

**Testimony of Fred P. Moosally,
President, Lockheed Martin Maritime Systems and Sensors, to
The House Committee on Homeland Security Subcommittee on Border,
Maritime and Global Counterterrorism**

Thursday, May 17, 2007

Thank you for the opportunity to explain the progress we are achieving on the U.S. Coast Guard's Integrated Deepwater System program. Speaking for the men and women of Lockheed Martin, we are very proud to be associated with this critical program. The Coast Guard is a key national asset for assuring the security and safety of our country's maritime transportation system. Each of us, in accomplishing our daily tasks on the program, has a deep sense of the importance of achieving the very best for the Coast Guard and our nation.

The Deepwater Program

The Deepwater program began in 1997 as competing teams were established to develop proposed solutions for bidding the program. In fact, proposals were submitted to the government less than two weeks after 9/11. Since then, the Deepwater program has successfully accomplished a number of changes. Most significant were those resulting from the dramatically increased Coast Guard operating tempo and new capability requirements in the post-9/11 environment. An excellent example is the HH-65 helicopters as legacy equipment began to wear out far more rapidly than had been projected. While the plan always included re-engining of this equipment, the original plan was to be accomplished over a longer time period. Nevertheless, the team was able to process the urgent requirement for re-engining and most of the fleet has already been upgraded and returned to service. It is this inherent flexibility that will facilitate our working with the new acquisition organization planned by the Coast Guard.

Lockheed Martin is primarily responsible for four Deepwater domains: system engineering & integration, C4ISR (the command and control network), logistics and aviation (refurbishment of existing assets and production of new assets). Implementation of the Deepwater system-wide command and control network, C4ISR (command and control, computers, communications, intelligence, surveillance and reconnaissance), is important as this is the network 'glue' that permits various assets including ships, aircraft and shore stations to work together to more effectively and efficiently achieve a common purpose. Use and reuse of commercial-off-the-shelf, government-off-the-shelf and fielded maritime systems are being maximized for commonality and interoperability. The application of off-the-shelf software permits the Deepwater program to take advantage of the rapid changes in the commercial marketplace and the investments which commercial firms make in their 'best of class' technologies. This will facilitate Coast Guard interoperability with civil and international systems, a key consideration given their mission mix. The National Security Cutter is using 75 percent of the U.S. Navy's open architecture command and decision system. The command and control system for the maritime patrol aircraft employs more than 50 percent of the functionality of the Navy's P-3 Anti-Surface Warfare Improvement Program. The operations center consoles on the National Security Cutter utilize more than 70 percent of the design of the Navy's UYQ-70 display systems. Use and reuse of available software and systems is the key to commonality. In addition, this approach takes advantage of the work undertaken with the Navy to establish the best human

system interface including workspace ergonomics, viewing characteristics, input devices and overall system architecture.

The common architecture deployed across multiple types of assets allows for commonality of equipment and software systems and supportability of the entire Deepwater system. In general, the Deepwater C4ISR architecture ensures an ‘open systems’ approach for design and implementation, providing a true web-enabled infrastructure. The Deepwater architecture adapts to technology insertion and enables the progression to future Coast Guard-wide C4ISR architectures. In ports and coastal areas, one of Deepwater’s most significant capability enhancements will be its robust C4ISR system. This fundamental building block will improve the Coast Guard’s ability to maintain maritime domain awareness focused on meeting the needs of decision makers engaged in operations at sea, ashore, and in the air. The network-wide system will ensure the Coast Guard possesses and maintains seamless interoperability with the forces and agencies of the Department of Homeland Security, the Department of Defense, and other federal and regional agencies—a true force multiplier in the fullest sense.

I would like to specifically address concerns about competition as Deepwater continues to perform well in this area. The Federal Acquisition Regulations stipulate that a contractor is responsible for awarding and managing subcontracts as well as determining whether to make or buy particular items to ensure the lowest overall cost and technical risk to the government. The applicable regulations also require competition to be assessed regularly via formal government-conducted purchasing system reviews. These government audits evaluate the degree of price competition obtained and the treatment of affiliates.

Lockheed Martin is currently subcontracting with nearly 350 suppliers in 28 states. More than 200 of these are small or small disadvantaged businesses. In the period from September 2003 through December 2006, Lockheed Martin placed more than \$606 million of orders with these suppliers. Competitive procurements in accordance with our government-approved procurement system total 43 percent of the subcontracts awarded. To assure price reasonableness to the government, the Competition in Contracting Act of 1984 excepts from the otherwise applicable requirement for competition follow-on procurements for continued development, production or highly specialized services, unique supplies or services available from only one source, or an unusual and compelling urgency that precludes full and open competition. When these are appropriately applied to each subcontract, the qualified percentage is raised to 94 percent of the subcontracts awarded.

In fact, of every \$100 of Deepwater funding obligated to the prime contract:

- \$27 is used by Lockheed Martin for engineering and program management
- \$37 is subcontracted by Lockheed Martin to third-party suppliers for goods and services
- \$36 is used by other Deepwater partners (ICGS, Northrop Grumman and Northrop Grumman’s third-party suppliers)

We continually search for the most appropriate products, services and technology to assure best value to the Coast Guard customer. We have participated in six Innovation & Industry Days across the country and have more than 3,000 prospective supplier-product applications in our purchasing database.

Lockheed Martin Deepwater Program Progress

Working with our Coast Guard customer, Lockheed Martin has enabled deployment of more than 80 upgraded HH-65 helicopters featuring more powerful engines; delivered two new HC-144A maritime patrol aircraft with six more in various stages of contracting and construction; progressed through developmental test and evaluation of the HC-144A electronic mission system; commenced mission system and sensor installation on all six J-model HC-130 long range search aircraft; and sustained service of the eight MH-68A armed helicopters comprising the Coast Guard's helicopter interdiction squadron.

We have upgraded command and control systems aboard all of the Coast Guard's 39 medium- and high-endurance cutters resulting in significant increases of illicit drug seizures. An important program milestone was recently achieved. The Coast Guard issued full authority to operate the Deepwater command and control system at its district command center in Miami. This system provides enhanced mission planning tools and facilitates rapid exchange of information through a common operating picture among Coast Guard commands, cutters and aircraft. The system is now being installed in San Juan, Puerto Rico, soon to be followed at major Coast Guard commands in Massachusetts, Virginia, Alaska, Washington, Hawaii, California and Louisiana.

The Deepwater program is delivering and is making a real difference — impacting drug seizures, migrant interdictions and lives saved. In Washington, earlier this year, the Coast Guard performed a rescue utilizing an HH-65C helicopter under conditions that would have been impossible for the aircraft it replaced. This month, the cutter Sherman utilized its Deepwater-installed electronics to passively track a ship of interest, to board her without alerting her, and to coordinate the seizure of a record 21 tons of cocaine, with a street value of \$300M, via secure satellite communications.

Recent customer statements show how well the upgrades, equipment and new capabilities are being received:

- HH-65 Helicopter Re-Engining - "Restoring this kind of reliability and stability to our HH-65 fleet is a crucial milestone in improving readiness. The fact that it's being accomplished ahead of schedule reflects a true team effort by industry and our engineers, acquirers and operators." Coast Guard Chief of Aviation Forces
- Legacy Cutter C4ISR Upgrades – "The Deepwater Upgrade provides vastly improved communications and interoperability. In the past year this ship has operated from above the Arctic Circle to well below the equator. We have enjoyed 24/7 real time links to operational commanders and data base management regardless of our physical location. The upgrades have proven to be tough, dependable, and easily maintained." Commanding Officer of the USCGC Morgenthau
- National Security Cutter C4ISR Training Center - "The contrast between our tools of 1983, and the tools of the future ships like the BERTHOLF is significant. I remember analog radar, message traffic by teletype, paper charts and maneuvering boards, Polaroid cameras, and slow criminal history checks by EPIC. No cell phones, no email – imagine that. I remember a true sense of independent operations. We were proud, but probably not as effective as we might have been if we had the tools of today. By contrast, our new National Security cutters will train ... on computerized digital sensors, radar and charts, live sharable digital video, message traffic by PC, voice communications with anyone, clear or secure, and real time criminal histories and intelligence checks. They will benefit from a sense of connectedness and systemic information sharing making their days at sea safer and more efficient. The

Coast Guard will have increased Maritime Domain Awareness to identify threats, and a Common Operating Picture to act when necessary – all to protect our coastlines and our citizens.” Commanding Officer Coast Guard Training Center

- Maritime Patrol Aircraft - “Today’s delivery of the first MRS MPA is a critical milestone in our ongoing efforts to acquire and deliver more capable and interoperable assets and systems to our Coast Guard crews. When this aircraft and others like it enter operational service, they will help to narrow our existing gaps in maritime surveillance in many important ways.” Deepwater Program Executive Officer

Deepwater C4ISR is the enabler for the integrated system and is the major contributor to improved performance. It permits the Coast Guard to operate effectively with DoD, DHS, state and local government agencies. C4ISR provides coordinated tactics, multi-agency interoperability and common situational awareness necessary to achieve mission success. These capabilities are needed for all Deepwater assets including ships, aircraft, and shore site command centers.

Commitment to Congress and the Coast Guard

We have deep respect for Congressional oversight and are committed to achieving our very best for our nation and the Coast Guard. We have continually sought to improve on this program. In particular, we are attentive to the concerns that have been raised by the DHS Inspector General, the Government Accountability Office and Members of this and other Committees with Coast Guard oversight responsibilities. As such, we are continuing to improve engineering and program management processes to better meet the needs of the Coast Guard customer.

I would like to take this opportunity to address the concerns raised by the DHS Inspector General. We have carefully reviewed each of the findings, and, where appropriate, have made improvements to Deepwater program processes to avoid past mistakes being repeated. I address each of the issues raised by the DHS Inspector General.

Low Smoke Cables

During a Lockheed Martin review of 123-foot Patrol Boat C4ISR specifications, it was determined that 85 out of approximately 490 cables per ship could not be confirmed as having low-smoke properties. Many of these 85 “cables” are not large electrical cables. They are small cables such as those linking personal computers to printers. Others were small cables located inside commercial equipment, purchased as a result of the mandate to use as much commercial product as possible. The remainder of the 85 cables extend outside onto the mast or deck, and pose no threat to the boat or its personnel. Consistent with other military programs, a collaborative analysis of the non-low smoke cables determined that their use did not pose an undue safety risk. During the process of certifying the 123-foot patrol boat C4ISR design to the cutter certification matrix, the Coast Guard recommended submission of a ‘request for relief’ from the low smoke requirement for specific cables. The program proceeded to make progress with a reasonable expectation that the request for waiver would be approved. As the Inspector General determined, approval of the request for waiver was secured after four 123-foot patrol boats had been delivered. Collaboratively, with our Coast Guard customer, we have established additional process controls to help avoid a future recurrence of such a documentation issue.

C4ISR Environmental Requirements

A Lockheed Martin engineering review in mid-2005 identified a potential issue regarding C4ISR environmental requirements. We immediately informed the Coast Guard of this issue, and a joint Coast Guard and Lockheed Martin working group was established to resolve this issue. Rather than embark on a costly and continuous certification test process, Lockheed Martin engineers evaluated each of the components and the associated environmental performance information. Where possible, Lockheed Martin obtained ruggedized components, such as a de-icing capability for the FLIR sensor. After the joint working group's consideration of the mission criticality of each component, its specification compliance, and its function aboard the boat, a request for waiver was jointly determined the best choice given customer imperatives and objectives. This approach permitted reconciliation of the program's acquisition strategy to maximize the use of ruggedized off-the-shelf commercial and government equipment with a multitude of military standards incorporated into the requirements. By submission of a contractor requested waiver, the Coast Guard was afforded the ultimate decision as to a course of action. Much like the findings regarding low-smoke cabling, the Inspector General recommended that the Coast Guard develop and implement a plan to improve the process for reviewing and adjudicating contractor requests for deviations and waivers to ensure that all requests are resolved and fully documented prior to implementation. We are actively supporting implementation of this and other Coast Guard program oversight process improvements.

TEMPEST

Next, in response to concerns regarding C4ISR TEMPEST capabilities, we note that the government determined that the installed C4ISR system is not a security vulnerability. In fact, an independent third-party, the U.S. Navy Space and Naval Warfare Systems Center (SPAWAR), performed a visual inspection and instrumented testing. All identified discrepancies were resolved to the customer's satisfaction and the 123-foot patrol boat C4ISR system was subsequently approved by the Coast Guard to operate in a classified environment. Lockheed Martin engineers chose a particular type of cable that was fully shielded and securely mounted to preclude compromising emissions as well as potential shielding degradation over time. Furthermore, SPAWAR determined that the system did not have compromising emissions and it was approved by the Coast Guard to operate in a classified environment. Based on input from the Coast Guard, the C4ISR system on the 123-foot patrol boat operated effectively and securely during the time the patrol boats were operational and was highly regarded by their crews. The capabilities provided by the C4ISR system enabled the crews to develop new and highly-effective operational techniques for intercepting drug traffickers and illegal immigrants.

Before the February 2007 report of the Inspector General, we improved the C4ISR design process for the National Security Cutter. Electronic equipment cabinets have been designed with improved electro-magnetic interference, cryptographic system configuration and cable shielding. Classified network designs were provided to the certified TEMPEST test authority prior to customer design reviews to facilitate risk mitigation early in the design. Representatives of industry, the customer and an independent reviewer, Craig Ocean Systems, participated in a number of technical interchange meetings to review current designs and make changes prior to equipment production efforts. During cabinet production, integration and test, periodic technical interchange meetings were conducted with the customer to review all emergent TEMPEST issues and correct the associated documentation. Prior to system testing, the customer conducted a final design review with government experts to identify potential issues and make any necessary design changes. We believe the approach of mitigating potential problems before

customer visual and instrumented testing is essential. Close customer involvement, including early reviews of the design documentation and delivery schedules will continue to assure that Congressional and customer interests are best served.

Surveillance Cameras

Finally, as the Inspector General found, the camera system on the 123-foot patrol boats fully complies with the video surveillance system requirements. It was designed as part of an overlapping series of measures, including sentries and an intruder detection system. Lockheed Martin did not consider it prudent to unilaterally increase costs by providing functionality that the customer did not want or need.

The Way Ahead

We agree with the Coast Guard that the oversight has provided important recommendations for improvements to the Deepwater program. We are working with the Coast Guard as they have already begun to take the necessary steps to ensure successful execution of the Deepwater program. Our goal is to provide more capability to the Coast Guard sooner. We are dedicated to analyzing and recommending approaches for maximizing the value delivered to the Coast Guard, in accordance with the customer's view of value, not that of industry. This requires the best talent from each corporation. Lockheed Martin will continue to work closely with Coast Guard personnel to assure constant communications and improved working relationships. The strategic policy changes that have occurred since 9/11 must be factored into problem solving. The Coast Guard and the Department of Homeland Security have needs that can be satisfied by the Deepwater program and its approach to value delivery. The way forward will be challenging, but given the capabilities of the participants and the strategic imperative to better outfit our Coast Guard so the safety and security of our nation is improved, the Deepwater program is eminently achievable.

Follow-Up Address

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Full Statement Summary

We, at Lockheed Martin, agree with the Coast Guard that the oversight has provided important recommendations for improvements to the Deepwater program. We are working with the Coast Guard as they have already begun to take the necessary steps to ensure successful execution of the Deepwater program. Our goal is to provide more capability to the Coast Guard sooner. We are dedicated to analyzing and recommending approaches for maximizing the value delivered to the Coast Guard, in accordance with the customer's view of value, not that of industry. This requires the best talent from each corporation. Lockheed Martin will continue to work closely with Coast Guard personnel to assure constant communications and improved working relationships. The strategic policy changes that have occurred since 9/11 must be factored into problem solving. The Coast Guard and the Department of Homeland Security have needs that can be satisfied by the Deepwater program and its approach to value delivery. The way forward will be challenging, but given the capabilities of the participants and the strategic imperative to better outfit our Coast Guard so the safety and security of our nation is improved, the Deepwater program is eminently achievable.