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Lessons Learned from Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity

by

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Abstract

During the 1990s, active duty sailor resources were in large demand. In an effort to return sailors to the fleet, the operation of the Navy's Heavyweight Torpedo Intermediate Maintenance Activities (IMA), at Pearl Harbor, was competitively outsourced to Raytheon in 2001. The sailors that manned the facility were subsequently returned to the fleet.

The purpose of this case study is to evaluate this effort and to show the applicability of market-based tools in the public sector and especially by the Department of Defense. It not only contains important lessons for those interested in learning about, as well as those responsible for, enhancing the efficiency of the government, but it also provides relevant insight into achieving improved and more productive cooperation between the public and private sector.

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Alternative Strategies

for

Managing MK-48 Intermediate Maintenance Activity

by

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The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew and act anew.

Abraham Lincoln

I. Introduction

The Navy's Heavyweight Torpedo Intermediate Maintenance Activity (IMA) facilities provide essential torpedo maintenance services and ready-for-issue weapons to the submarine fleet. These fleet-operated industrial facilities coordinate with the submarine commanders (Commander, Submarine Force US Atlantic Fleet and Commander, Submarine Force US Pacific Fleet) to provide both exercise and wartime ready "warshot" weapons, as well as manage heavyweight torpedo maintenance to ensure adequate numbers of ready-for-issue (RFI) weapons are available to the fleet commanders. The personnel and facilities provide for weapon maintenance and repair, configuration management, logistic support, pier-side services, performance data

collection, and production management, all of which ensure the submarine fleet sailors are equipped with weapons for all of their operational requirements.

During the 1990s, active duty sailor resources were in large demand. In June 1999, in an effort to mitigate the shortage, the Chief of Naval Operations approved the decision to outsource Navy's Heavyweight Torpedo Intermediate Maintenance Activities (IMA) at Pearl Harbor, and return those sailors to the fleet; he wanted this implemented in FY01.

The purpose of the present case study was to conduct a qualitative and quantitative evaluation of the model used to outsource the IMA for the MK-48 torpedo, which is currently performed at Pearl Harbor (Hawaii) by Raytheon Company. This research is oriented as a case study analysis for public and private enterprises management and shows the applicability of market-based tools in the public sector, especially by the Department of Defense (DoD).

The remainder of this report is organized as follows: The next section begins with a brief history and description of the MK-48 torpedo, describes the IMA and the functions it performs, identifies why the activity was outsourced, and concludes with a summary of the expected impacts. We then describe the initial contract, competitively awarded in 2000, and the second contract awarded in April 2006. The fourth section summarizes the performance results, and then "lessons learned." The final section of this research presents our conclusions and reflections on this case. The conclusions are reached by utilizing the data discussed in the "Contract Analysis" and "Performance Analysis" chapters in addition to going beyond currently available statistics for purposes of

including the state of the theory and practice of management in the intersections of public-private partnership.

This present case study not only contains important lessons for those interested in learning about, as well as those responsible for enhancing the efficiency of the government, the Defense Department, and its respective military branches; but, in addition, it provides relevant insight into the mechanics for achieving improved and more productive cooperation between the public and private sector.

II. Background

During World War II, submarines demonstrated their utility for the United States as both defensive and offensive weapon systems. Approximately 14,750 torpedoes were fired from submarines at 3,184 of the approximately 8,200 ships sighted (primarily in the Pacific theater). Of these, 1,314 ships were sunk, totaling 5,300,000 tons. The confirmed total included one battleship, eight aircraft carriers, three heavy cruisers and eight light cruisers; it accounted for 55% of all Japanese ship losses. The torpedoes' role was expanded after the war to include delivery of strategic nuclear weapons, exploiting the inherent stealthy characteristics of submarines as protection. The primary offensive and defensive weapon used by submarines in naval warfare is the torpedo.

A. The Torpedo MK-48

The MK-48 torpedo, originally developed in the 1960s, went into active service in 1971. It is a highly capable weapon designed to combat fast, deep-diving nuclear submarines and high performance surface ships. It is still carried by all Navy submarines. The MK-48 is propelled by a piston engine with twin, contra-rotating propellers in a pump jet or shrouded configuration. The engine uses a liquid monopropellant fuel, and the torpedo has a conventional, high-explosive warhead. The MK-48 has a sophisticated guidance

system that can operate with or without wire guidance and use active and/or passive homing, permitting a variety of attack options (Jane's, 2001).

In response to the increasing sophistication of the Soviet submarine threat, the US Navy developed an improved version of the MK-48, known as the MK-48 ADCAP (ADvanced CAPability), which became operational in 1988. The ADCAP variant has improved target acquisition range, reduced vulnerability to enemy countermeasures, and reduced shipboard constraints such as warm-up and reactivation time. These changes involved major modification to the torpedo hardware and resulted in enhanced effectiveness against surface ships (Jane's, 2001).

As noted above, both the Mk-48 and Mk-48 ADCAP torpedoes can operate with or without wire-guidance, using active and/or passive acoustic homing. When launched, the weapon executes a programmed target search, as well as acquisition and attack procedures. Additionally, the torpedo can conduct re-attack multiple times if the target is missed. The MK-48 ADCAP has been modified several times; it is carried by attack submarines and by the Ohio class ballistic missile submarines (Jane's, 2001).

General Characteristics MK-48 and MK-48 ADCAP Torpedo	
Primary Function	Heavyweight torpedo for submarines
Contractor	Gould
Power Plant	Piston engine, pump jet
Length	19 feet (5.79 meters)
Weight	MK-48: 3,434 lbs (1545.3 kg) Mk-48 ADCAP: 3,695 lbs (1662.75 kg)
Diameter	21 inches (53.34 centimeters)
Range	"greater" than 5 miles (8 kilometers)
Weapon acquisition range	1,600 yards (1,463.04 meters)
Depth	officially: 1,200 feet+ (365.76 meters) reportedly: 3,000 feet (914.4 meters)
Search/attack depth settings	Minimum: 20 yards (18.288 meters) Maximum: 1,500 yards (1371.6 meters)
Speed	officially: 28+ knots; 32.2 mph; 51,52 km/h actual: 40 - 55 knots
Run characteristics	6-8 minutes downward
Guidance System	Wire guided and passive/active acoustic homing
Warhead	650 lbs (292.5 kg) high explosive
Unit Cost	$2.5 million (MK-48)
Date Deployed	MK-48: 1972 Mk-48 ADCAP: 1989

Figure 1. MK-48 Characteristics (Jane's 2001).

B. Intermediate Maintenance Activity (IMA)

Maintaining the MK-48 torpedo presents some unique challenges. Unlike other missiles and projectiles, torpedoes can normally be used multiple times for training and exercises. Nominally, torpedoes remain as exercise units for up to 10 in-water runs and are then converted to the “warshot” configuration. Additionally, there is periodic maintenance required—for example, the ADCAP Mod 5 torpedoes have a Maintenance Due Date (MDD) of 6 years, and ADCAP Mod 6s have a MDD of 5 years. Additionally, since torpedoes have not been fired in anger by the US Navy since World War II, the Navy has

a requirement to conduct operational tests of inventoried rounds to ensure their continued reliability. These requirements result in the following IMA maintenance actions:

- Exercise-to-exercise conversions
- Warshot-to-exercise conversions
- Exercise-to-warshot conversions
- Warshot inventory reliability evaluation preparations

Additionally, since no new MK-48s are being produced, the torpedo operates within a closed system. The IMA can provide operational torpedoes (warshot or exercise) to the magazine or fleet submarines. They can also ship entire torpedoes to the Keyport depot, which, in turn, provides them to Raytheon Keyport as Government Furnished Equipment (GFE) feedstock for an upgrade (a MOD 5 returns as a MOD 6 for example). Then, Raytheon Keyport returns it to the depot for acceptance and return to the service pool (see Figure 2).

To accomplish these tasks, the Navy maintains three IMA facilities: the IMA at Keyport Washington (also the home of the Navy's depot for MK-48 torpedoes), the IMA at Yorktown, VA (supports the Submarine Force, Atlantic Fleet), and the IMA at Pearl Harbor (supports the Submarine Force, Pacific Fleet). These three IMAs are operated using three different models. The Keyport IMA is manned by civilian Navy employees, while the Yorktown IMA is manned primarily by active duty sailors. The Pearl Harbor IMA was a mirror image of Yorktown, prior to outsourcing with Raytheon.

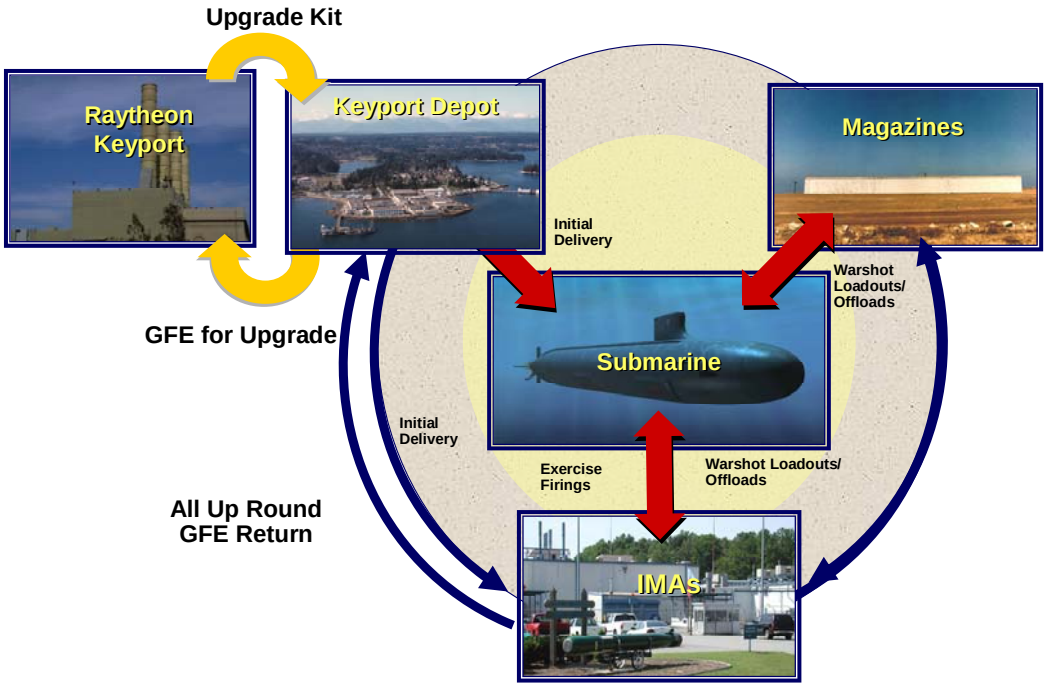

Figure 2. Background—MK-48 Lifecycle Model

The primary IMA workload is at Yorktown and Pearl Harbor, where each facility processes approximately 300 torpedo turns per year ("torpedo turn" is the term of art for a torpedo maintenance action). The warshot torpedoes are loaded on deploying submarines or stored in bunkers. On the exercise torpedoes, the warhead is replaced with a telemetry section (to monitor and record the torpedoes during the exercise firing[1]). The most common operation is the exercise conversion, which requires the following series of tasks:

- Failure analysis and processing decision
- Break and clean

[1] The Atlantic and Pacific Fleets submarine conduct two exercises a year where they fire most of their exercise shots, while training the submarine commanders and executive officers. As a result, the workload plan at the IMA's has two large humps a year. At Pearl Harbor, these normally take place during Dec-Jan and Jul-Aug.

- Rebuild components
- Parts merge
- Test equipment and troubleshoot
- Replace group components
- Torpedo configuration changes
- Cosmetics
- Final Inspection

C. Why Was This Activity Outsourced?

Let DoD do what it does best; let contractors do what they do best.[2]

DepSecDef John P. White

The dissolution of the Soviet Union ended the Cold War and changed the role and mission of the US military. During the Cold War, the United States prepared for a protracted major land war in Europe against a numerically superior foe. The change in the threat after the Cold War, however, forced a change in defense strategy; the DoD was tasked with being prepared to fight two smaller regional conflicts. This change resulted in significant reductions in both force structure and defense spending (the number of military personnel decreased from over 2 million to just over 1 million, and the DoD budget decreased from $403.5 billion in fiscal year 1986 to $260 billion in fiscal year 1997, in constant 1997 dollars).

The DoD published a report in 1996 entitled "Improving the Combat Edge Through Outsourcing," which cited three major challenges that resulted from the reduced budgets in the post-Cold War era. Those were readiness, quality of life, and modernization. The

[2] This is the gist of the message Deputy Secretary of Defense John P. White sent Congress and told reporters April 5 (Gillert 1996)

report recognized that modernization was the top priority, but it competed with the other challenges for funding (DoD, 1996). Additionally, there was a recognition that The Operations and Maintenance (O&M) spending decreased at a significantly lower rate than the supported force structure. For example, between 1989 and 1996 the Navy's underway steaming hours decreased by 35%, while O&M appropriations decreased by only 14%.

One approach received considerable attention in the late 1990s, to improve both performance and reduce support costs: the government's expansion of its reliance on the private sector. The objective was to achieve the benefits of high-performing companies.

During the last two decades, increasing globalization and high rates of innovation have created a much more competitive environment for US industry. In response, firms have reengineered, restructured, reinvested in new technology, and reduced costs, (which generally resulted in eliminating jobs). These companies combined two strategic approaches that when appropriately implemented allowed managers to highly leverage their organic resources and propel their enterprises to new levels of performance. These strategies

> 1. focused their firm's resources on their "core competencies," where they can excel and provide a unique value to their customers, and
> 2. outsourceed those activities, for which the firm has no strategic need, special capabilities, or requirements to be the best. (Quinn, 1994)

For example, many of these high-performing companies contracted out administrative and support functions, such as payroll, IT systems management, logistics and transportation, payroll, human resource management, training, and facility operations and

maintenance. In other cases, such as Nike, Inc., manufacturing was outsourced. Nike's approach was to create maximum value through a focus on preproduction (i.e., research and development) and post production (i.e., marketing, distribution, and sales) and outsource 100% of its shoe production (Quinn, 1994). Although, these initiatives were first adopted to cut costs, other benefits accrued, such as access to specialized skill and state-of-the-art technology. By contracting-out selected functions, these businesses improved the quality of the service provided, reduced their costs, and applied greater focus to their "core competencies" (Defense Science Board, 1996).

In February 1996, the Deputy Secretary of Defense John White issued a memorandum to the Service Secretaries that emphasized the Department's commitment to use outsourcing and privatization as strategies to help generate the needed resources for force modernization. He wrote:

> Outsourcing and privatization provide a means to achieve this important objective [modernization]. By drawing on the abilities of the commercial sector, we can provide more efficient and effective support, focus our efforts on what we do best, and redirect substantial resources to modernization. I expect each of you to make outsourcing and privatization a priority within your Department. (White, 1996)

With the emphasis on reducing O&M costs, the need for sailors in the fleet, and the Department's emphasis on outsourcing, the Commander in Chief Pacific Fleet made the decision to outsource the sailor-manned MK-48 Intermediate Maintenance Activity at the Naval Magazine, Pearl Harbor.

D. Anticipated Impacts

When using the management strategy of outsourcing, the objective is to competitively contract-out specific organizational activities to firms that can perform them more efficiently and effectively than the organization choosing to outsource. Although the terms outsourcing and privatization are often used interchangeably, with outsourcing, as opposed to privatization, there is no transfer of ownership of assets. However, outsourcing is not simply a procurement decision. All organizations procure elements of their operations. Outsourcing of the overall activity is less common; it is a strategic decision to reject the internalization of an activity and generally results in major impacts throughout the organization (Gilley, 2000).

Strengths of Outsourcing

- Outsourcing is more efficient than previous in-house (sole-source) operations, and generally reduces costs significantly because:
  - It harnesses competition—bringing the pressure of the marketplace to bear on the inefficient producers.
  - It permits better management control—freeing government managers of many of the distracting influences (e.g., civil service constraints).
  - It allows managers to see more directly the costs and benefits of their decisions.
- Outsourcing enables the government to take advantage of specialized skills, new technology, and innovation often lacking in its own organization.
- Outsourcing can reduce dependence on a single supplier (i.e., the government), and the potential for future competition provides a continuing incentive for higher performance at lower cost.

(Gansler, 2003)

Figure 3. Strengths of Outsourcing

One of the principle benefits of outsourcing is the potential to introduce competition. In general, competitive pressure encourages innovation that results in performance improvements and productivity gains, while reducing costs.

Along with outsourcing there are three other sourcing strategies that can be used to introduce competition. These are defined below.

- ***Competitive Sourcing*** (a new term utilized by the Bush Administration for public-private competitions that are held in accordance with OMB circular A-76) has been employed (as public-private competitions) by federal agencies for almost 40 years in an effort to improve the quality and flexibility of government services and to save tax dollars. Competitive sourcing occurs when government and private sector providers compete to carry out commercial activities (Meyers, Cancilliere, and LaPointe, 2002-2003).
- ***Privatization*** is the transfer of assets or responsibility from the government to the private sector. In many cases, privatization often includes a wide range of public-private partnerships, such as voucher systems, commercialization, and franchising (Office of Management and Budget, 2004).

- ***Public-Private Partnership* is** "an arrangement of roles and relationships in which two or more public and private entities coordinate/combine complementary resources to achieve their separate objectives through joint pursuit of one or more common objectives" (Lawther, 2002, p. 9).

When one considers the results from introducing competition within the DoD, the data are overwhelming. Within the DoD, one strategy, competitive sourcing has been used extensively and routinely results in average savings of approximately 30% (*Defense Reform Initiative Report,* Nov 1997) regardless of who wins, government employees or contractors (see Figure 4 for data on over 2,000 competitions saving approximately $1.5 billion per year).

	Competitions Completed		Average Annual Savings ($M)		Percent Savings
Army	510		$470		27%
Air Force	733		$560		36%
Marine Corps	39		$23		34%
Navy	806		$411		30%
Defense Agencies	50		$13		28%
Total	2,138		$1,478		31%

Figure 4. Competitive Sourcing Results

Critics will argue that these savings are short-lived and may be offset entirely by higher contract management costs. A more recent CNA study looked at 16 competitions that were completed between 1988 and 1996 to see if the savings were realized over time (Clark, 2001). Of these, 14 were won by contractors and two were won by in-house government teams.

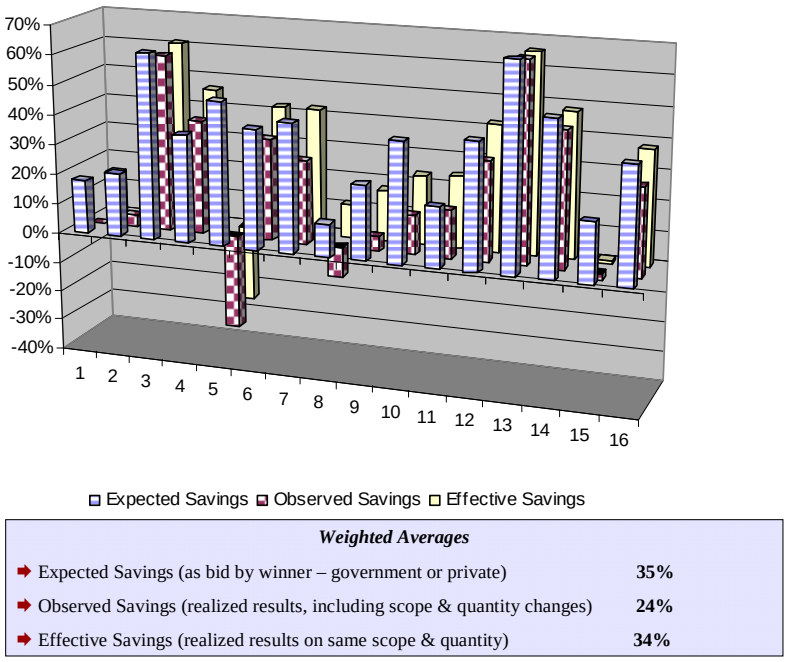

Figure 5. Competitive Sourcing Demonstrated Results (Clark, 2001)

These competitions, conducted between 1988 and 1996, accounted for over 2,800 military and civilian positions and approximately $100 million in annual pre-competition operating costs. They also represented typical available functions that are availablefor competitive sourcing or outsourcing. These included supply/logistics, facility and family housing maintenance, and aircraft maintenance. The summary results, see Figure 5, show that the expected savings for the 16 competitions was 35%. The actual savings observed for these was 24%. However, when the programs were corrected for changes in the scope of work, and/or the quantity, the savings realized were 34%. This study demonstrated that the savings were not transitory but realized over time (Clark, 2001).

Another approach designed to transform weapon system support and used in conjunction with outsourcing or public-private partnerships is Performance Based Logistics (PBL).

The goals for PBL contracts are to provide the US military with a higher level of logistics efficiency and effectiveness, to improve accountability, and develop more reliable products.

> The *Defense Acquisition Guidebook* defines Performance Based Logistics as "the purchase of support as an integrated, affordable, performance package designed to optimize system readiness and meet performance goals for a weapon system through long-term support arrangements with clear lines of authority and responsibility. Application of Performance Based Logistics may be at the system, subsystem, or major assembly level depending on program unique circumstances and appropriate business case analysis."

PBL is used to shift the focus of the government's efforts from transactions to identifying performance outcomes and assigning responsibilities; this is accomplished most frequently by using outsourcing or a public-private partnership. The objective is to develop accountability instead of using control. With PBL, active management of the sustainment process (e.g., forecasting demand, maintaining inventory, and scheduling repairs) becomes the responsibility of the support provider. Additionally, it changes the incentives for the supplier. The supplier, with a properly structured PBL program, is now incentivized to improve the reliability of the systems and reduce inventories of spare parts. With fewer repairs made and fewer parts sold, the contractor stands to make more profit—and, from the government's perspective, PBL results in optimizing total system availability, while at the same time minimizing cost and the logistics footprint. Figure 6 shows the pre-PBL and post-PBL availability for several Navy programs.

Navy Program	Availability	
	Pre-PBL	Post-PBL
F-14 LANTIRN	73%	90%
H-60 Avionics	71%	85%
F/A-18 Stores Mgmt System	65%	98%
Aircraft Tires	81%	98%
Auxiliary Power Unit	65%	90%
ARC-210 Radio	70%	85
F/A-18 C/D F/A-18 E/F FIRST	67%	85%

Figure 6. PBL Results (Defense Procurement and Acquisition Policy, 2005)

Although the primary motivation (in the case of the MK-48) was to return active duty sailors to the fleet, the expectations of improved performance and reduced costs were also motivators, based on the experience of other programs.

III. The Contracts

A. The First Contract: 2000-2005

The first MK-48 Heavyweight Intermediate Maintenance Activity (IMA) contract was competitively awarded by the Naval Sea Systems Command to Raytheon on August 18, 2000. The contract was for one base year and four option years, through 2004. The Navy's goal was to have Pearl Harbor Naval Magazine IMA operated by a skilled and trained work force to be able to induct, process, and issue approximately 360 full and partial weapon maintenance actions, as well as associated torpedo components each year. The IMA's objective included meeting 100% of fleet deliveries, maintaining sufficient production to meet inventory goals, demonstrating the required reliability and availability standards for the torpedoes produced, and maintaining the flexibility to adapt to schedule changes. The contractor would also provide Progressive Depot Level Repair technical support for both the IMA at Pearl Harbor and Yorktown. Since the Navy believed that the scope and type of work were well defined, it structured the contract as fixed price and incentive-fee.[3]

The Navy would provide the contractor with the facility, all the required parts and equipment, as well as the procedures necessary to perform the maintenance tasks. The contractor would be responsible for maintaining the Government Furnished Equipment and Property—as well as Government Furnished Information provided to the contractor—and security for the facility, according to Navy regulations. Finally, in addition to the fees for the maintenance activities, the contract established an incentive

[3] Progressive Depot Level Repair would be executed as a time and materials contract, and the maintenance of Government Furnished Property would be done on a cost-plus, fixed-fee reimbursable basis.

structure, with associated metrics to encourage and reward the contractor for achieving the quality and performance objectives as specified in the contract.

The contract establishes Fee Evaluation Periods (two periods per year) when the Program Manager would gather information from the supervisors and direct managers of the project and determine the amount of incentive fee for work during a specific evaluation period. The total incentive fee pool for each evaluation period between 2001 and 2005 was $500,000 per period. The Incentive Fee was allocated into two broad categories—Quality Indicator (65%) and Torpedo Scheduling Responsiveness and Planning (35%)—using the detailed parameters listed in Figure 7 below.

Torpedo Quality Indicator (QI)Categories		% of QI Pool	Incentive Fee/Period
	Reliability	60%	$195,000
	Availability	20%	$65,000
	Reliability Variance Imp.	10%	$32,500
	Warshot Sampling	10%	$32,500
Total QI Categories		100%	$325,000
Torpedo Scheduling Responsiveness and Planning (TSRP) Categories		% of TSRP pool	Incentive Fee/Period
	TSRP Success	50%	$87,500
	Maintaining War Reserve	10%	$17,500
	Deep Stow Maintenance	10%	$17,500
	Warshot Maintenance	10%	$17,500
	BOL[4] Shipments	10%	$17,500
	Exercise Inventory	10%	$17,500
Total TSRP Categories		100%	$175,000

Figure 7. Incentive Fee Allotment

For each one of these parameters, the contract contained detailed definitions and formulae for the calculations (See Appendix A). Additionally, beginning in 2002, the contractor would be incentivized to encourage savings on the GFE parts usage.[5]

[4] Balance of Lot (BOL) shipments are shipments back to Keyport that support the MK-48 MOD 6 upgrade pipeline.

The contract also contained two forms of negative incentive. The first would decrease the available incentive fee if the contractor failed to meet the lowest acceptable level of reliability, availability, warshot sampling, or Torpedo Scheduling Responsiveness and Planning (TSRP) during the evaluation period. The second was triggered when reliability performance fell below the Lowest Acceptable Levels (LAL).[6]

Cases in which reliability was below the lowest acceptable levels, other initiatives could be taken, such as standing down the contractor's operations for a period of up to two weeks in order to perform a complete technical review and audit of all torpedo maintenance process. During the first contract, the incentive fee categories, schedule, and decrement changed, but the principles and manner in which it functions remained the same.[7]

As the contract approached the end of the last option year, it became evident that Raytheon would not complete all the contract-required torpedo turns, due to several factors. These included programmatic errors on the part of Navy Management (Campbell, 2007) as well as replacement parts availability, torpedo availability, and contractor workforce errors (Seveny, 2007). As the contract progressed through the option years, a bow-wave of uncompleted work began to build. As the contract approached the brick wall at the end of the final option year, it became clear that the contractor would be unable to deliver approximately 200 torpedoes (Campbell, 2007).

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[5] This would be based on a baseline based of the previous year, as adjusted for any government generated savings. The contractor would receive 50% of the realized savings, based on the adjusted baseline.

[6] For example, if during Period 5 of the contract 2001-2005 the level of contractor's reliability equaled 82.5% and the Lowest Acceptable Level was 85%, the difference would be -2.5%. In this scenario, the negative incentive would be $25,000 for each percentage point below the Lowest Acceptable Level, so the negative Incentive would be: $25,000 x (-2.5%)=-$62,500

[7] See contract 2000. Contract No. N00024-00-C-6104, Amendment P00037.

Although Raytheon was obligated by the terms of the contract, it had been responding to the Navy's tasking, based on the Fleet's dynamic requirements, and was proud of the fact that it met the Fleet's operational needs—no submarine ever left the pier without all its required torpedoes. Since the Navy did not order all the required torpedoes within two of the required contract line items, a bilateral agreement was reached to extend the contract through March 2006, with an upward price adjustment of $904,000, so that the contract requirements could be met (Contract No. N00024-00-C-6104, Amendment P00058).

As this extension to the first contract was coming to an end, the Navy faced some tough decisions. The first contract had two major issues. Even though the incentive structure had been modified once, it never worked as planned. The contactor only received an incentive award (a fraction of the total available) in two of the evaluation periods. The Navy put much of the incentive emphasis on torpedo-level reliability and availability, very much in the spirit of a performance-type contract. However, Raytheon only controlled a small fraction of the elements that contributed to the system-level performance. It was required to use Navy supplied equipment, parts, and procedures; and, although it could recommend changes to improve these, it did not control their performance. For example, if Raytheon installed a Navy supplied alternator, which subsequently failed during the exercise shot, is it reasonable to hold Raytheon responsible for the torpedo failure? Clearly, in most cases (unless it damaged the alternator during handling and installation) the answer is no. The same holds true for availability; Raytheon's primary impact on the torpedoes' availability was through the IMA workforce, and while workforce inefficiencies and errors certainly would contribute to the system level availability, it was not the sole contributor. Raytheon had hardware

awaiting Fleet Failure Analysis (FFA), which affected the availability of some parts and impeded its ability to respond to line item orders.[8]

Additionally, the original contract was awarded with a provision for a government surveillance team (Contract Surveillance Representatives (CSR)). At the request of Raytheon, the CSR team was removed, and a Torpedo Certification Examining Board (TCEB) certification event was added to the contract. This eliminated the "constant surveillance" on the IMA floor and replaced it with a structured certification event. An unintended consequence was that Raytheon focused the IMA labor on Torpedo Production. In 2004, the Navy discovered that approximately 70 pieces of equipment were not being maintained, and the government inspections were reinstated. Lastly, the parts usage incentive created a perverse incentive that resulted in the contractor not turning in excess parts until the end of the last option year, which was not the desired effect.

The second major issue was the inability to reconcile the dynamic fleet requirements with the static contract requirement (for the number of torpedoes that the contractor must turn). This was complicated by the fact that the program office only ordered the number of torpedoes required to meet the fleet's operational and exercise requirement—they could have ordered more in the warshot configuration and placed them in the magazine but did not.

Finally, the Navy was slow to initiate the contract action for the follow-on contract and believed that Raytheon was "the only known source with the required knowledge and

[8] This subsequently led to the FFA Hold incentive in the follow-on contract.

expertise necessary to operate the MK-48 IMA" (Department of the Navy, 2005). Consequently, the Navy did not hold a competition for the follow-on contract but awarded a sole-source contract to Raytheon.

B. Second Contract: 2006-2007

The second contract was awarded sole-source to Raytheon and was again structured primarily as a fixed price, incentive fee contract.[9] It was specifically written to incentivize the contractor to "pre-build" (to the extent possible) the main assemblies of the torpedo. The contract line items were broken down into the main assembly sections, allowing the contractor to get paid incrementally as parts were completed during the production effort. Based on the Navy's dissatisfaction with the incentive structure of the first contract, the incentive fee in the second contract was also completely reworked, simplified, and reduced. Finally, the incentive fee per period was reduced to $400,000 as shown in Figure 8.

Incentive Categories	Percent of Incentive Fee	Incentive Fee Allocated per Period
Torpedo Workmanship Failure Evaluation	70%	$280,000
Fleet Failure Analysis (FAA)	20%	$80,000
Supply	10%	$40,000
Total	100%	$400,000

Figure 8. Incentive Categories and Fees from the 2006 Contract

These categories were significantly changed in an effort to increase the effectiveness of the incentive. The program office recognized that Raytheon's primary contribution to

[9] Also like the first contract, the Progressive Depot Level Repair would be executed as a time and materials contract, while the maintenance of Government Furnished Property would be done on a cost plus fixed-fee, reimbursable basis.

availability and reliability was through workmanship, and the primary goal was to reduce workmanship-induced failures. There was also a recognition by the program office that fleet failures analysis and turn-in of Depot level Repairable (DLR) parts should be given more attention to mitigate the issues identified during the original contract. Finally, the Negative Incentive clause was also simplified (see Appendix B)—putting in a single percentage as the Lowest Acceptable Level (83%) for MOD-6 torpedo reliability. Torpedo reliability would be measured during the base year and each option year. The consequence of falling below the Lowest Acceptable Level could be termination of the contract, when the reliability degradation is due to and falls solely within the responsibility of the Contractor's performance (N00024-06-C-6107).

In Attachment 12 of the 2006 contract, the number of estimated turnaround/overhauls per year increased from 300, as reflected in the previous contract, to 400.

IV. Pearl Harbor IMA Outsourcing Results

The primary motivation for outsourcing the Pearl Harbor IMA was not to improve its performance or reduce cost but to transition the active duty sailor positions back to other fleet duties. This objective was clearly achieved.

A. Performance

Based on the historical data from other programs previously presented, however, it would also be reasonable to expect a performance improvement and a cost reduction. Based on the available data, we have attempted to assess the realized impacts of outsourcing this activity. For the MK-48 IMAs, the two most important measures of performance are reliability and availability. Reliability is defined in this contract as the percentage of torpedoes that, once fired, run as designed. Availability, on the other hand, is defined as a percentage of torpedoes that have successfully passed all the required pre-launch checks and are ready to be fired.

There are a number of factors that can adversely affect reliability and availability. These include poorly designed components, defective components, and from the IMA perspective, errors in workmanship. There are no performance data available from Pearl Harbor documenting the performance before the outsourcing. The Yorktown IMA, however, is still manned by active duty sailors, and we believe it is appropriate to use it as a surrogate to compare the level of workmanship errors between the two different management strategies (see Figure 9 below)[10].

[10] Keyport is primarily a production and R&D IMA with limited legacy torpedo builds, so Pearl Harbor and Yorktown comparison in performance is more appropriate.

	Pearl Harbor IMA (Raytheon)	Yorktown IMA (Active Duty Sailors)
Availability Failures due to Workmanship Errors	0.5%	0.6%
Reliability Failures due to Workmanship Errors	3.4%	2.7%

Figure 9. Availability and Reliability Failures Due to Workmanship for the Last 100 Torpedoes (Campbell, 2007).

These figures refer to the percentage of builds with IMA defects (due to workmanship errors) that resulted in either an availability or reliability failure for the last 100 MK-48 torpedoes (Mod 6) built by each of these two facilities. Historical availability and reliability statistics for each of these facilities over the last 7 years has also been made available. During the 7-year period since the outsourcing of Pearl Harbor, approximately 2,000 torpedoes have been built by each facility. Since the actual statistics take into account all failure modes (not just workmanship errors), they are classified and, therefore, only a relative comparison has been provided (see Figure 9).

	Pearl Harbor IMA (Raytheon)
Relative Availability	0.2% more failures than Yorktown
Relative Reliability	0.1% fewer failures than Yorktown

Figure 10. Relative Availability and Reliability Statistics over the Last 7 Years (Campbell, 2007).

Although the reliability workmanship errors at Pearl Harbor for the last 100 torpedoes are slightly higher than Yorktown, the 7-year cumulative reliability for Pearl Harbor torpedoes is better than Yorktown. In summary, during the 7-year period, there was

almost no statistical difference in performance between the two IMAs, as measured by availability and reliability of the torpedoes built.

B. Schedule

Unfortunately, no direct comparison related to scheduled deliveries can be made as the contract's requirements are not directly comparable to the other two IMA's operations. Notwithstanding the lack of such data, the program office has informed us that in the preceding 7 years, the Pearl Harbor IMA facility has never missed a submarine load-out date, which is what really matters to the fleet.

C. Cost

Cost comparison is more problematic. Since the Yorktown IMA is primarily manned by active duty military, there is incomplete visibility into the total true cost of the military workforce and the associated training. Therefore, our labor comparison will be with the Keyport IMA, which is manned by Navy civilians. The average costs per torpedo turn for both IMAs in FY07 are shown in Figure 11 (Campbell 2007).

Comparison for 2007		
	Pearl Harbor (Raytheon)	**Keyport (Navy Civilian)**
Cost/Torpedo turn	$78,811	$84,340

Figure 11. Average Cost for Torpedo Turn (Campbell, 2007)

Since Pearl Harbor turns approximately 300 torpedoes per year, the total annual savings are almost $1.7 million.

V. Lessons Learned

The MK-48 IMA outsourcing at Pearl Harbor offers the opportunity to learn from some of the challenges of successfully outsourcing a commercial activity. How much the government would save also depends on the extent of underutilized capacity and duplication among the services, the size of up-front costs (such as leasing and disposing of equipment and training the workforce to manage contracts), and perhaps most importantly, the presence of competition in the private sector. Success in achieving savings and avoiding poor performance also requires a skilled government management workforce capable of specifying and monitoring performance in contracts.

Lesson 1. Do The Right Things

When the Navy decided to outsource the Pearl Harbor IMA, the implicit argument was that performing intermediate maintenance on MK-48 torpedoes was not an inherently governmental function, requiring Navy personnel. Sailors doing that work would be more valuable in other, more fleet-oriented, positions.

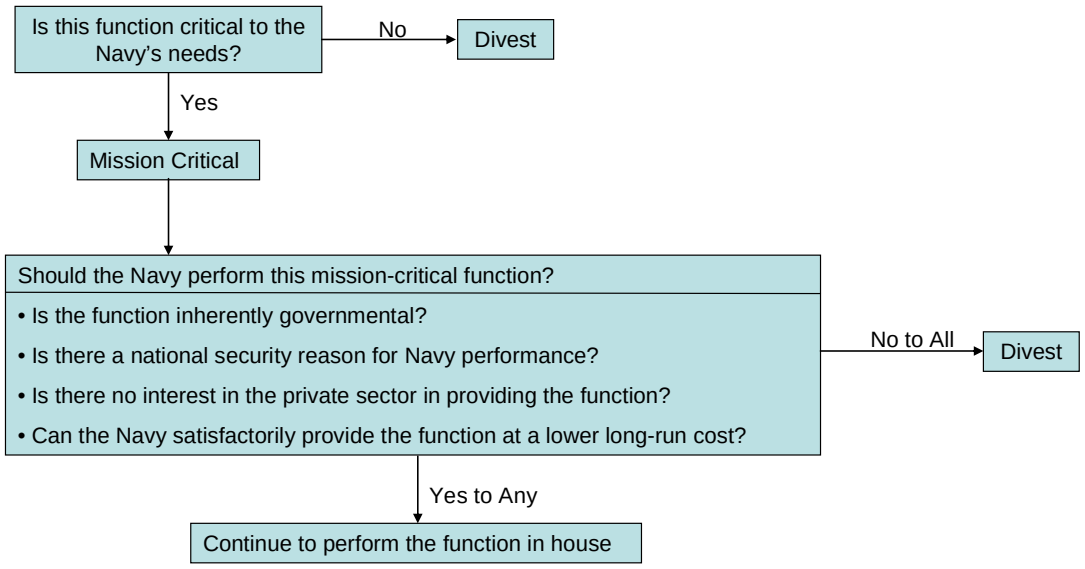
The Navy was following an approach that the private sector has used very successfully: combining two strategic approaches. First, it needed to concentrate the firm's resources on a set of core competencies, in which it can provide unique value, and, second it needed to strategically outsource other activities for which the firm does not have special capabilities (many of these would have been traditionally considered integral to any company). Combining these two strategies allowed managers to leverage resources in four ways:

1. Concentrate resources on what they do best
2. Develop core competencies to protect their competitive advantage

3. Leverage the investments, innovations, and specialized capabilities of their external suppliers
4. Decrease risk, shorten cycle times, and lower investment in rapidly changing markets (Quinn 1994)

The DoD, however, is not a business, and when DoD personnel were asked which of the issues—impact on cost, impact on personnel, impact on mission performance—were important considerations when considering outsourcing, 77% (89% for those that identified themselves as being in a Command position) identified impact on mission performance as important (Anderson, 2002). With this appropriate focus on mission performance, it does not take much rationalization to justify any activity as being inherently governmental, if the overriding characteristic is that the function is "so intimately related to the public interest as to mandate performance by Government employees" (Anderson, 2002).

RAND Corporation developed a framework to assess whether the government should divest a capability (see Figure 12), which we have adapted to examine outsourcing candidates (Held, 2002). Working through this framework, the only question that causes pause is "Can the Navy satisfactorily provide the function at lower long-run cost?" Based on the data available, this seems not to be the case, and, according to the adopted framework, there is no reason not to divest this function. Therefore, we can conclude the Navy made the correct decision when it decided to outsource the Pearl Harbor IMA.



Adapted from the RAND Framework, *Seeking Nontraditional Approaches to Collaborating and Partnership with Industry*, 2002

Figure 12. Framework for Assessing Outsourcing Candidates

Lesson 2. Use The Most Appropriate Contract Type

With outsourcing, the competitively awarded contract is the primary mechanism to ensure that the Navy's needs and expectations are met. Consequently, effective contracts are critical to obtaining the desired performance from the contractor. One of the keys to having an effective contract is the selection of the contract type. In this case, the program office chose a fixed-price contract (for the IMA effort). Although there was a fixed-price, incentive-fee contract, the fleet schedules changed frequently, impacting the IMA requirements. Additionally, the fixed-price contract may have been a factor in the limited interest from contractors to the initial Request for Proposal (RFP)—suppliers would have

been unable to accurately assess the risk. The program office is currently considering a cost-plus, award-fee for the follow-on contract (Campbell, 2007).

Moreover, although competition may produce savings, proponents of outsourcing may recommend establishing long-term relationships with suppliers by signing 5- to 10-year contracts. In this case, however, since there is little capital investment, and such long-term contracts may reduce—if not temporarily eliminate—the pressure of potential competition, thereby creating problems for the Navy if performance was poor. A 1-year contract, with 1-year options, offers the flexibility needed without sacrificing the competition option.

Lesson 3. Develop an Appropriate Incentive Structure

When the Navy pursued the outsourcing of the IMA, it shifted its focus from being the "doers" to being the "managers of the doers." From that time on, managing the relationship with the contractor became a principal task. Although the contractor would be responsible for operating the outsourced IMA and would be an integral part of the MK-48 supply chain, firms behave in ways that maximize their own interest, not necessarily in ways that maximize the overall supply chains' interest (Narayanan, 2004). The Navy recognized the value of the incentive fee as a tool to help manage the contractor. An appropriate incentive fee can be a powerful tool to both motivate contractor efforts that might not otherwise be emphasized and also to discourage contractor inefficiency and waste.

Although the program office recognized the benefits of using an incentive fee, it learned that contract incentives must be carefully crafted; otherwise, they may not have the

desired effect. The initial contract had an incentive fee structure that was badly designed. It attempted to incentivize outcomes that the contractor could only partially affect. As a result, they did not achieve their objectives, and, in fact, they may have resulted in undesirable behavior (i.e., the supply problems created by the incentive fee structure in the first contract) (Tompkins, 2007).

The incentive structure in the second contract recognized the limited impact the contractor had on system availability and reliability and put in place a scheme to reduce failures induced by workmanship. Small changes in contracts can have a significant impact, and both the program office and contractor were much more pleased with the second contract's incentive structure (Campbell, 2007; Seveny, 2007).

Lesson 4. Improve Cost Accounting to Inform Market-Based Government Initiatives

The capability to identify the true cost of an activity is critical to discovering opportunities for cost improvement, to prepare a business case analysis, and improve strategic decision-making. Traditional DoD cost accounting systems often mask the true costs associated with performing services or producing an item, making it difficult, if not impossible, to compare various sourcing options. If the real costs are not understood, the impact of proposed changes cannot be effectively demonstrated before hand, and the real impacts cannot be evaluated after the fact.

Activity-based costing is one method of deriving the costs of an enterprise's output by identifying processes used in the production and delivery of the output as well as the resources used in the performance of these processes. Activity-based costing would improve the outsourcing decision process by making it easier to compare the Navy's true

cost for operating the IMA with organic resources vs. the cost of a comparable service provided by a contractor. Activity-based costing would also help managers analyze organizational requirements and structures by focusing on the costs to perform individual activities.

Lesson 5. Develop Appropriate Performance Metrics

Although meeting the Fleet's operational requirements is one critical measure of program effectiveness, identification and collection of other program metrics is also critical to measure program efficiencies, assess progress toward program goals, enable problem areas to be diagnosed quickly and addressed as necessary, and make the decision whether to modify or continue the support contract. They can also be used to make comparisons with historical performance and cost data as well as with best practice benchmarks. These measures should focus on performance criteria, not cost, as the primary metric. With effective and efficient management, cost reduction will follow.

Lesson 6. Maintain a Competitive Environment

The full benefits of outsourcing are achieved only if there is the continuous alternative of competition (in an open and fair competitive environment) to incentivize the current contractor to best performance at lowest costs. In this case, the Navy chose to award the second contract as a sole-source award to Raytheon. As complexity of the tasks increases, it is expected that greater barriers to entry will exist and fewer participants. However, within the Pearl Harbor IMA, the contractor's function is to recruit, train, and manage a skilled workforce. The barriers to entry are not exceedingly high.

Although, in the end, the contractor's performance was satisfactory, we believe the performance improvements would have been greater in a competitive environment (i.e., one in which, if performance falls off or the costs rise, the viable option of competition is always present). Competition is the essential element—not private workers versus public/military employees but competition versus monopoly—that will enable the Navy to realize the full benefits available through outsourcing. For its next contract, the Navy is planning a full and open competition (Campbell, 2007).

Lesson 7. Get the Facts and Make Them Widely Available

Using alternative sourcing strategies, such as outsourcing, generally meets with cultural (institutional) resistance. Improving communication within the Navy, as well as with external stakeholders, can greatly reduce resistance and improve the environment in which these sourcing decisions are made. For example, since all three IMAs are performing similar functions, but are managed using different strategies, comparisons are inevitable.

It is very helpful if these comparisons are based on accurate information. The contractor managed IMA performs at essentially the same level (in terms of availability and reliability) as the Yorktown IMA manned by military personnel. It is, however, difficult to make an accurate cost comparison between these two—there is a lack of visibility into the total costs of the sailor-manned Yorktown IMA. As previously stated, every effort should be made to develop accurate cost data for the Yorktown IMA. We compared the costs from the Pearl Harbor IMA with similar tasks at the government-civilian-operated

Keyport IMA, where the costs are higher. Communicating accurate results is key to creating a friendlier environment and reducing the resistance to change.

VI. Conclusions

Over the past two decades, the DoD has increased its outsourcing, privatization, and competitive sourcing. Using these alternative sourcing strategies generally provides improved performance at lower costs and changes the nature of the government's work. The benefits are accrued primarily by shifting from a monopoly to a competitive environment (or at least the serious threat of competition), rather than merely contracting-out. The issue is not who performs the work but, rather, the incentives for higher performance at lower costs that come from competition. The competition must focus on best value rather than simply low cost; otherwise, the cost reduction will come at the expense of performance. With outsourcing, the function that outsourcing suppliers provide is their core capability; they have specialists and must invest in improving their techniques and technology to stay competitive in the market. The outsourcing organization is then free to focus on its core functions. In spite of these benefits, these changes frequently meet with cultural resistance, especially when trying to redefine "the proper role of government."

The Navy has achieved its primary objective and returned the sailors that manned the MK-48 IMA at Pearl Harbor to the fleet. Based on the results, the performance impacts of the outsourcing were not as dramatic as some one might have hoped for; however, the costs have decreased (the costs are currently lower than the comparable cost at the Keyport IMA). We believe this is largely due to the nature of the work and the narrow scope of the effort, as well as some of the "lessons learned" previously discussed.

To improve performance with the future contracts, the Navy should develop an acquisition strategy that uses a contract structure more closely aligned with the nature of

the tasks and encourage the maximum degree of potential competition. With this outsourcing, which in a real sense could be called a “partnership,” the Navy must continue to balance the tension between the need for competition with the real requirement to build a trust relationship with its partner, the contractor. With its successful history, and some minor improvements to the implementation, the Navy should see greater performance improvements as well as increased cost savings—just the kind of result the Navy needs.

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The Honorable Jacques S. Gansler, former Under Secretary of Defense for Acquisition, Technology, and Logistics, is a professor and holds the Roger C. Lipitz Chair in Public Policy and Private Enterprise in the School of Public Policy, and is the Director of both the Center for Public Policy and Private Enterprise and the Sloan Biotechnology Industry Center. As the third-ranking civilian at the Pentagon from 1997 to 2001, Dr. Gansler was responsible for all research and development, acquisition reform, logistics, advance technology, environmental security, defense industry, and numerous other security programs.

Before joining the Clinton Administration, Dr. Gansler held a variety of positions in government and the private sector, including Deputy Assistant Secretary of Defense (Material Acquisition), assistant director of defense research and engineering (electronics), executive vice president at TASC, vice president of ITT, and engineering and management positions with Singer and Raytheon Corporations.

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William Lucyshyn is the Director of Research and a Senior Research Scholar at the Center for Public Policy and Private Enterprise in the School of Public Policy at the University of Maryland. In this position, he directs and conducts research that addresses complex public policy problems in an effort to speed improvements in the management and delivery of public services.

During the past few years, he has written extensively on federal government initiatives, such as outsourcing, privatization, and competitive sourcing, to make government more market-based. Previously, Mr. Lucyshyn served as the principal technical advisor to the Director, DARPA, and the Under Secretary of Defense (Acquisition, Technology, and Logistics), on the identification, selection, research, development, and prototype production of advanced technology projects. He controlled and directed the multi-million dollar budget and the efforts of 50 government and contractor personnel.

Prior to this appointment, Mr. Lucyshyn completed a 25-year career in the US Air Force serving various operations, staff, and acquisition positions. He received his Bachelor

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Benigno Alarcón Deza

Benigno Alarcón Deza graduated with a degree in Law from the Catholic University, Andrés Bello (Caracas) in 1989. In 1995, he finished a Magíster Scientiarum in Security and Defense at the Institute of High Studies In Security and Defense of Venezuela. Later, in 1999, he finished a second Master's Degree in International Law at the Central University of Venezuela. Finally, in 2007, he received a third Master's Degree, this time in Public Management, at the School of Public Policy of the University of Maryland. Additionally, he has completed several courses in Conflict Resolution, Management, and Security and Defense at IESA (Caracas), American University (Washington DC), and the National Defense University (Washington, DC). Professionally, he is very well known in his country as an expert in Conflict Resolution (negotiation and mediation) in private and public affairs. At the same time, he has been teaching in undergraduate and graduate courses at the university for more than 10 years. At this time, he is the coordinator of the graduate program in Government and Public Management at the Catholic University, Andrés Bello.

Appendix A—Incentive Fee Structure Excerpt from Contract N200024-00-C-6104

an amount that the Contracting Officer considers necessary to protect the Government's interest. This reserve shall not exceed one percent of the total estimated cost shown in the Schedule or $100,000, whichever is less.

B-7 INCENTIVE FEE

1. Incentive Fee

In addition to the prices specified in Section B, the Contractor may earn Incentive Fee, as determined by the Government. The Government's purpose in granting Incentive Fee is to encourage and reward the Contractor's performance in achieving program objectives for quality and schedule as specified in this contract and in performing related contract obligations. By way of overseeing the Contractor's performance, the Government will continuously measure and monitor the manner in which the Contractor is proceeding to attain such objectives and to perform such obligations.

Whenever the term "Fee" appears under this Contract Requirement, it is deemed to mean "Incentive Fee."

2. Fee Determining Official

At the end of each Incentive Fee evaluation period as set forth in this provision, the Program Manager, or his designated representative shall, based on the information obtained from the Officer in Charge (OIC), the COR, the ISEA, the Commanding Officer of NUWC Keyport, and COMSUBPAC, and any other pertinent information known, determine the amount of Incentive Fee which will be paid to the Contractor for its work during the past period.

3. Evaluation Periods

Performance ratings will be conducted in accordance with the following schedule:

Incentive Fee Items and Periods		
Item	**Period**	**Time**
0004	1	Exercise of Item 0002 – 31 October 2001
0011AA	2	01 November 2001 – 30 April 2002
0011AB	3	01 May 2002 – 31 October 2002
0017AA	4	01 November 2002 – 30 April 2003
0017AB	5	01 May 2003 – 31 October 2003
0023AA	6	01 November 2003 – 30 April 2004
0023AB	7	01 May 2004 – 31 October 2004
0029AA	8	01 November 2004 – 30 April 2005

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0029AB	9	01 May 2005 – 30 September 2005

4. Incentive Fee Available

The purpose of this paragraph is to identify the maximum Incentive Fee pool that the Contractor may earn for each evaluation period. The maximum Incentive Fee established under this contract for each evaluation period is specified in the table below. A determination of Incentive Fee earned by the Contractor, if any, and payment therefore, shall be made at the end of each Incentive Fee period as set forth above. The amount of contract funding obligated under this contract may be increased from time to time by the Contracting Officer in order to obligate funds as needed for Incentive Fee payment purposes.

Incentive Fee Pool Per Period		
Period	**Incentive Fee Items**	**Incentive Fee Pool**
1	0004	$500,000
2	0011AA	$500,000
3	0011AB	$500,000
4	0017AA	$500,000
5	0017AB	$500,000
6	0023AA	$500,000
7	0023AB	$500,000
8	0029AA	$500,000
9	0029AB	$500,000

5. Incentive Fee Evaluation Categories

The evaluation of the contractor's performance will be based upon the categories listed below and the Incentive Fee pools established in paragraph 4 above will be allotted as follows:

Incentive Fee Allotment Per Incentive Category		
Category	**% of Incentive Fee Pool**	**Incentive Fee Allocated per Period**
Torpedo Quality Indicators (QI)	65%	$325,000
Torpedo Scheduling Responsiveness and Planning (TSRP)	35%	$175,000

(a) Torpedo Quality Indicators:

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Torpedo Quality Indicators to be incentivized under this contract are Reliability, Availability, Reliability Variance Improvement, and Warshot Sampling. The Quality Indicators Incentive Pool is distributed as follows for each evaluation period:

Incentive Fee Allotment for Quality Indicator Categories		
Torpedo Quality Indicator Categories	**% of QI Incentive Pool**	**Incentive Fee Allocated per Period**
Reliability	60%	$195,000
Availability	20%	$65,000
Reliability Variance Improvement	10%	$32,500
Warshot Sampling	10%	$32,500
Total	100%	$325,000

Torpedo quality is calculated in aggregate for MK 48 MODs 4, 5, and 6 weapons to ensure that the total sample size is sufficient.

(1) Torpedo Reliability Calculation:

Exercise torpedo reliability is defined as the percentage of valid launched torpedoes that ran as planned (to low fuel or commanded shutdown) without failure or "undesired" weapon behavior. Material failures, design anomalies, or assembly errors contribute to reliability failures.

$$R_{ex} = \frac{\text{Mod 4 Sat Runs + Mod 5 Sat Runs + Mod 6 Sat Runs}}{\text{(Mod 4 Launched - Mod 4 Invalid) + (Mod 5 Launched - Mod 5 Invalid) + (Mod 6 Launched - Mod 6 Invalid)}}$$

Determination of Reliability Indicator (RI): The RI percentage will be determined by subtracting the required reliability threshold (Req) for each evaluation period in Table 1 below from the R_{ex} value calculated as shown above.

Determination of Reliability Incentive: The Reliability Incentive for each period is determined by multiplying the resulting difference between the R_{ex} and Req percentages from Table 2 below by the incentive fee amount allotted to Reliability.

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Table 1			
Reliability Requirement (Req) Period 1	**Reliability Requirement (Req) Periods 2 & 3**	**Reliability Requirement (Req) Periods 4 – 5**	**Reliability Requirement (Req) Periods 6 – 9**
86%	87%	88%	89%

Table 2		
RI = R_{ex} – Req	**Incentive Fee Percentage**	**Incentive Rate to next RI bracket**
0%	0%	10 * RI
1%	10%	15 * (RI – 1%) + 10%
3%	40%	30 * (RI – 3%) + 40%
5%	100%	

For example: $195,000 per evaluation period is available for the Reliability Incentive. If the R_{ex} equals 88.5% in Period 2 then the R_{ex} – Req difference, or Reliability Indicator (RI), is 1.5% (88.5% - 87%). The Contractor would earn (15 * (1.5% - 1%) + 10%) x $195,000, or $34,125.

(2) Torpedo Availability Calculation:

Torpedo availability is defined as the percentage of weapons loaded torpedoes that were successfully launched with non-weapon related satisfactory (Sat) backhauls removed.

$$A = \frac{\text{Mod 4 Launched + Mod 5 Launched + Mod 6 Launched}}{\text{(Mod 4 Loaded - Mod 4 Sat Backhauls) + (Mod 5 Loaded - Mod 5 Sat Backhauls) + (Mod 6 Loaded - Mod 6 Sat Backhauls)}}$$

Determination of Availability Indicator (AI): The AI percentage will be determined by subtracting the required availability threshold of 93% (Areq) from the A value calculated as shown above.

Determination of Availability Incentive: The Availability Incentive is determined for each evaluation period by multiplying the resulting AI percentage from Table 3 below by the incentive fee amount allotted to Availability.

SCHEDULE
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Table 1			
Reliability Requirement (Req) Period 1	**Reliability Requirement (Req) Periods 2 & 3**	**Reliability Requirement (Req) Periods 4 – 5**	**Reliability Requirement (Req) Periods 6 – 9**
86%	87%	88%	89%

Table 2		
RI = R_{ex} – Req	**Incentive Fee Percentage**	**Incentive Rate to next RI bracket**
0%	0%	10 * RI
1%	10%	15 * (RI – 1%) + 10%
3%	40%	30 * (RI – 3%) + 40%
5%	100%	

For example: $195,000 per evaluation period is available for the Reliability Incentive. If the R_{ex} equals 88.5% in Period 2 then the R_{ex} – Req difference, or Reliability Indicator (RI), is 1.5% (88.5% - 87%). The Contractor would earn (15 * (1.5% - 1%) + 10%) x $195,000, or $34,125.

(2) Torpedo Availability Calculation:

Torpedo availability is defined as the percentage of weapons loaded torpedoes that were successfully launched with non-weapon related satisfactory (Sat) backhauls removed.

$$A = \frac{\text{Mod 4 Launched + Mod 5 Launched + Mod 6 Launched}}{\text{(Mod 4 Loaded - Mod 4 Sat Backhauls) + (Mod 5 Loaded - Mod 5 Sat Backhauls) + (Mod 6 Loaded - Mod 6 Sat Backhauls)}}$$

Determination of Availability Indicator (AI): The AI percentage will be determined by subtracting the required availability threshold of 93% (Areq) from the A value calculated as shown above.

Determination of Availability Incentive: The Availability Incentive is determined for each evaluation period by multiplying the resulting AI percentage from Table 3 below by the incentive fee amount allotted to Availability.

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Table 3		
AI = A – Areq	**Incentive Fee Percentage**	**Incentive Rate to next AI bracket**
0%	0%	5 * (AI)
2%	10%	15 * (AI – 2%) + 10%
4%	40%	30 * (AI - 4%) + 40%
6%	100%	

For example: $65,000 per evaluation period is available for the Availability Incentive. If the A equals 98% in Period 2 then the A – Areq difference, or the Availability Indicator (AI), is 5%. The Contractor would earn (30 * (5% - 4%) + 40%) x $65,000, or $45,500.

(3) Reliability Variance Improvement

Torpedo Reliability Variance is defined as the variance of valid launched torpedoes that ran as planned (to low fuel or commanded shutdown) without failure or "undesired" weapon behavior. Material failures, design anomalies, or assembly errors contribute to reliability failures.

Rvar = Highest Value of the Sliding 100 Average – Lowest Value of the Sliding 100 Average

Determination of Reliability Variance Incentive: The Reliability Variance is determined for each evaluation period by multiplying the resulting Rvar percentage as shown in Table 4 below by the incentive fee amount allotted to Reliability Variance.

Table 4		
Reliability Variance (Rvar)	**Incentive Fee Percentage**	**Incentive Rate to next Rvar bracket**
±8%	0%	10 * (Rvar – 7%)
±7%	10%	15 * (Rvar – 5%) + 10%
±5%	40%	60 * (Rvar – 4%) + 40%
±4%	100%	

For example: $32,500 per evaluation period is available for the Reliability Variance Incentive. If the Rvar equals ±6%, then the incentive fee earned would be $8,125, which was calculated as follows: (15 * (6% - 5%) + 10%) x $32,500.

(4) Warshot Sampling

Warshot Sampling is the combination of the following and shall consist of a

minimum sampling size of 10 actions:

a. Conducting warshot surveillance where the Government will sample and inspect warshot torpedoes during a structured teardown;

b. Drawing a warshot torpedo from the magazine, with an age of one or more years, that is converted to an exercise torpedo and fired; and

c. The pulling of random sections from the production line that were intended for warshot All-Up-Rounds and using them for exercise torpedoes.

$$WSS = \frac{\text{Sum of WS Sample Tests and Inspections that Pass}}{\text{Sum to Total WS Sample Tests and Inspections}}$$

For Warshot Sampling Scores (WSSs) of 90% or more, the contractor will earn the total incentive fee allotted to Warshot Sampling. If the WSS is less than 90%, no incentive fee will be earned.

(b) Torpedo Schedule Responsiveness and Planning Incentive

The Torpedo Schedule Responsiveness and Planning (TSRP) incentive is intended to focus the contractor on the Ready for Issue (RFI) requirements in meeting the customer's submarine torpedo load out schedule. In addition, the contractor is rewarded for meeting the programmed work to maintain the Fleet inventory objectives established by the Program Office.

The TSRP Pool is distributed as follows for each evaluation period:

Incentive Fee Allotment for TSRP Categories		
Torpedo TSRP Categories	**% of TSRP Incentive Pool**	**Incentive Fee Allocated per Period**
TSRP Success	50%	$87,500
Maintaining War Reserve	10%	$17,500
Deep Stow Maintenance	10%	$17,500
Warshot Maintenance	10%	$17,500
BOL Shipments	10%	$17,500
Exercise Inventory	10%	$17,500
Total	100%	$175,000

The scheduled torpedo build process is described in Section F.

SCHEDULE
SECTION B- SUPPLIES/SERVICES AND PRICES/COST

(1) TSRP Success (TSRPS)

An incentive is earned by meeting the required RFI scheduled dates. If dates cannot be met because material is not currently available at the IMA to provide the requested weapons, alternate arrangements should be provided to the customer with the best possible mix of weapons to meet his needs. In addition, schedule shifts can be proposed to meet the submarine operational needs. Cooperative efforts between the Sailor-operated IMAs and the customer have resulted in proper production planning that meets the submarine type commander scheduling needs. The type commander can be flexible to a certain extent to ensure his ships have the necessary weapons delivered.

The incentive is earned by meeting the RFI dates based on a scale beginning at meeting greater than 95% of the RFI dates. The scale is set forth in the following formulas such that if 95% of the RFI dates are met, the contractor will earn zero percent from this portion. Additionally, if the contractor meets 100% of the RFI dates, then 100% of this portion will be earned. The range between 95% and 100% of RFI dates will be earned s follows:

$$\text{TSRP Success (TSRPS)} = \frac{\text{RFI dates met}}{\text{RFI torpedoes}}$$

If TSRPS is 95% or less, then the earned incentive equals 0%. If TSRPS is greater than 95%, then the earned incentive equals (TSRPS - .95) * 20 of the TSRPS pool, up to 100%.

For example: 200 RFI torpedoes were delivered with 196 RFI dates met. The TSRPS equals .98 (196/200). Therefore the contractor would earn (.98 -.95) * 20 x $87,500, or $52,500.

(2) TSRP Inventory Management

The second portion of this incentive involves the ability of the contractor to meet the required programmed work in order to support inventory management. Elements of torpedo management include the following quantitative elements. Ten percent (10%) of the award will be earned on a pass/fail (0% or 100%) basis for meeting each of these objectives.

a. Maintaining the required war reserve material to convert the existing exercise inventory into war shot weapons. The material needs to be the proper configuration to support the build up of the correct weapon modifications. If all material is not readily available, an executable plan to achieve the end objective must be in place.

b. The planned deep stow maintenance actions must be met.

c. The planned warshot maintenance actions must be met.

d. Meeting the planned schedule to support the balance of lot (BOL) shipments back to Keyport to support the Mod 6 upgrade pipeline must be met. This may be relaxed if the BOL pipeline requirement places the exercise program at risk due to lack of material at the IMA. The OIC shall approve the deviations to the schedule and the Commanding Officer of Keyport must be informed.

e. The exercise inventory for Mod 5s and Mod 6s shall be maintained within the inventory objectives. This is normally between 110 and 130 weapons. A larger exercise inventory will detract from the warshot inventory.

6. Incentive Decrement

If the contractor fails to meet the lowest acceptable level, as shown in Table 5 below, for either reliability, availability, warshot sampling, or TSRPS, then the total incentive pool for the applicable evaluation period will be decremented by the applicable decrement rate for each percentage point below the lowest acceptable level:

Table 5

	Reliability				**Availability**	**Warshot Sampling**	SRPS
	Period 1	Periods 2 – 3	Periods 4 – 5	Periods 6-9	Periods 1 – 9	Periods 1 – 9	Periods 1 – 9
Lowest Acceptable Level (LAL)	83%	84%	85%	86%	90%	90%	95%
Decrement Rate per Percentage point below LAL	10	10	10	10	5	5	20

For example: If reliability during period 4 is 80%, then the total incentive fee for period 4 would be decremented by $250,000. Resulting in a total incentive fee pool of $250,000. In this example .85 - .80 = .05, therefore .05 x 10 = a 50% decrement; 50% x $500,000 = $250,000.

As another example, if the TSRPS equals 93% then total incentive fee for the period would be decremented by $200,000. Resulting in a total incentive feel pool of $300,000. In this example

.95 - .93 = .02, therefore .02 x 20 = a 40% decrement; 40% x $500,000 = $200,000.

As an example of a cumulative decrement: If reliability during period 3 is 83% and TSRPS is 92%, then the total incentive fee for period 3 would be decremented as follows:

a. .84 - .83 = .01, therefore .01 x 10 = a 10% decrement; 10% x $500,000 = $50,000

b. .95 - .92 = .03, therefore .03 x 20 = a 60% decrement; 60% x $500,000 = $300,000

c. The total decrement would be $350,000 ($50,000 + $300,000) for a total remaining Incentive Fee pool of $150,000 ($500,000 - $150,000).

7. Incentive Evaluation Procedure

Within thirty (30) working days after the end of each evaluation period under this contract, the contractor shall furnish to the Program Office COR, PCO, and OIC such information as may be reasonably required, to assist the Government in determining whether the contractor has met or exceeded, or failed to meet, the above factors and in evaluating the contractor's work in the above areas. The performance evaluation and determination of incentive shall be made by the Government within fifteen (15) days after receipt of such statement. The Government will determine earnings rating for each category and advise the Program Manager of its recommendation including the reasons, rationale and justifications. The findings shall be furnished to the contractor, who will then be provided 15 days to comment on the evaluation findings. The Program Manager shall consider contractor comments in establishing the final incentive fee for each period. If the contractor does not respond within 15 days, the evaluation findings will be considered final and complete.

Following receipt of the contractor's comments, the Program Manager will provide the fee determination in writing to the PCO, setting forth the fee, the rationale and justification therefore, and requesting the PCO to issue a contract modification formally establishing the Incentive Fee for the period. Any unearned positive incentive will not be made available under any subsequent evaluation period.

8. Fee Adjustment Procedures

The evaluation categories specified in paragraph 5, including the individual thresholds, and the distribution of available incentive dollars may be modified from time to time unilaterally by the Government, provided that the Government notifies the Contractor prior to the start of the first affected evaluation period. In the absence of said notification, the performance categories and distribution of available incentive dollars remain as specified above. The alterations described above shall not change the total available incentive potential provided by this clause nor change the incentive earned by the Contractor in any completed evaluation period.

SCHEDULE
SECTION B- SUPPLIES/SERVICES AND PRICES/COST

9. Payment of Incentive Fee

The Contractor shall be paid Incentive fee, if any, upon submittal of a proper invoice or voucher to the cognizant Payment Office, together with a copy of the unilateral modification to the contract authorizing payment of incentive fee for the applicable Evaluation Period. Any incentive fee earned shall be established with execution of the contract modification within forty-five (45) days after incentive determination. This fee shall not be subject to any payment withholding percentage, notwithstanding any other provisions of the contract nor shall the payment under this clause be in any way associated with the Progress Payment Provisions under this contract. The Contractor's invoice must cite the appropriate accounting data in order for payment to be affected.

B-8 PARTS USAGE INCENTIVE

The contractor will be provided COSAL supported parts as Government Furnished Material to perform the maintenance actions required under this contract. Parts usage is tracked via the IMA storeroom HTTDS module. Torpedo turn around costs for parts usage are calculated based on torpedo turnaround type, e.g. Mod 4, Mod 5, and Mod 6. The contractor will be incentivized beginning in FY 2002 to encourage cost savings on parts usage. The contractor will be evaluated every fiscal year, beginning with FY 2002, to determine its costs associated with parts usage for each Mod type of torpedoes built during the year. The average torpedo turnaround parts usage cost for each Mod type from the previous fiscal year, as adjusted for any Government generated savings, will be used as the cost basis for determining contractor cost savings for incentive purposes. The contractor will earn an incentive of 50% of the savings realized in torpedo parts usage due to contractor generated savings. For example, if the average turnaround cost for parts for Mod 5d was $10,000 in FY 2001, a Government Total Ownership Cost initiative adjusted this amount to $9,500, and the contractor is successful in FY 2002 in reducing the turnaround parts cost to $8,500, it will receive an incentive of $500 for each Mod 5 turnaround delivered during the year (($9,500 - $8,500) * .50).

Although the evaluation periods under this incentive are not identical to those under clause B-7, any parts usage incentive earned under this clause will be added to incentives earned in FYs 2002 - 2005 under clause B-7 in order to facilitate total incentive payments. For example, an incentive earned under this clause for FY 2002, which ends 30 September 2002, will be added to incentive fees earned in accordance with Clause B-7 under Period 3, which ends on 31 October 2002.

Conversely, if the average torpedo turnaround parts usage cost increases by greater than 10% from the previous year's average for any Mod type, the contractor shall be responsible for 50% of any increase that is over the 10% increase. Any amount of increase to be attributed to the contractor shall be subtracted from the incentive fee pool for the period ending 31 October of

each year. For example, if the FY01 average torpedo turnaround parts usage cost was $10,000 per Mod 5, and the FY02 average torpedo turnaround parts usage cost increased to $15,000, the incentive fee pool for Period 3 would be decreased by $2,000 for every Mod 5 delivered during Period 3.

The average turnaround parts usage cost for each Mod type that will be used for the basis of determining this incentive will be published at the beginning of each fiscal year beginning with FY 2002.

B-9 NEGATIVE INCENTIVE

In addition to the Incentive Decrement within Clause B-7, this contract contains negative incentives to be imposed for reliability performance that falls below the Lowest Acceptable Levels (LAL) for Reliability as defined in the Table below:

	Period 1	Periods 2 – 3	Periods 4 – 5	Periods 6 – 9
Lowest Acceptable Level (LAL)	83%	84%	85%	86%
LAL Range 1	78% < 83%	79% < 84%	80% < 85%	81% < 86%
LAL Range 2	< 78%	< 79%	< 80%	< 81%

For LAL Range 1, for every percentage point that the contractor falls below the LAL, the contract price will be decreased by $25,000. For example, if during Incentive Fee Evaluation Period 5, the contractor's reliability (R_{ex}) equals 82.5%, the percentage point difference is 2.5 percentage points (85% - 82.5%). Therefore, the contract price for Period 5 Items will be decreased by $62,500 ($25,000 x 2.5).

For LAL Range 2, for every percentage point that the contractor falls below the LAL, the contract price will be decreased by $25,000. Additionally, the Government may at its discretion stand-down the contractor's operations for a period of up to two weeks in order to perform a complete technical review and audit of all torpedo maintenance processes. During this stand-down, a team composed of up to eight Government personnel will be required to perform the review and audit. During any such stand-down, the Government will not accept any torpedo maintenance actions. If the Government elects to stand-down the contractor's operations, an additional $75,000 decrement will be imposed upon the contract price. For example, if during Period 3, the R_{ex} equals 75.5% and the Government elects to stand down operations, the contract price would be decreased by $287,500, which was calculated as follows: 84% - 75.5% = 8.5 percentage points; 8.5 x $25,000 = $212,500; $212,500 + $75,000 = $287,500.

If the level of acceptability falls below LAL Range 1 in two evaluation periods or below LAL Range 2 in any one period, the Government will consider terminating the contract in accordance the applicable clauses in Section I.

Any contract price reductions resulting from this clause will be made by modification of the contract and may result in the reduction or temporary withholding of progress or final payments on the affected line items.

B-10 HOLIDAY SCHEDULE / OPERATING HOURS

Unless the Contractor states otherwise in its Statement of Work, Attachment (2) hereto, the Contractor shall observe the same holidays as the Government and shall be open for business at all other times. These holidays are New Year's Day, Martin Luther King Day President's Day Memorial Day Independence Day Labor Day Columbus Day Veterans' Day, Thanksgiving Day, and Christmas Day

The nature of torpedo preparation and ammunition operations will require the contractor to perform some work outside of regular working hours. These requirements shall be performed irrespective of day and as dictated by vessel arrival departure times and customer Required Delivery Dates (RDD).

B-11 EXPEDITING CONTRACT CLOSEOUT (NAVSEA) (DEC 1995)

(a) As part of the negotiated fixed price or total estimated amount of this contract, both the Government and the Contractor have agreed to waive any entitlement that otherwise might accrue to either party in any residual dollar amount of $500 or less at the time of final contract closeout. The term "residual dollar amount" shall include all money that would otherwise be owed to either party at the end of the contract, except that, amounts connected in any way with taxation, allegations of fraud and/or antitrust violations shall be excluded. For purposes of determining residual dollar amounts, offsets of money owed by one party against money that would otherwise be paid by that party may be considered to the extent permitted by law.

(b) This agreement to waive entitlement to residual dollar amounts has been considered by both parties. It is agreed that the administrative costs for either party associated with collecting such small dollar amounts could exceed the amount to be recovered.

B-12 SERVICES ABOARD A SHIP AT SEA (Applicable to Time and Materials Items)

If a contractor's employee is required to complete services on a ship that is at sea, that employee may be confined to the ship in a non-working status after completion of the services. The

Appendix B—Excerpt from Contract N00024-06–C-6107

INCENTIVE FEE

1. Incentive Fee

In addition to the prices specified in Section B, the Contractor may earn an Incentive Fee, as determined by the Government. The Government's purpose in granting an Incentive Fee is to encourage and reward the Contractor's superior performance in achieving program objectives for quality as specified in this contract. By way of overseeing the Contractor's performance, the Government will continuously measure and monitor the manner in which the Contractor is proceeding to attain these quality objectives. Whenever the term "Fee" appears under this clause, it is deemed to mean "Incentive Fee."

2. Fee Determining Official

At the end of each Incentive Fee evaluation period, the PMS 404 Program Manager, or his designated representative shall, based on the information obtained from the Contractor, Officer in Charge (OIC), the COR, the ISEA, the CLS Manager, and COMSUBPAC, and any other pertinent information known, determine the amount of Incentive Fee. The Incentive Fee will be calculated and paid to the Contractor in accordance with paragraph 6.

3. Evaluation Periods

Performance ratings will be conducted in accordance with the following schedule:

Table B-3-1 - Incentive Fee Periods

SLIN	Period	Category	Period for Incentive
0002AA	1	Torpedo Workmanship Failure Evaluation	Torpedoes ordered under CLIN 0001 and run in water and returned to the IMA. Evaluation period ends December 31, 2006.
0002AB	1	FFA Hold	Torpedoes/components ordered under CLIN 0001. Evaluation period ends December 31, 2006.
0002AC	1	DLR Management	DLR's used for CLIN 0001. Evaluation period ends December 31, 2006.
0011AA	2	Torpedo Workmanship Failure Evaluation	Torpedoes ordered under CLIN 0010 and run in water and returned to the IMA. Evaluation period ends November 15, 2007.
0011AB	2	FFA Hold	Torpedoes/components ordered under CLIN 0010. Evaluation period ends November 15, 2007.
0011AC	2	DLR Management	DLR's used for CLIN 0010. Evaluation period ends November 15, 2007 and delivered by November 15, 2007.

4. Incentive Fee Available

The purpose of this paragraph is to identify the maximum Incentive Fee that the Contractor may earn for each evaluation period. The maximum Incentive Fee established under this contract for each evaluation period is specified in table B-4-1 below. A determination of Incentive Fee earned by the Contractor shall be made at the end of each Incentive Fee period as set forth above. The amount of contract funding obligated under this contract may be increased from time to time by the Contracting Officer in order to obligate funds as needed for Incentive Fee payment purposes.

Table B-4-1 - Incentive Fee Pool Per Period		
Period	**SLIN**	**Incentive Fee**
1	0002AA-0002AC	$400,000
2	0011AA-0011AC	TBD

5. Incentive Fee Evaluation Categories

The evaluation of the contractor's performance will be based upon the categories listed below and the Incentive Fee pools established in paragraph 4 above will be allotted as follows:

Table B-5-1 – Incentive Fee Allotment Categories		
Incentive Categories	**% of Incentive Fee**	**Incentive Fee Allocated per Period**
Torpedo Workmanship Failure Evaluation	70%	$280,000
FAA Hold	20%	$80,000
Supply	10%	$40,000
Total	**100%**	**$400,000**

(1) MOD 6 Torpedo Failure Evaluation:

Torpedo Failure Evaluation (F) is the sum the percentages for MOD6 torpedoes evaluated for reliability for the following categories: “Under Investigation” plus “IMA Assembly Errors” subtracted from 7. “Torpedo Material”, “Root Cause Unknown” and “Torpedo Design” failures are not included. The percentages for the categories evaluated will be calculated in the same manner as the percentages from the monthly Heavyweight Torpedo Reliability Report. Only MOD 6 torpedoes from CLIN 0001 will be used in the calculations for period 1 and only MOD 6 torpedoes from CLIN 0010 will be used in the calculations for period 2. Proofing, WIRE and SWEC runs are not included in the evaluation. Determination of Torpedo Failure Evaluation (F) will be calculated 60 days after the Period of Incentive in Table B-3-1 to provide sufficient time to evaluate torpedoes in the category of “Under Investigation”.

Determination of Torpedo Failure Evaluation (F) Incentive: The Torpedo Failure Evaluation incentive is determined by adding the percentages for "Under Investigation" plus "IMA Assembly Errors" and subtracting from 7. The results are multiplied by the percentage in the table below to determine the percentage of the incentive earned. The percentage is then multiplied by the amount in table B-5-1.

Table B-5.2 – MOD 6 Torpedo Failure Evaluation		
F	**Incentive Fee Percentage**	**Incentive Rate to next bracket**
0%	0%	25 * F
4%	100%	

For example: $280,000 is available for the Torpedo Failure Evaluation Incentive for period 1. If the categories "Under Investigation" plus "IMA Assembly Errors" equals 4.1% in Period 1 then the F = 7 – 4.1 = 2.9%. The Torpedo Failure Evaluation Incentive is (25 * 2.9%) x $280,000 = $203,000.

(2) FFA Hold:

Torpedo parts that are on Fleet Failure Analysis (FFA) hold will be tracked and monitored by the Fleet Failure Analysis Government Representative in a weekly report. The torpedo components that encompass this incentive include all in-water and backhaul configurations, including MOD 5&6 torpedoes, WIRE and SWEC torpedoes as well as pre-WIRE and SWEC torpedoes that fail vacuum or TINTT in the initial process. The quantity and length of time an individual component is on FFA hold will be monitored. At the end of each incentive period the contractor will be paid 50% ($40,000) of the FFA hold incentive if the average number of items on hold in the weekly reports for the incentive period is below fifteen (15). The contractor will be paid the remaining 50% ($40,000) of the FFA hold incentive if the average contractor response time in the weekly reports to FFA request for support is below 5 workdays. The start time for measuring the contractor response time is the time the torpedo/component arrives at the IMA or the release date from NUWC, Newport if the torpedo arrives at the IMA before the release date.

(3) Depot Level Repairable Management

The contractor will be provided COSAL supported parts and in some cases non-COSAL supported parts as Government Furnished Material (GFM) to perform the maintenance actions required under this contract. Included in this GFM, are Depot Level Repairable (DLR) parts used in the maintenance of torpedoes and test equipment. The contractor is required to manage these DLR parts in accordance with NAVICP and program guidelines. DLR items are priced as Standard (full price) and Net (price with a turn-in). It is imperative that the contractor properly order and turn in DLR material so that the government is not charged Standard price for DLR material. In the management of DLR material, the contractor must maintain the stock record to location inventory validity at 100% with no overdue carcass shipment reports outstanding or unaccounted for by the

Navy. The Quarterly DLR Inventory, STR1100 – Requisition Status, STR0430 – DLR Turn-in Log, and STR0450 – Expenditure Log and Overdue Shipments Report will be used to track and manage DLR material. It is imperative that a NRFI carcass be turned in to the Navy Supply System when an A-condition DLR is obtained from the Navy Supply System. All lost carcasses will be investigated per NAVSUP P-485, Para 5128. The NUWCDIVKPT Central Logistics Support (CLS) Manager will notify the Procuring Contracting Officer, PMS 404, and the COR if there is a loss of a DLR carcass by the contractor that results in a Standard Price charge to the Navy by NAVICP. The Incentive Fee will be decremented by the cost incurred by the government for each BK3 that is processed by NAVICP and not subsequently reversed by a BK4. The contractor will not be assessed more than $40,000 during any one incentive period. Additionally, the DLR Management Incentive will be decremented by $5,000 for each DLR that the CLS provides to NAVICP in order to avoid and/or reverse BK3 charges.

6. Incentive Evaluation Procedure

On the end date of each evaluation period in Table B-3.1 under this contract, the contractor shall furnish to the Program Office COR, Contracting Officer, and OIC such information as may be reasonably required, to assist the Government in determining whether the contractor has met or exceeded, or failed to meet, the above factors and in evaluating the contractor's work in the above areas. The Government within sixty (60) working days after December 31st for period 1 and November 15th for period 2 shall make the performance evaluation and determination of incentive. The incentive evaluation team will determine earning ratings for each category and advise the Program Manager in writing of its recommendation including the reasons, rationale and justifications. The contractor will be provided a copy of the incentive evaluation team’s recommendation and will be given ten (10) working days to comment on the evaluation findings that are provided to the Program Manager. If the contractor does not respond within 10 working days, the evaluation findings will be considered final and complete. The PMS 404 Program Manager shall consider contractor comments in establishing the final incentive fee for each period.
The PMS 404 Program Manager will provide the fee determination in writing to the Procuring Contracting Officer (PCO) after receiving the contractor’s comments, setting forth the fee, the rationale and justification, and the request to the PCO to issue a contract modification formally establishing the Incentive Fee for the period.

7. Fee Adjustment Procedures

The evaluation categories specified in paragraph 5, including the individual thresholds, and the distribution of available incentive dollars may be modified from time to time unilaterally by the Government, provided that the Government notifies the Contractor prior to the start of the first affected evaluation period. In the absence of said notification, the performance categories and distribution of available incentive dollars remain as specified above. The alterations described above shall not change the total available incentive potential provided by this clause nor change the incentive earned by the Contractor in any completed evaluation period.

8. Payment of Incentive Fee

The Contractor shall be paid Incentive fee, if any, upon submittal of a proper invoice or voucher to the cognizant Payment Office, together with a copy of the unilateral modification to the contract authorizing payment of incentive fee for the applicable Evaluation Period. Any incentive fee earned shall be established with execution of the contract modification within forty-five (45) calendar days after incentive determination. This fee shall not be subject to any payment withholding percentage, notwithstanding any other provisions of the contract nor shall the payment under this clause be in any way associated with the Progress Payment Provisions under this contract. The Contractor's invoice must cite the appropriate accounting data in order for payment to be affected.

NEGATIVE INCENTIVE

This contract contains negative incentives to be imposed for MOD6 torpedo reliability performance that falls below a prescribed Lowest Acceptable Level (LAL).

1. MOD6 Torpedo Reliability

The table below provides the LAL for MOD6 Torpedo Reliability:

Table B-1-1 – Negative Incentive Lowest Acceptable Level For MOD6 Torpedo Reliability	
Contract Year Period of Performance	
Lowest Acceptable Level (LAL)	83%

Torpedo reliability will be measured for the base year and each option year. If at any time torpedo reliability falls below the LAL, the contractor’s performance will be evaluated and the Government will consider terminating the contract in accordance with the applicable clauses in Section I only in the event the reliability degradation is the sole responsibility of the Contractor’s contract performance.

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