the Coast Guard grant the contractor's request for waiver, they will be accepting the additional crew safety and operational

limitations associated with the operation of equipment that does not meet Deepwater contract or Deepwater mission requirements.

Shielded Cable (123' Cutter). — The contractor used Aluminum/Mylar shielded cable as part of the cutter upgrade. While the installation of this type of cable met minimum Deepwater contract requirements for shielded cable, it does not have the mechanical durability afforded braided metallic shielded cable. According to Coast Guard, Aluminum/Mylar shielded cable is not as good as braided cable for applications required to meet TEMPEST requirements. However, the contract required the use of only "shielded" - not "braided metallic shielded" - cable, as recommended by the National Security Telecommunications and Information Systems Security Advisory Memorandum TEMPEST/2-95, RED/BLACK Installation Guidance: "To reduce radiation of CE [compromising emissions], metallic cables should have a minimum of one overall braided metallic shield, with the shield terminated at both ends to the grounding network."

The Coast Guard noted in its visual inspection of the first 123′ cutter (*Matagorda*), that the Aluminum/Mylar cable might pose a TEMPEST hazard. However, the Coast Guard elected to accept the risk associated with this type of shielded cable.

The complaint also alleged that the use of non-braided cable would limit the 123' cutter's ability to meet TEMPEST testing requirements. However, TEMPEST testing conducted on the *Matagorda* and *Padre* between February 2004 and July 2006 indicated the cabling installed during the C^4ISR upgrade was not a source of compromising emissions.

Video Surveillance System (123' Cutter). — The video surveillance system currently installed on the 123′ cutter does not provide a 360-degree field of view. According to the Coast Guard, the Cutter performance specification contained in the Deepwater contract specified only that a video surveillance system be installed. It did not state the number of cameras to be installed or a requirement that the system provide 360-degrees of coverage. As a result, the installation consists of a four-camera system (with coverage gaps) that meets minimum Deepwater contract requirements but may not meet all of the 123' cutter's surveillance and security requirements. According to Coast Guard, the current configuration of the video surveillance system, supplemented by the intrusion detection alarm system, satisfies its cutter surveillance and security requirements. We are concerned that:

- The contractor would knowingly design and install a video surveillance system aboard the 123′ cutter that had coverage gaps, which could cause security vulnerabilities; and
- That the Coast Guard would accept delivery of a shipboard video surveillance system containing such vulnerabilities.

We are also concerned that vague and unspecified requirements in the Deepwater contract could lead to the installation of video surveillance systems aboard the National Security Cutter, Fast Response Cutter, and Offshore Patrol Cutter that meet Deepwater contract requirements but contain similar security vulnerabilities. If the Coast Guard believes that the video surveillance systems aboard its Deepwater cutters should provide 360-degrees of coverage, they should ensure that future Deepwater contracts reflect that requirement.

Conclusions and Recommendations

Our review raises many concerns about Coast Guard's program and technical oversight of the Deepwater contractor responsible for the 110′/123′ Modernization Project. For example, the contractor purchased and installed hundreds of non low smoke cables prior to Coast Guard's approval of the Request for Deviation. Additionally, we are concerned that Coast Guard accepted delivery and operated four 123' cutters without knowing the extent of the hazards associated with the use of the non low smoke cabling. The contractor also purchased and installed hundreds of C^4ISR topside components aboard the 123' cutter and prosecutor knowing that they either did not meet contract performance requirements or compliance with the requirements had not been verified. Had Coast Guard reviewed the contractor's self-certification documentation the fact that the contractor had not complied with the stated weather environment standard would not have escaped its attention. For these reasons, we are concerned that similar safety and performance issues could impact the operational effectiveness of C^4ISR system upgrades recently installed aboard its legacy fleet of cutters.

To address the contract execution and technical oversight concerns and to help prevent similar issues from occurring in the future, we recommend to the Commandant, U.S. Coast Guard:

1. Investigate and address the low smoke cabling and C^4ISR topside equipment installation issues identified in the Hotline Complaint. The response should include a description of the circumstances and conditions underlying these issues as well as the steps being taken or contemplated by the Coast Guard to prevent similar technical oversight issues from affecting the remaining surface assets to be modernized or acquired through the Deepwater Program.

2. Develop and implement a plan to improve the process for reviewing and adjudicating contractor Requests for Deviations/Waivers. The plan should ensure that all waiver requests are resolved prior to implementation and that the rationale underlying these decisions is formally documented.

Management Comments and OIG Analysis

We obtained written comments on the draft of this report from the Coast Guard on January 31, 2007. In its comments, the Coast Guard concurred with principle findings of this report as well as the two recommendations. We have included a copy of the comments in their entirety in Enclosure 1 of this report.

Recommendation #1:

Investigate and address the low smoke cabling and C^4ISR topside equipment installation issues identified in the Hotline Complaint. The response should include a description of the circumstances and conditions underlying these issues as well as the steps being taken or contemplated by the Coast Guard to prevent similar technical oversight issues from affecting the remaining surface assets to be modernized or acquired through the Deepwater Program.

Coast Guard Response: *Concur*

Comments Specific to Low Smoke Cabling

Coast Guard Comment: Coast Guard indicated that no further action is required for the low smoke cabling by Integrated Coast Guard Systems or the Coast Guard. According to the Coast Guard, the cables installed during the modification either meet the low smoke requirement or, if they do not meet the low smoke requirement, they are covered by the Request for Deviation.

OIG Response: We appreciate Coast Guard's response to the low smoke cabling concerns addressed in the report. However, Coast Guard's response does not detail the underlying circumstances and conditions that resulted in: (1) non low smoke cabling being installed prior to approval of the request for deviation, (2) incorrect certification of compliance with low smoke requirements, and (3) Coast Guard's subsequent approval of the Request for Deviation without determining the flammability and toxicity characteristics of the replacement cables being installed. An understanding of the chain of events that contributed to the aforementioned circumstances is key to the success of any plan that is put into place to prevent similar mistakes from occurring during the course of the National Security Cutter, Fast Response Cutter, and Offshore Patrol Cutter acquisitions. Finally, we remain concerned that Coast Guard is still not fully aware of the extent that the hazards the non low smoke cables represent should the Coast Guard decide to place the 123' cutters back into operational service.

Comments Specific to C^4ISR Equipment Installation

Coast Guard Comment: Coast Guard indicated that Integrated Coast Guard Systems is attempting to determine to what extent the 42 topside equipment installations on each 123' cutter meet the requirements of the Deepwater contract. According to Coast Guard, they are working to resolve the contractor's request for deviation in conjunction with the 123' cutter program closeout.

OIG Response: We appreciate Coast Guard's response to the C^4ISR topside equipment installation concerns addressed in the report. However, Coast Guard's response does not detail the underlying circumstances and conditions that resulted in: (1) the contractor not being aware of the topside equipment requirements for the 123’ cutter that were identified in the Deepwater contract, and (2) the contractor incorrectly certifying that the 123’ cutter was compliant with all topside equipment requirements when in fact, it was not. The response also does not explain what actions are being taken or planned to resolve the topside equipment issues associated with the short range prosecutor. Once again, an understanding of the chain of events that contributed to the aforementioned circumstances is key to the success of any plan that is put into place to prevent similar mistakes from occurring during the course of the National Security Cutter, Fast Response Cutter and Offshore Patrol Cutter acquisitions. We remain concerned about the operational readiness of the 123’ cutter and the short range prosecutor in the event that either vessel is placed back into service and deployed to regions that exceed the environmental limitations of their C^4ISR equipment.

Comments Specific to the Steps Taken to Prevent Similar Oversight Issues

Coast Guard Comment: Coast Guard indicated that it has already taken steps to increase contractual and program management oversight within all follow on cutter programs modernized or acquired through the Integrated Deepwater System. Some of the more significant steps that Coast Guard has indicated that it plans to implement are:

- Increased the number of staff that provides on-site technical and contractual oversight within its Program Management Representative Office, Gulf Coast;
- Incorporating lessons learned from the 123' cutter modernization program to reduce the risk of similar problems with the National Security Cutter, Off Shore Patrol Cutter, and Fast Response Cutter programs;
- Intention to minimize the extent of contractor self-certification of compliance with contractual requirements;
- Designated the Assistant Commandant for Engineering and Logistics Resources as the Technical Authority for Deepwater;
- Consolidation of Coast Guards acquisition activities; and,
- Use of independent third party evaluations of new asset designs.

Additionally, Coast Guard indicates that it has taken steps to improve contractual oversight in the new award term criteria, which requires additional reporting mechanisms, includes new IPT performance measures, and additional insight into the contractor's actions in controlling cost, schedule and performance.

OIG Response: We appreciate Coast Guard's response, which details the steps it has taken, or plans to take, to address the technical and program management oversight issues identified in this report. If fully implemented, these changes should significantly increase the level of technical oversight exercised over the Deepwater Program. Overall, we find the changes that the Coast Guard has detailed in its response to this report to be very encouraging and a step in the right direction. We look forward to working closely with the Coast Guard to continue the improvement of the efficiency, effectiveness, and economy of the Deepwater Program.

Recommendation #1 will remain open until Coast Guard provides the information behind the circumstances and conditions that contributed to the low smoke cable and C^4ISR external equipment concerns and the specific steps taken by Coast Guard to prevent reoccurrence of similar problems.

Recommendation #2:

Develop and implement a plan to improve the process for reviewing and adjudicating contractor Requests for Deviations/Waivers. The plan should ensure that all waiver requests are resolved prior to implementation and that the rationale underlying these decisions is formally documented.

Coast Guard Response: ***Concur***

Coast Guard Comment: Coast Guard indicated that it has developed a new Class I Engineering Change Proposal/Request for Deviation/Request for Waiver Review Process to improve facilitation and oversight of recommended changes and deviations to existing Deepwater Asset requirements. The new procedures include a Joint Configuration Control Board made up of technical experts and contracting officers who will review and resolve Engineering Change Proposals, Request for Deviations, and Request for Waivers prior to implementation. The new process is scheduled to go before the Joint Configuration Control Board and then to the Program Management Team during the second quarter FY07 for approval.

OIG Response: We appreciate Coast Guard's response, which details the steps it has taken to review and adjudicate Engineering Change Proposals, Request for Deviations, and Request for Waivers. We find the new procedures detailed in Coast Guard's response to this report to be very encouraging and a step in the right direction. We look forward to the opportunity to review the new procedures in conjunction with closing Recommendation #2.

Recommendation #2 will remain open until Coast Guard fully implements the procedures that it describes in its response and until we have had opportunity to review them.

Note: We conducted this inquiry into the allegations of the hotline complaint pursuant to our authority under the Inspector General Act of 1978, as amended. This inquiry was not conducted in accordance with generally accepted government auditing standards.

U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard

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7500

29 JAN 2007

MEMORANDUM

From: R.J. Papp, Jr., VADM
Chief of Staff, U.S. Coast Guard

Reply to Attn of: CG-823
Mark Allen Kulwicki
267-2294

To: Inspector General

Subj: DHSOIG REPORT: "110'/123' Maritime Patrol Boat Modernization Project"

Ref: (a) DHSOIG Draft Report Complaint Case Number 06-14270

1. This memorandum transmits the Coast Guard's response to your draft report's findings and recommendations contained in reference (a).

2. If you have any questions, please contact Mark Kulwicki at (202)-372-3533.

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Enclosures: (1) U.S. Coast Guard Response to DHSOIG Audit

UNITED STATES COAST GUARD (USCG) STATEMENT ON DEPARTMENT OF HOMELAND SECURITY INSPECTOR GENERAL REPORT

TITLE: "OIG COMPLAINT CASE NUMBER 06-14270: 110'/123' MARITIME PATROL BOAT MODERNIZATION PROJECT, UNITED STATES COAST GUARD"

UNITED STATES COAST GUARD POSITION:

The efforts of the Department of Homeland Security (DHS) Office of Inspector General (OIG) in documenting areas for improvement within the Integrated Deepwater System (IDS) Program are appreciated. Observations and input from external reviewers provide the Coast Guard with valuable insight that the IDS Program uses, along with other reviews, to drive continual improvement.

The Coast Guard concurs with the principal findings of this report as well as the recommendations and is in the process of implementing corrective measures.

SPECIFIC COAST GUARD RESPONSES TO DHS OIG RECOMMENDATIONS:

Recommendation #1:
"Investigate and address the low smoke cabling and C4ISR topside equipment installation issues identified in the Hotline Complaint. The response should include a description of the circumstances and conditions underlying these issues as well as the steps being taken or contemplated by the Coast Guard to prevent similar technical oversight issues from affecting the remaining surface assets to be modernized or acquired through the Deepwater Program"

Coast Guard Response: Concur and already implemented

Low Smoke Cabling:

No further action for low smoke cabling is required by Integrated Coast Guard Systems (ICGS) or the Coast Guard. The Requests for Deviation (RFD) were approved by the Coast Guard in December 2004 and incorporated in the respective Delivery Task Orders (DTOs). All cables installed on the 123'WPB as a result of the modification either meet the low-smoke requirement or if they do not meet the low-smoke requirement, they are covered by the RFD.

C4ISR Equipment Installation:

On 28 August 2006, ICGS provided the Coast Guard with an itemized list of 42 topside items (30 on 123' WPB, 12 on Short Range Prosecutor (SRP)) ranging from radios to antennae that failed to meet or did not have established vendor data to indicate compliance with the performance specifications. ICGS is approaching respective vendors to obtain additional information where no data is available to indicate compliance with Coast Guard requirements. The Coast Guard is working to resolve all proposed RFDs in conjunction with 123' WPB conversion program close-out.

Steps Taken to Prevent Similar Oversight Issues:

To address the DHS OIG's technical oversight concerns, the Coast Guard has already taken steps to increase contractual and program management oversight within all follow-on cutter programs modernized or acquired through IDS.

Specifically, the Coast Guard has increased the number of employees at the Program Management Representative Office (PMRO) Gulf Coast to 41 full time and six Pre-Commissioning Crew Assembly Facility (PCAF) personnel. An additional 11 full time billets are approved for 2007, bringing the total number of full time personnel to 52. As a result of the 123' WPB lessons-learned, we've steadily increased the oversight across all other assets (NSC, OPC & FRC). This is an important distinction because the 123' WPB PMRO was started as a separate entity with one individual. The number of personnel at the time of the stop work (11 JUL 05) had only increased to seven.

These employees provide on-site technical and contractual oversight as well as act as the on-site liaison to the asset program manager located in the program office. The PMRO information and oversight, together with weekly Integrated Product Team (IPT) meetings and six periodic management reviews per year, has improved the Coast Guard's insight and awareness of Integrated Coast Guard Systems' (ICGS) adherence to contract requirements and quality.

Using lessons learned from the 123' WPB, the USCG has initiated steps on the National Security Cutter (NSC), the Offshore Patrol Cutter (OPC) and the Fast Response Cutter (FRC) programs to reduce the risk of similar problems.

In particular, the USCG intends to minimize the extent of self-certification of standards by ICGS in requiring that the FRC be classed by American Bureau of Shipping (ABS) to the High Speed Naval Craft (HSNC) Rules. In a collaborative environment, representatives of the USCG and ICGS are tailoring the Cutter Specific Certification Matrix (CSCM) to maximize the use of ABS HSNC standards. The USCG also intends for ABS to certify other standards in the CSCM that are not part of HSNC classification but for which ABS has the right technical skills. Similar programs will be used for the OPC and introduced into the NSC program over the next several contract awards.

The Coast Guard has taken steps to improve contractual oversight outlined in the new award term criteria, which requires additional reporting mechanisms, includes new IPT performance measures of success, and additional insight into the contractor's actions in controlling costs schedule and performance.

In regards to program management, the Coast Guard has initiated the following improvements:

1. Designation of the Assistant Commandant for Engineering and Logistics Resources as the Technical Authority for Deepwater;
2. Consolidation of Coast Guard acquisition activities (Deepwater, Office of Acquisition, acquisition policy, Research and Development Center) into one directorate to increase efficiency;

3. Extensive progress in the implementation of the GAO recommendations resulting from the 2004 Deepwater Contract Management audit;
4. Commitment to seek independent, third party evaluations of new asset designs in Deepwater;
5. Increase in Government staffing at Deepwater manufacturing facilities focusing on contract/quality management;
6. Increase in funds for Government Program Management for Deepwater; and
7. Lessons Learned Exchange within Coast Guard and the Department of Homeland Security.

Recommendation #2:
"Develop and implement a plan to improve the process for reviewing and adjudicating contractor Requests for Deviation/Waivers. The plan should ensure that all waiver requests are resolved prior to implementation and that the rationale underlying these decisions is formally documented."

Coast Guard Response: Concur

The Deepwater Configuration Management Team has developed a new Class I Engineering Change Proposal (ECP)/Request For Deviation (RFD)/Request For Waiver (RFW) Review Process to improve facilitation and oversight of recommended changes and deviations to existing Deepwater Asset requirements.

The new procedures include a Joint Configuration Control Board (JCCB) made up of technical experts and contracting officers who review and resolve ECP/RFD/RFWs prior to implementation. This ensures that all ECP/RFD/RFWs requests are reviewed and resolved in a timely and consistent manner and according to pre-determined guidelines. Additionally, the new process requires formal documentation for submitting an ECP/RFD/RFW, the technical review assessment (if needed) and the formal decision to accept or deny the ECP/RFD/RFW. Unacceptable RFD/RFW/ECPs would be immediately rejected preventing further disruption to the cost/schedule/performance as a result of the request change or deviation. ICGS will be tasked with tracking all RFDs and RFWs so they are processed in an expedient manner. It is projected that RFDs and RFWs will be completed in 2-3 months under this new process. This new process is scheduled to go before the JCCB and then to the Program Management Team (PMT) during the second quarter FY07 for approval.

CONCLUSION:
The Coast Guard recognizes the significant investment of time these audits require on the part of the Coast Guard, industry, and the DHS OIG. The Coast Guard will continue to cooperate with the DHS OIG staff in the fullest way possible.

U.S. Department of Homeland Security

United States Coast Guard

Commandant
United States Coast Guard
Deepwater System Integration
Program Office

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December 21, 2004
02-F-2DW079.217
RFR# 050019

Mr. Kevin O'Neill
Director of Contracts
Integrated Coast Guard System
1530 Wilson Boulevard, Suite 400
Arlington, VA 22209

Subject: Production and Deployment for Major Modification of 110/123 Class Patrol Cutter Lot 1 (CLIN 0055D) RFD 452, Low Smoke Cables.

Dear Mr. O'Neill:

The U. S. Coast Guard (USCG) has completed its review of RFD 452, Low Smoke Cable waiver, final version, submitted to USCG on December 6, 2004 by Integrated Coast Guard Services (ICGS). The Coast Guard has no further comments and hereby accepts the waiver for non low smoke cables as listed in the RFD, enclosed in this letter.

Although this RFD will affect hulls 1-12 only, a no-cost administrative modification will eventually have to be incorporated into the contract.

This letter will be posted into the Integrated Product Data Environment (IPDE) in accordance with the automated workflow process. Please contact me if you have any questions or concerns.

Sincerely,

for

Daniel J. Hartinger
Contracting Officer
United States Coast Guard (G-ACS-6)

Enclosure: RFD 452- Electric Cables(123 WPB Non low-Smoke Cables)
Copy: Benjamin Fleming, COTR, USCG (G-DPM-4)

REQUEST FOR DEVIATION/WAIVER (RFD/RFW)

1. DATE (YYYYMMDD): 20040530

Form Approved OMB No. 0704-0188

2. PROCURING ACTIVITY NUMBER: DW00000647

3. DODAAC: Q99290

4. ORIGINATOR

a. TYPED NAME (First, Middle Initial, Last): Kevin R Frei

b. ADDRESS (Street, City, State, Zip Code): Lockheed Martin MS2, 199 Borton Landing Road, Moorestown, NJ 08057

5. (X one): [X] DEVIATION [ ] WAIVER

6. (X one): [ ] MINOR [X] MAJOR [ ] CRITICAL

7. DESIGNATION FOR DEVIATION/WAIVER

a. MODEL/TYPE	b. CAGE CODE	c. SYS. DESIG.	d. DEV./WAIVER NO.
N/A	N/A	N/A	N/A

8. BASELINE AFFECTED: [ ] FUNCTIONAL [ ] ALLOCATED [X] PRODUCT

9. OTHER SYSTEM/CONFIGURATION ITEMS AFFECTED: [ ] YES [X] NO

10. TITLE OF DEVIATION/WAIVER

Cutter Certification Matrix Sort No. 452 - Electric Cable (123' WPB Non-Low Smoke Cables)

11. CONTRACT NO. AND LINE ITEM

DTCG23-02-C-2DW001
DTCG23-02-F-2DW079

12. PROCURING CONTRACTING OFFICER

a. NAME (First, Middle Initial, Last): Dan Hartinger

b. CODE

c. TELEPHONE NO. 571-218-3253

13. CONFIGURATION ITEM NOMENCLATURE

see attached list of cables

14. CLASSIFICATION OF DEFECT

a. CD NO.	b. DEFECT NO.	c. DEFECT CLASSIFICATION
N/A	N/A	[ ] MINOR [ ] MAJOR [ ] CRITICAL

15. NAME OF LOWEST PART/ASSEMBLY AFFECTED

See attached list of cables

16. PART NO. OR TYPE DESIGNATION

See attached list of cables

17. EFFECTIVITY

123' WPB Hulls 1-12

18. RECURRING DEVIATION/WAIVER: [X] YES [ ] NO

19. EFFECT ON COST/PRICE

None if Approved

20. EFFECT ON DELIVERY SCHEDULE

None if Approved

21. EFFECT ON INTEGRATED LOGISTICS SUPPORT, INTERFACE OR SOFTWARE

None if Approved

22. DESCRIPTION OF DEVIATION/WAIVER

The As-Built Configuration of the 123' WPB does not meet the following standard for low-smoke cables: MIL-C-24643A(2) The list of cables that do not meet this standard, along with the equipment they are connected to and where they are located is attached here.

23. NEED FOR DEVIATION/WAIVER

These cables are either vendor provided as part of the equipment suite, are vendor proprietary, and/or are not available in a low-smoke configuration.

24. CORRECTIVE ACTION TAKEN

N/A

25. SUBMITTING ACTIVITY

a. TYPED NAME (First, Middle Initial, Last): Kevin R. Frei

b. TITLE: 123' WPB Lead System Engineer

c. SIGNATURE: Kevin R. Frei

26. APPROVAL/DISAPPROVAL: a. RECOMMEND [ ] APPROVAL [ ] DISAPPROVAL

b. APPROVAL: [X] APPROVED [ ] DISAPPROVED

c. GOVERNMENT ACTIVITY: G-DPM-4

d. TYPED NAME (First, Middle Initial, Last): CHAD JACOBY

e. SIGNATURE: [signature] LCDR, PE

f. DATE SIGNED (YYYYMMDD): 21 DEC04

g. APPROVAL: [ ] APPROVED [ ] DISAPPROVED

h. GOVERNMENT ACTIVITY

i. TYPED NAME (First, Middle Initial, Last)

j. SIGNATURE

k. DATE SIGNED (YYYYMMDD)

DD FORM 1694, AUG 96 (EG) PREVIOUS EDITION MAY BE USED. Designed using Perform Pro, WHS/DIOR, Aug 96

INTEGRATED COAST GUARD SYSTEMS
DEEPWATER
1530 Wilson Boulevard, Suite 400, Arlington, Virginia 22209

In reply refer to:
ICGS.04.361

26 August 2004

Mr. Dan Hartinger
Contracting Officer
U.S. Coast Guard
Deepwater Systems Integration Project Office
1530 Wilson Boulevard, Suite 400
Arlington, VA 22209

Subject: Request for Deviation/Waiver Number DW00000647, Non-Low Smoke Cables (SDR 452)

Reference:
(a) Delivery Task Order DTCG23-03-F-2DW079, CLIN 0055D, Detail Design and Construction for Major Modification of 110/123 Class Patrol Cutter Lot 1 Lead Ship
(b) Delivery Task Order DTCG23-03-F-2DW196, CLIN 0055EA, Production and Deployment for Major Modification of 110/123 Class Patrol Cutter Lot 2 (follow ship 2)
(c) Delivery Task Order DTCG23-03-F-2DW247, CLIN 0055EB, Production and Deployment for Major Modification of 110/123 Class Patrol Cutter Lot 3 (follow ship 3)
(d) Delivery Task Order DTCG23-03-F-2DW302, CLIN 0055FA, Production and Deployment for Major Modification of 110/123 Class Patrol Cutter Lot 4 (follow ship 4-8, option for follow-ships 9-12)

The subject Request for Deviation, applicable to the referenced delivery task orders, is submitted for your approval.

Please direct all correspondence relating to this matter to the undersigned who can be contacted at (571) 227-6770. Technical issues should be directed to Mr. Rick Wharton, 123' Conversion Surface Asset Manager, who can be contacted at (571) 218-3221.
Sincerely,

John A. Catalano
ICGS Surface Contracts Manager

Cc: A. Agnew, J. Anton, R. Benson, G. Good, J. Hested, R. Huber, D. Illuminate, D.Miante, J. St. Jean, F. Socko, R. Wharton, R. Wright

S016 Certification Document
Integrated Coast Guard Systems Certification of Compliance with Contract Requirements as Defined in the 123 Ft WPB Certification Plan

CLIN: 0055D	Cutter Name: Matagorda	Hull No: 1303
Sort No: 21	Sort Title: General Requirements for Design and Construction	

Standard: MIL-STD-1399C
Amplification of Standard: Sect. 301 for ship motion and attitude. Section 302 for weather environment.

☑

Integrated Coast Guard Systems, LLC (ICGS), by and through its duly authorized representative identified below, hereby certifies that:

1) The above named 123 Ft WPB is designed and constructed in accordance with the references cited in the 123 Ft WPB Certification Matrix as stated above, except since neither section included in the amplification is part of the standard certification cannot be made.

2) To the best of its knowledge, the 123 Ft WPB is in compliance with all applicable requirements of the references cited, but there are no applicable requirements as stipulated this certification is not really beneficial.

This certification is made by ICGS and is signed by a duly authorized representative of ICGS, who is so authorized by reason of his position as the subcontractor to Northrop Grumman Ship Systems (NGSS) who is a subcontractor to ICGS.

Signature: D-A	Date: 3/5/05
Printed Name: Dennis Fanguy	Title: VP of Engineering Bollinger Shipyards Lockport, LLC

☐

The compliance of the above named 123 Ft WPB with the requirements of the references cited in the 123 Ft WPB Certification Matrix as stated above has been verified by a representative of an independent agency.

The certification document issued by the independent agency is attached.

INCH-POUND
MIL-STD-1399(NAVY)
SECTION 302A
29 February 1988
SUPERSEDING
DOD-STD-1399(NAVY)
SECTION 302
20 March 1972
(See 6.3)

MILITARY STANDARD

INTERFACE STANDARD FOR SHIPBOARD SYSTEMS

SECTION 302

WEATHER ENVIRONMENT

AMSC N/A FSC 1990
DISTRIBUTION STATEMENT A Approved for public release; distribution unlimited

THIS DOCUMENT CONTAINS 9 PAGES.

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND

Washington, DC 20362-5101

Interface Standard for Shipboard Systems, Weather Environment

1. This Military Standard is approved for use by Commands of the Navy in the technical development plans, design, and acquisition specifications for new ship acquisitions, ship modernizations or conversions, and systems/equipment for installation therein and into active fleet ships.

2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

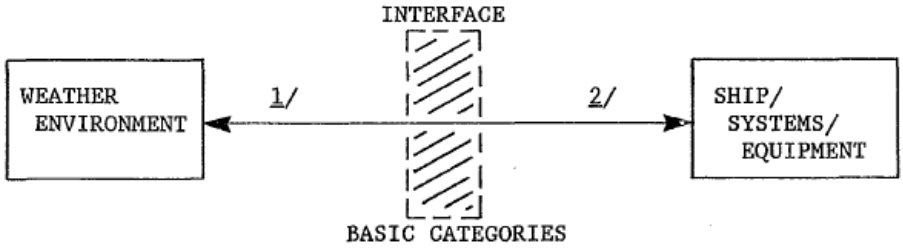
CONTENTS

1. GENERAL, SCOPE, INTERFACE AND APPLICABILITY

1.1 General. This section is an integral part of MIL-STD-1399. When the interface between the weather environment and ship/systems/equipment is under consideration this section and the standard must be viewed as a single document. The procedures established by MIL-STD-1399 are mandatory.

1.2 Scope. This section establishes interface requirements for shipboard systems/equipment which are exposed to or affected by the weather to ensure compatibility between such systems/equipment and the weather environment.

1.3 Interface. The interface which is the concern of this section and the basic characteristic and constraint categories involved at this interface are shown symbolically on figure 1 (see "Definitions" of MIL-STD-1399):



1/ CHARACTERISTICS	2/ CONSTRAINTS
Air temperature	Compatability
Water temperature	Air conditioning/ventilating
Wind	Heating
Precipitation	Wind loading
Humidity	Snow and ice loading
Solar radiation	Wave slap

FIGURE 1. Interface.

The particular interface characteristics and constraints pertinent to this section are described in 5.2 and 5.3.

1.4 Applicability. This section applies to the weather environment (see 3.1) as it relates to the design of ships/systems/equipment. It does not apply to the concomitant effects of ship motion and attitude or to wave impact and boarding seas.

2. REFERENCED DOCUMENTS

2.1 Issue of documents. The following document of the issue in effect on date of invitation for bids or request for proposal form a part of this standard to the extent specified herein.

MILITARY

STANDARD
MIL-STD-210 - Climatic Extremes for Military Equipment.

(Copies of standards required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer.)

2.2 Order of precedence. In the event of a conflict between the text of this standard and the reference cited herein, the text of this standard shall take precedence.

3. DEFINITIONS

3.1 Weather environment. The weather environment, as used in this section, consists of air and water temperature, humidity, wind and precipitation in the immediate vicinity of the ship.

4. GENERAL REQUIREMENTS

4.1 The specific interface requirements and constraints established herein are mandatory and shall be adhered to by SYSCOMs, PMs, contractors and all others engaged in installation (see "Requirements" of MIL-STD-1399).

5. DETAILED REQUIREMENTS

5.1 Interface characteristics and constraints.

5.1.1 General considerations. Naval ships are designed to operate as required on any navigable ocean in the world and to perform their assigned mission under a wide range of weather conditions. These conditions vary with the time of the year and area of operation. MIL-STD-210 indicates the probable extreme climatic conditions of the natural environment to which Military equipment may be exposed, and establishes uniform limits of normal design requirements not to be exceeded for Military equipment. The values presented therein do not necessarily represent the extremes recorded but are scientific judgement values of climatic extremes which will not be exceeded more than 10 percent of the time during the most extreme month. To assist with the logical design and building of ships which will be capable of reliable, effective operations under anticipated weather environmental conditions, it has been found necessary to establish certain empirical limits with regard to weather factors. This section of MIL-STD-1399 identifies those weather factors which are significant at the shipboard weather environment interface and establishes empirical limits for those factors which may be of concern in ship/systems/equipment design.

5.1.2 Special circumstances. The majority of Naval ships, systems and effected equipment are designed to operate when exposed to the weather environmental limits delineated herein. Certain ships may be designed to meet extremes

of heat or cold when so specified. Specific systems/equipment whose performance will be significantly degraded by occasional excursions beyond these limits may also be designed to tolerate such circumstances.

5.2 Interface characteristics. The interface characteristics of the weather environment are given in table I. Values given are empirical limits for design purposes.

TABLE I. Weather environment.

Weather factor	Limits (Note 1)	
	Maximum	Minimum
Air temperature	100°F (37.8°C) (Note 2)	-20°F (-28.9°C) (with concurrent wind velocity of 40 knots)
Relative humidity	100 percent	10 percent
Wind	75 knots steady; gusts to 100 knots	Not applicable
Precipitation	1 inch per hour rainfall (concurrent wind velocity 35 knots)	Not applicable
Sea temperature	85°F (29.4°C)	28°F (-2.2°C)

Note 1. Propulsion plant components taking air from the weather, such as gas turbine engines, shall be capable of starting and operating satisfactorily in any weather air ambient temperature between minus 40 degrees Fahrenheit (°F)(minus 40 degrees Celsius (°C)) and 125°F (51.7°C) with relative humidity of zero to 100 percent.

Note 2. With respect to maximum air temperature, the heating process of solar radiation and of radiation, conduction and convection in conjunction with own ship generated heat and possible ancillary effects of a mooring/berthing arrangement in port may increase air temperatures at some locations above that of the free air.

5.3 Interface constraints. The interface characteristics of the weather environment impose certain constraints on the design of ships/systems/equipment which are exposed to or affected by this environment. These constraints are described in 5.3.1 through 5.3.7.

5.3.1 Compatibility. The design of ship structure and systems/equipment which are exposed to or affected by the weather environment shall be compatible with the interface characteristics given in 5.2. It shall be assumed that any reasonable combination of these characteristics can occur simultaneously.

5.3.2 Air conditioning and ventilation. Air conditioning and ventilation systems shall be designed to produce the required compartment ambient conditions with a weather air temperature of 90°F (32.2°C) (dry bulb) and 81°F (27.2°C) (wet bulb).

5.3.3 Heating. Heating systems shall be designed to produce the required compartment temperature conditions with a weather air temperature of 10°F (minus 12.2°C).

5.3.4 Wind loading. Ship structure and exposed systems/equipment shall be designed to withstand a wind loading of 30 pounds per square foot (lb/ft^2). For ship structure this applies to the projected area with no reduction for vertical members because of heel.

5.3.5 Snow and ice loading. Ship structure shall be designed for snow and ice loading of 7.5 lb/ft^2. Exposed systems/equipment shall be designed to start and operate properly when covered with an ice load of 4.5 lb/ft^2.

5.3.6 Wave slap. Ship supporting structure and foundations shall be designed for a load transmitted as a result of a wave slap of 500 pounds per square inch acting on the projected area of that portion of equipment and machinery, mounted on the weather deck that is located beneath a line establishing for the hydrostatic head specified for weather deck design.

5.3.7 Special ship configurations. When ships are specified to be designed for cold weather operations (ice-strengthened ships) or for Arctic operations, the additional design criteria specified in 5.3.7.1 and 5.3.7.2 shall apply.

5.3.7.1 Cold weather operations.

(a) Heating systems shall be designed to produce the required compartment air temperature conditions on the basis of a weather air temperature of minus 20°F (minus 28.9°C).
(b) Systems/equipment installed in exposed locations shall be designed to operate satisfactorily at a minimum air temperature of minus 40°F (minus 40°C) with a concurrent wind velocity of 70 knots.

5.3.7.2 Arctic operations.

(a) Heating systems shall be designed to produce the required compartment air temperature conditions on the basis of a weather air temperature of minus 50°F (minus 45.6°C).
(b) Systems/equipment installed in exposed locations shall be designed to operate satisfactorily at a minimum air temperature of minus 65°F (minus 53.9°C) with a concurrent wind velocity of 100 knots.

(c) Topside installations shall be designed to withstand the following fluctuating conditions:

(1) Wind - 100 knots which may reverse direction in a few minutes; change from 0 to 70 knots or 70 to 0 knots in 4 minutes.
(2) Temperature - Change of 50°F (27.7°C) in 1 hour.
(3) Relative humidity - Change of 50 percent in 4 hours or 80 percent in 7 hours.

5.3.8 Tropical considerations. Certain systems/equipment may be intolerant of even occasional excursions of temperature above the limits prescribed in table I (also see 5.1.1) which could be encountered under some tropical operating situations. In such circumstance the design criteria applied to the particular system/equipment shall be modified accordingly.

6. NOTES

6.1 Deviations.

6.1.1 Conditions. In achieving the purpose of this section it is recognized that circumstances may arise where there must be some flexibility in the mandatory application of environmental design constraints. During the early stage of shipboard systems, equipment, or structure which are exposed to or affected by the weather environment it may become apparent that significant advantages in the overall design/operation can be achieved by deviating from the standard characteristics specified herein. In such instance, the provisions of the "Deviations" of MIL-STD-1399 should be followed.

6.1.2 Deviation procedure. When invoking deviations to this section, correspondence and similar information should be submitted by the contracting activity to the Naval Sea Systems Command (NAVSEA 55Z) program manager.

6.2 Subject term (key word) listing.

Air temperature
Precipitation
Relative humidity
Sea temperature
Snow and ice loading
Wave slap
Weather factor
Wind loading

6.3 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Review activities:
AS, OS, EC, YD

Preparing activity:
Navy - SH
(Project 1990-N069)

INTEGRATED COAST GUARD SYSTEMS
DEEPWATER 1530 Wilson Boulevard, Suite 400, Arlington, Virginia 22209

In reply refer to:
ICGS.06.278

29 August 2006

Mr. Daniel Olsson
Contracting Officer
U.S. Coast Guard
Deepwater Systems Integration Project Office
1530 Wilson Blvd., Suite 400
Arlington, VA 22209

Subject: Topside Equipment Environmental Requirements for the 123' Maritime Patrol Boat and the Short Range Prosecutor

Reference: United States Coast Guard Letter Serial #06-129 RFR #060165 dated 17 May 2006

Enclosure: Lockheed Martin Maritime Systems and Sensors Letter LMICGS.06.126 dated 29 August 2006

Dear Mr. Olsson:

The enclosed correspondence, which outlines Lockheed Martin's planned course of action concerning the submittal of Requests for Waiver (RFWs) against the subject environmental requirements, is provided in response to the referenced letter.

Please direct any questions you may have relating to this matter to the undersigned who can be contacted at (571) 227-6770.

Sincerely,

John A. Catalano
ICGS Surface Contracts Manager

CC: (w/o enc.): M. Robey, P. Bible, T. Berdini, D. Illuminate, F. Socko, R. Wharton

Lockheed Martin
Maritime Systems and Sensors
199 Borton Landing Road P.O. Box 1027
Moorestown, NJ 08057-0927

LOCKHEED MARTIN

29 August 2006

In reply: LMICGS.06.126

Integrated Coast Guard Systems, LLC
1530 Wilson Blvd., Suite 400
Arlington, VA 22209

Attention: F.J. Socko – Director, Subcontracts

Subject: Topside Equipment Environmental Requirements for the 123' Maritime Patrol Boat (WPB) Conversions and the Production and Deployment of the Short Range Prosecutor (SRP), Delivery/Task Orders (DTO) DTCG23-02-F2DW079, Contract Line Item Number (CLIN) 0055D; DTCG23-03-F-2DW302, CLIN 0055FA; DTCG-23-03-F-2DW196, CLIN 0055EA; DTCG-23-03-F-2DW247, CLIN 0055EB; DTCG23-02-F-2DW077, CLIN 0031EA; and DTCG23-03-F-2DW311, CLIN 0031EB

Reference: (a.) USCG Letter Ser #06-129, RFR #060165 SUBJ: "Topside Equipment Environmental Requirements for the 123' Maritime Patrol Boat (WPB) Conversions and the Production and Deployment of the Short Range Prosecutor (SRP), Delivery/Task Orders (DTO) DTCG23-02-F2DW079, Contract Line Item Number (CLIN) 0055D; DTCG23-03-F-2DW302, CLIN 0055FA; DTCG23-02-F-2DW077, CLIN 0031EA; and DTCG23-03-F-2DW311, CLIN 0031EB" FROM: Tiffany H. Thompson, Contracting Officer, TO: J. Catalano, Surface Contracts Manager, DATE: May 17, 2006

Enclosure: (1) 123' WPB C4ISR Topside Equipment Environmental Performance Characteristics
(2) SRP C4ISR Topside Equipment Environmental Performance Characteristics

Dear Mr. Socko:

In accordance with Reference (a.), Lockheed Martin Corporation (LMC), acting by and through its Lockheed Martin Maritime Systems & Sensors (LM MS2) business unit, has prepared the enclosed response to summarize the recent progress made on the subject topic. In this letter, LM MS2 describes the steps taken to identify any installed equipment aboard 123' WPB Conversions and SRPs which may not meet the environmental requirements as defined in the Cutter Specific Certification Matrix (CSCM) for 123' WPBs, or in the SRP P-Spec.

The USCG has agreed with the recommendation of the 123' WPB IPT to utilize CSCM Sort 21 to define the environmental requirements for the C4ISR topside equipment on the 123' WPBs. The SRP P-Spec provides the pertinent environmental requirements for the SRP, which differ slightly from those for the 123' WPBs. For the installed equipment in question, LM MS2 has recently completed compilation of environmental performance data as provided by the manufacturers & vendors and has completed the process of comparing that data to the environmental requirements contained in CSCM Sort 21 & the SRP P-Spec. The installed Command, Control, Communication, Computer, Information, Surveillance & Reconnaissance (C4ISR) equipment has been evaluated against the following categories of environmental requirements for each Asset:

123' WPB Environmental requirements as defined by CSCM Sort 21	
Category	Criteria
Operating Air Temp	-20°F to 100°F
Relative Humidity	10% to 100%
Wind	75 knots steady, gusts to 100 knots
Precipitation	1 inch/hour rainfall (w/ 35 knot wind)
Sea Temp	28°F to 85°F
Cold Weather Operations	Heating Systems operate on basis of weather air temp of -20°F; Systems/Equipment (exposed) operate @ min -40°F with concurrent wind velocity of 70 knots
Arctic Operations	Heating Systems operate on basis of weather air temp of -50°F; Systems/Equipment (exposed) operate @ min -65°F with concurrent wind velocity of 100 knots; Topside installations to withstand 1) Wind – 100 knots which may reverse in a few minutes; change from 0 to 70 knots or 70 to 0 knots in 4 minutes, 2) Temperature – Change of 50°F in 1 hours, 3) Relative humidity – change of 50 percent in 4 hours or 80 percent in 7 hours
Wind loading	Wind loading of 30 pounds per square foot
Snow & Ice Loading	Ship Structure @7.5 pounds per square foot; Exposed systems/equipment @4.5 pounds per square foot
Wave Slap	500 Pounds per square inch

SRP Environmental requirements as defined by SRP P-Spec	
Category	Criteria
Operating Air Temp	-25°F to 125°F
Relative Humidity	20% to 100%
Sea Temp	28°F to 95°F

LM MS2 designed the C4ISR suites aboard the 123 WPB Conversions & the SRPs utilizing Commercial-Off-The-Shelf (COTS) technology to the maximum extent possible to provide the USCG Operating Forces with the latest C4ISR capabilities, while maximizing value. In many instances, the COTS equipment selected for the 123' WPBs and SRPs has either not been evaluated against many of these environmental categories, or those test results are not available to LM MS2. Testing each of these components to the rigors of the CSCM Sort 21 & SRP P-Spec requirements would be time consuming, expensive, and of limited value, therefore LM MS2 intends to pursue Requests for Waiver (RFWs) as appropriate, consistent with discussions within the Topside Working Group.

LM MS2 has identified thirty (30) C4ISR topside components aboard the 123' WPBs and twelve (12) components aboard the SRP, whose environmental performance falls outside the specified environmental requirements, or lacks performance data for any of the specified criteria. The detailed list of these components and their performance parameters relative to each environmental requirement are shown in Enclosure (1).

LM MS2 has begun developing RFWs, US Government Form 1694, for each component whose environmental performance has not been demonstrated to meet the governing environmental

requirements. The RFWs will seek relief from the governing specifications for each of those components for each environmental parameter not met or demonstrated. LM MS2 believes these RFWs present an acceptable and reasonable approach since most of these environmental specifications guard against weather conditions the 123' WPBs & SRPs will likely never experience in their assigned duties, and due to the fact that the environmental requirements were clarified after the 123' WPBs were produced and deployed. LM MS2 plans to complete the development of these RFWs and work with ICGS to deliver them to the USCG by 22 September, 2006.

Should you have any questions, please contact the undersigned at the phone number indicated below. Technical questions should be directed to Mr. Bert Tetreault, Lockheed Martin Deepwater Program 110'/123' Conversion Program Manager, at (856) 359-1202, email: herbert.a.tetreault@lmco.com

Sincerely,

Thomas G. Berdini, Deepwater Program
Business Management – Surface Domain Contracts Manager
Tel: (856) 359-3979
Email: thomas.g.berdini@lmco.com

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