Michael DeKort - (Barus Awardee 2008)

Author(s)

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Description

Michael DeKort made extraordinary efforts to expose and correct a number of significant defects in a major project to re-equip the Coast Guard that launched in 2002.

Body

Man Rescues Coast Guard

When I think of the Coast Guard, the image that comes to mind is that of heroes putting out to sea in heavy weather to search for and rescue people clinging to disabled vessels. Search and rescue is indeed a primary mission of the Coast Guard, tho it also plays important roles as a maritime police force and as a military branch. I am therefore outraged at the idea of such heroes being forced to operate with defective equipment

Unfortunately, just such an outrage is being perpetrated. After many years during which little had been done to upgrade Coast Guard boats, planes, and other equipment, or even to replace aging apparatus, a major project to re-equip the

Coast Guard was launched in 2002. This is the Deepwater program, initially budgeted at $17 billion, now at $24 billion. The plans called for 91 new ships, 124 small boats, 195 new or rebuilt helicopters and 49 unmanned aerial vehicles. Sadly, virtually every aspect of this project that has been investigated seems to have been bungled. This article is about a different kind of hero, engineer Michael DeKort, who made extraordinary efforts, which now seem to be bearing fruit, to expose and correct a number of significant defects in Deepwater subsystems.

DeKort's Background

Michael DeKort was an electronics technician in the US Navy for 6 years, specializing in communication systems. After leaving the navy, he worked for about eighteen months in private industry as a civilian electronics technician. DeKort then worked for the US State Department as a communications engineer for about eighteen months. During his last eight months he was lead telecommunications engineer for a State Department counter- terrorism team. In 10/92 he joined Lockheed Martin (LM) as a hardware and systems engineer, working on various projects including the Aegis naval weapons system, eventually as a project manager and lead engineer. In 6/03 (still with LM), he joined the Deepwater project, soon becoming a project manager and lead engineer for C4ISR (Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) for the project developing the 123 (foot class) Coast Guard Cutter. The project was at an advanced stage when DeKort arrived, with most of the components for several ships already ordered.

Radios in the Rain

Soon after beginning work, he learned that the radios ordered for the Prosecutors (25-foot open patrol boats carried usually by the 123's and used for rescue and boarding operations) were not designed for outdoor use, i.e., they were not waterproof. At this time, four had been ordered. Surprised at this, DeKort checked with the manufacturer, who confirmed that these radios should not be used in open boats. But when DeKort informed higher management of this, expecting, of course, that the purchase orders would be changed, he was informed that these radios were included in the "design of record" accepted by the customer. Therefore no changes would be made, as this would negatively impact costs and schedule. Subsequent to DeKort's report to management, five more of these radios were ordered. DeKort

tried for several months to get this error corrected, with no success, except to get authorization for ordering "raincoats" and better microphones for them. Then the Coast Guard asked for a test of the boats about to be delivered. Fortunately, it rained on the day of the test and several of the radios failed. This finally led to the requested change being implemented. The story lines for other errors that he found started out the same way but, sadly, had different endings.

Things Get Worse

The radio blunder was the first of a series of serious problems that DeKort found. The next was the discovery that many of the cables installed on the 123 were of the wrong type. They were not "low smoke", as specified, meaning that they incorporated materials that might emit deadly fumes if a fire broke out on board. He then found that the video surveillance system designed to protect the cutters from intruders while in port was defective in that there were significant blind spots.

An additional video camera (costing about a thousand dollars) would have solved this problem. Another issue was the failure to use properly shielded cables for various communication systems on board the 123's. Without proper shielding, signals are vulnerable to interception. This is a national security issue. There are generally accepted guidelines called "Tempest" standards for guarding against such signal leakage. These were not followed by LM in its work on the 123 cutters.

Because of the nature of the missions undertaken by Coast Guard vessels, subsystems used must be designed to operate properly over a wide range of environmental conditions. For example, units exposed to outside weather must be able to operate at temperatures down to -40 degrees F. DeKort, ordered environmental checks on the relevant equipment. The first item tested was the FLIR (Forward Looking Infra Red) unit, used for navigation when visibility was poor. He learned that this unit would fail at -5 degrees F. When he reported this up the management chain, he was told that they would not change the design of record, and that no further tests of this nature should be made. It later became known that many other subsystems did not meet environmental standards.

Working Within the System

In these cases, DeKort was concerned about the safety of Coast Guard crews, the ability of the Coast Guard to carry out its missions, threats to national security, and

the reputation of LM. He brought the issues to the attention of his immediate management, and then to higher and higher levels as his concerns were brushed off. He appealed several times to LM's internal ethics office, but they declined to support him in any way. Eventually he notified CEO Robert Stevens and then the LM Board of Directors, again with no constructive result. Over and over again, he was told that schedule and cost considerations precluded any changes in "the design of record". Contacts with Coast Guard people also did not result in any effective action.

One incident, related by DeKort in an email to CEO Stevens highlights the differences between higher level LM managers and Michael DeKort. In his words:

> In December of 03 the security inspector for the CG performed an inspection of our boat and said, in his report, that he noticed the implementation, with 4 fixed cameras, was different than he was used to seeing, but it looked like he had 360 deg coverage. I felt this opened the issue back up. I immediately went to management and suggested we tell that inspector that we had less than 360 deg coverage and see what he wanted to do. I was then told, in a room with witnesses, that if he thought he had 360 deg we weren't going to tell him otherwise and that it was his fault he made a mistake and ran a faulty test. I told the group I thought that approach was unethical and put the USCG and LM at risk.

In August of 2004 DeKort was transferred to another division of the company. But he continued to call attention to the Deepwater issues. Two years later, he was discharged by LM.

Stretched Ships Buckle

The issues raised by DeKort were not the only problems that surfaced with respect to the Deepwater project. Several years ago, a high level Coast Guard engineer warned that plans for adding 13 feet to the length of 110-foot cutters to produce the 123-foot cutters were not well conceived and that this operation should not be implemented prior to further study. His advice was ignored. Eight cutters were delivered and then, as a result of structural failures, had to be taken out of service. (See "Ships that don't dare to sail".) The Coast Guard is now asking for a refund.

Going Public

Having exhausted all internal LM mechanisms for correcting the problems, DeKort, in 2006, took a high-tech path to address the general public. He produced a You Tube video. This was viewed by tens of thousands of people and got the attention of the media in a big way. DeKort was interviewed on a number of radio and TV programs, (including 60 Minutes). More substantial consequences were an investigation by the Inspector General of Homeland Security (IGHS), and a congressional hearing on the entire Deepwater project, at which he testified.

What Went Wrong?

It should be understood that responsibility for the problems found by DeKort, and for the inordinate delay in dealing with them belongs not only to LM management (all the way to the top), but also to the top officials of the US Coast Guard, who seemed to have a need to not know about Deepwater defects.

A fundamental problem with the Deepwater Program is the unusual way that it was organized. Integrated Coast Guard Systems (ICGS) was formed as a joint venture of Lockheed Martin and Northrop Grumman. It was awarded the Deepwater project to manage in complete detail, with minimal Coast Guard oversight. The idea was that ICGS, having a deep understanding of the technology, would be able to provide the Coast Guard with the most advanced systems in the most efficient way. What actually happened, in the words of CBS correspondent Steve Kroft, is that, "the $24 billion project has turned into a fiasco that has set new standards for incompetence".

A compounding factor that probably increased the degree to which the interests of the Coast Guard were compromised, not to mention the inflated monetary cost, is the well known revolving door process that has led to so much grief with respect to military contracts. That is, high-level company executives take governmental positions where they can influence the awarding and/or monitoring of contracts with their former (and often also future) employers, and military officers retire to assume positions with companies whose contracts they monitored or helped award. The extent to which this has happened in connection with the Deepwater project is outlined in a recent news article, Coast Guard's Purchasing Raises Conflict-of-Interest Flags.

Conclusions

We can reasonably assume that, given the serious nature of the charges made by DeKort, which, as indicated above, impugns the competence and integrity of a large number of important people both in the company and in the Coast Guard, every effort was made to dig up information to discredit him. It is a tribute to DeKort's character that such efforts have apparently yielded nothing at all. None of the points he made about defects in Deepwater systems have been seriously challenged. The IGHS report validated most of DeKort's points and, where it did not, it appears that the issues had to do with terms of the contracts involved. That is, which of the company's actions violated contract provisions. So, if it did not state explicitly in a contract that the FLIR must be functional down to -40 degrees, then LM was not in violation if it failed at -5 degrees F. DeKort's concern was not simply about whether his company was violating contracts, but rather about whether its behavior was ethical. For example, is it ethical to send sailors out in a winter storm with equipment that is likely to fail. He put this very well in a message to CEO Stevens:

> The question here is not whether we are contractually or legally covered--it is whether or not we are doing the right thing. In the court of public opinion or if reviewed by experts in the industry or under the scrutiny of a federal investigation would it be viewed that we met our moral, ethical and professional obligations?

DeKort went to great lengths to follow company rules about handling disputes, and to give LM every opportunity to correct its errors quietly, at minimal cost in terms of money and reputation. None of his colleagues or organizational superiors gave him any support during this struggle. But, no matter how often he was rebuffed, he never gave up. In my judgment, he displayed great strength of character, acting courageously in the highest traditions of engineering professionalism, under the most difficult circumstances.

Addendum (5/21/09)

In January, 2008, Michael DeKort received the Carl Barus Award for Outstanding Service in the Public Interest from the IEEE Society on Social Implications of Technology. The award citation reads:

Michael DeKort was a lead engineer working for a prime contractor on the Deepwater Project, whose purpose was to modernize the US Coast Guard fleet. Joining when the 123-foot patrol boat project was at an advanced state, he discovered several bad decisions endangering Coast Guard sailors and compromising their ability to carry out missions. One decision posed a potential threat to national security. When his efforts to correct these problems were rebuffed, he exhausted all appeals procedures within the company and eventually outside, even after being removed from the project and eventually being fired. His allegations were subsequently validated by the cognizant investigatory agency.

Michael DeKort's courageous and competent adherence to the highest ethical standards under difficult conditions set an inspiring example for his fellow engineers.

References

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Contributor(s)

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Rights

Resource Type

Case Study / Scenario

Parent Collection

Award Winners

Topics

Workplace Ethics
Workplace Ethics
Safety

Discipline(s)

Engineering
Electrical Engineering