On December 1, 1976, the Electric Boat division of General Dynamics submitted to the United States Navy a contract claim for more than $500 million arising from a $2.7 billion contract for 18 Los Angeles class SSN-688 attack submarines. The claim alleged that the payments General Dynamics had received from the Navy under its fixed-price contract were insufficient to cover its actual costs of production. When the claim was settled in 1978, General Dynamics had received cash, tax, and interest benefits worth almost $1 billion.¹

The 1978 settlement did not end disputes over this contract. Two years later, government inspectors discovered major construction flaws in the Los Angeles class SSN-688s built by Electric Boat. The Navy required Electric Boat to perform extensive reinspections of the submarines and to correct the flaws. Electric Boat submitted a $100 million insurance claim against the government to recover these costs and eventually parlayed this claim into additional contracts for nuclear submarines with profit potential of more than $100 million. In the end, General Dynamics was compensated for

¹ Electric Boat was not the only shipyard to file monumental contract claims during the mid-1970s. The Navy's two other principal shipbuilders, Newport News Shipbuilding and Dry Dock Company and Ingalls Shipbuilding, had also filed claims for approximately $1.7 billion. Together, these claims threatened to bankrupt the Navy's budget for ship procurement. Hidalgo, An After-look at History, Sea Power, Apr. 1982, at 42, 46.
cost overruns, forgiven for delays in delivery, and rewarded with follow-on contracts.

This Article uses the procurement of the SSN-668 submarines from General Dynamics to explore the role of contract in the weapons acquisition process and to evaluate United States naval ship procurement policy.² The SSN-668 is a particularly useful case through which to scrutinize the weapons acquisition process for three reasons. First, nuclear submarines are among the largest individual capital items in the defense budget.³ The duration and scope of the acquisition process make them especially suited to test the limits of contract. Second, General Dynamics is one of the nation's largest defense contractors, with a long history of government contracting. Third, the SSN-688 submarine procurement has suffered spectacular cost overruns and schedule delays. Although this Article focuses on problems in the initial procurement of the SSN-688 submarine beginning in the 1970s, the Navy's recent procurement of SSN-688s has also been plagued by cost overruns.⁴ Focusing on the breakdowns which led to these dismal results brings to light the limits and weaknesses of the procurement process.

This Article will examine how, in the SSN-688 fiasco, fixed-price contracts failed to order and regulate the relationship between defense contractors and the government. It will also focus on political and economic factors endemic to the defense procurement process, particularly to the United States shipbuilding industry, that contributed to this breakdown.

The first section of this Article discusses in general terms the role and limitations of contract in the weapons procurement process. Within this framework, the case study presents three critical episodes in the procurement of the SSN-688 submarine. Each episode illustrates a different aspect of the general theme that the procurement process fails to manage the tension between the need for stability and the need for change. The first episode is Electric Boat's filing of a contract claim for more than $500 million in 1976. The second episode involves the role of contract in the resolution of the claim—a 1978 settlement that covered a loss of nearly $850 million. The final episode is Electric Boat's use of an insurance claim to ob-

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². Although the scope of this study is the entire weapons acquisition process, the focus is the procurement phase, rather than research and development.

³. Only aircraft carriers have a higher unit cost than nuclear submarines.

⁴. N.Y. Times, Mar. 9, 1988, at A8. The Navy will have to pay an estimated $650 million to Electric Boat and Newport News for cost overruns on 23 submarines.
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tain follow-on contracts that would generate profits of more than $100 million.

I. The Contract in Major Weapons System Acquisition

This section compares the background norms and conditions of a major weapons system contract with the traditional legal model of a contract and the economic model of a competitive market. The most important comparative characteristics are the context of the transaction, the nature of the market, the extent of certainty in key terms, the nature of change, and the nature of dispute resolution.

A. The Context of the Transaction

In contrast to the classical contract model in which parties negotiate discrete transactions at arm's length, parties to defense procurement contracts negotiate individual contracts in the context of long-term symbiotic relationships. Both government and industry tend to characterize their relationships as requiring trust and confidence between the parties. Defense contractors and their government counterparts often spend large portions of their professional careers working jointly on major weapons programs; the personal connections between a government official and a contractor are often as strong as the institutional relationships. Because the relationships between the parties to the agreement generally continue across many transactions and are not confined to a particular contract, the contractual structure in weapons procurement must be able to support a continually evolving relationship between the contractor and the government.

B. The Nature of the Market

The classical economic model of a competitive market has at least three major characteristics. First, it has many buyers and sellers. Second, price competition largely determines the level of product

5. Major weapons systems include large aircraft, missiles, ships, and submarines, representing approximately 65% of Defense Department procurement and research and development expenditures. The largest defense firms are usually the prime contractors for such systems. The MAC Group, The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy, 1984-1987, at 6 (1988).


sales. While product differentiation may affect price, the variance between products is relatively low, as in, for example, such products as toothpaste. Third, competitive markets have relatively low barriers preventing new firms from entering the market.

The market for major weapons systems acquisition departs from the competitive market model in several significant ways. On the supply side, although many firms produce weapons systems, there is such high product differentiation that there are generally only a handful of suppliers for any given system. Furthermore, the barriers to entry are extremely high, the greatest barrier being the need for specialized equipment and for enormous engineering and scientific capability. Although government regulation and reporting requirements partially substitute for price competition, they impose additional barriers to entry. On the demand side, the government is the sole buyer. Factors such as the political climate, events abroad, and executive and legislative initiatives—not variance in price—determine the demand for major weapons systems, thus making demand highly inelastic.

C. The Uncertainty of Specifications, Performance, and Cost

In traditional contracts, the parties fix design specifications, performance requirements, and cost in the initial bargain. In a weapons acquisition contract, however, the parties determine specifications of the system during the course of the contract and change them numerous times during both development and production.11

8. The defense industry is divided into many sectors, each of which relies on different manufacturing processes and basic technologies. Some of the primary sectors of the defense industry include ships, aircraft, tracked vehicles, munitions, electronics, satellites, and missiles. See generally J. Gansler, The Defense Industry 162-203 (1980).


10. For example, when an auto manufacturer contracts to purchase steel ball bearings from a supplier, the contract includes precise specifications as to the dimensions, weight, volume, and quality of the item. The contract also contains a definite cost term, even if it provides that the price may be affected by such externalities as inflation or changes in the cost of transportation. Furthermore, the performance required by each party is clearly stated in the contract and is relatively easy to measure. The supplier is required to deliver a certain quantity of steel ball bearings to a specific location on a specific date(s). The performance of each party is independent: the supplier makes and delivers the ball bearings (depending on the terms of the contract); the auto manufacturer pays for the product.

11. "Both the normal economic models of a market transaction and the legal model of a contract tend to obscure the degree to which large numbers of contracts are (realistically though not legally) agreements to deliver an indefinite good or service for an indefinite price." Stinchcombe, supra note 6, at 146.
Performance in a procurement contract is difficult to measure because the activities of both parties to the contract are highly interdependent. For example, the government has an ongoing responsibility to furnish a considerable amount of equipment and data necessary to the performance of the contract. If the provision of this equipment and data is delayed or deficient, contract costs will increase. Separating the extent of the overrun that is attributable to the government's own failure from that attributable to the contractor can be difficult, if not impossible.

Even though many weapons system procurement contracts are based on a so-called "fixed price," the cost of procurement is difficult to project. New weapons systems generally attempt to push technological frontiers that have no market equivalent as a price reference. Moreover, inflation, changes in the labor rate, and market prices for the many materials used to build a complex system can only be estimated. In addition, given the structural incentives to secure funding from Congress, there is an overwhelming pressure to underestimate various costs, even if the resulting level of funding is inadequate. Finally, future changes in the program's requirements, such as quantity, schedule, and specifications, add to cost uncertainty.

D. The Administrative Nature of Change

Changes in specifications and performance are standard in a weapons acquisition contract. Changes may be necessary in order to eliminate a recently discovered safety hazard, to introduce new technological improvements, or to satisfy performance demands of particular military officers. Traditional contracts respond to the conflict between the need for stability and the necessity of change without shifting the risks of resulting losses away from the seller. Weapons acquisition contracts, however, create elaborate administrative mechanisms to allocate the costs of changes between the government and the seller.

13. For example, the Defense Department's forecast of the inflation rate for 1974 was 5.8%, while the Consumer Price Index was 12.2%. Inaccuracy of Department of Defense Weapons Acquisition Cost Estimates, H.R. Rep. No. 656, 96th Cong., 1st Sess. 17 (1979). This report also stated that the initial Planning Estimate of major systems was on average 100% below actual cost [sic], while the later, more refined Development Estimate was on average 50% below actual procurement costs. Id. at 3.
14. Macneil, supra note 6, at 861.
15. See infra notes 57-62 and accompanying text.
The two categories of changes made are "directed" and "constructive" changes. In a directed change, the government contracting officer orders a contract change directly. He may, for example, order a change to correct a deficiency, to meet a new requirement, or to cut costs. The government compensates contractors for directed changes through an "equitable adjustment" in the contract price or delivery schedule.

A constructive change results from some government action or inaction that indirectly affects the contractor's costs. For example, an order to change certain welds on a submarine may cause the contractor to incur additional costs besides those to correct the welds, such as delays in other construction work. Liability for constructive changes is far more controversial than for directed changes, since responsibility for the change, and, therefore, the assignment of added cost, is more difficult to determine. If the government agrees to accept responsibility for a constructive change, it compensates the contractor with an equitable adjustment as if the change were directed. If the government denies the contractor's submission of a constructive change, the contractor may reassert his claim through the administrative mechanism of a contract claim.

E. Dispute Resolution

While traditional contractual disputes are litigated, and often terminate the contractual relationship, disputes in the weapons acquisition process are resolved largely through negotiation.

In the first phase of a dispute in a weapons acquisition contract, one of the contracting parties petitions for an adjustment as a right given by the contract, and the government contracting officer de-

17. FAR, 48 C.F.R. § 42.204(b) (1985).
18. "In a very rough way, a 'constructive' change amounts to treating a transaction under a Government contract as if it were an order under the 'Changes' clause and thus making available the contractual remedy of 'equitable adjustment.'" J. Whelan, Federal Government Contracts 401-402 (1985).
19. FAR, 48 C.F.R. § 52.243-1(e). See also Ass't Secretary of the Navy, Manpower, Reserve Affairs, and Logistics, Dep't of the Navy, Naval Ship Procurement Process Study 231 (July 1978) [hereinafter Naval Ship Procurement Process Study].
20. In discrete transactions, "no significant relations exist to be preserved when conflicts arise . . . . The existence of the market that the discrete transactional system presupposes eliminates the necessity for economic relations between the firms to continue in spite of the disputes. That market, rather than continued relations between these particular parties, will supply their future needs." Macneil, supra note 6, at 861.
21. According to the Federal Acquisition Regulations (FAR), a "claim" by one of the contracting parties is the demand, "as a matter of right," for "the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to this contract." FAR, 48 C.F.R. § 52.233-1(c) (1987).
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termines the claim's validity. The decision can be appealed.\textsuperscript{22} Even if formal, established mechanisms do not bring about resolution of the dispute, contractual performance continues until the dispute is resolved through negotiation and settlement.\textsuperscript{23}

\section*{II. The $500 Million Breakdown}

This section examines the structural and procedural problems of the procurement process that led to Electric Boat's $500 million contract claim.\textsuperscript{24} The first part of this section describes the structure of the shipbuilding industry. The second part looks at salient examples of contracting practices that contributed to procurement problems. Overall, this section reveals how contracting policies and practices created incentives for the contractor and the government to act in ways contrary to the most efficient outcome for the program.

\subsection*{A. The Structure of the Shipbuilding Industry}

The shipbuilding industry, like the other major sectors of the defense industry—aircraft and missile production—does not possess the features of a competitive market. On the demand side, the Defense Department is the only buyer.\textsuperscript{25} Moreover, demand is not constant; it is sporadic and unpredictable, depending on yearly appropriations by Congress. On the supply side, stable growth is difficult for individual firms to achieve, given the uncertainty of product demand. Severe barriers to market entry limit the number of

\begin{itemize}
\item \textsuperscript{22} FAR, 48 C.F.R. § 52.233-1(f) (1987).
\item \textsuperscript{23} "The Contractor shall proceed diligently with the performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under the contract, and comply with any decision of the Contracting Officer." FAR, 48 C.F.R. § 52.233-1(h) (1987).
\item \textsuperscript{24} Shortly after General Dynamics and the Navy settled their claims dispute in June 1978, the Justice Department launched a two-year grand jury probe to investigate allegations that General Dynamics' employees had defrauded the Navy by intentionally submitting false, misleading, or padded contract claims. Federal prosecutors announced in January 1982, that they would not seek indictments against General Dynamics or any of its employees for the 1976 contract claims. J. Goodwin, Brotherhood of Arms: General Dynamics and the Business of Defending America 270 (1985). In early 1987, the latest investigations of General Dynamics on the SSN-688 program ended, again with no charges brought. Wall Street Journal, May 2, 1987, at 21. Some continue to believe, however, that General Dynamics officials, in particular Chairman David Lewis, defrauded the government by intentionally submitting unrealistically low bids for eleven of the eighteen submarines. Id. By focusing attention on the possible illegalities in the case, however, critics have ignored the larger structural problems with the contract process.
\item \textsuperscript{25} Although some items, for example the F-16 aircraft, are sold to other governments, it is the United States government that determines whether such sales will occur.
\end{itemize}
firms, and because only a few full-scale shipbuilding firms exist, only small, relatively simple programs are suitable for open competition.

In 1969, Electric Boat had no new ship construction contracts, but by 1974 the yard had won contracts to build 18 new attack submarines and the first Trident submarine, adding almost $2.4 billion to the shipyard's coffers. This deluge of business was not the result of Electric Boat's increased competitiveness or productivity; it was due to increased concentration in the American shipbuilding industry as a result of the government's decision to withdraw from active production. By the time Electric Boat filed its contract claim in 1977, only nine yards were engaged in Navy shipbuilding and only three of the nine were certified to build nuclear-powered ships: Electric Boat, Newport News, and Ingalls. The three shipyards accounted for more than three-quarters (77%) of the dollar value of new Navy ship orders between 1973 and 1977. This concentration in the attack submarine program meant less competition among suppliers and less pressure to keep prices down.

The nature of the shipbuilding industry's labor market also contributed to the large cost increases in Electric Boat's attack submarine program. The productivity of shipyard workers is lower than

26. Marketing is conducted primarily through direct selling, which requires specialized knowledge; highly specialized engineering and scientific capability is required; and capital requirements are high.

27. For example, about 92% of naval ship construction appropriations for fiscal year 1979 were placed with sources that were determined without competition. Naval Ship Procurement Process Study, supra note 19, at 79-80.


29. Through the 1950s the Navy had relied on both government-owned shipbuilding facilities and on privately-owned shipyards such as Electric Boat. When studies conducted during the 1960s showed that private yards could produce ships at lower cost because of their lower labor and material costs and higher worker productivity, President Johnson decided that private yards should produce all future naval ships. Goodwin, supra note 24, at 100-01.

30. At the time, Ingalls performed nuclear repair work only. Naval Ship Procurement Process Study, supra note 19, at 18. Both General Dynamic's Quincy shipyard and the Ingalls shipyard have built nuclear ships in the past and could be recertified to increase competition or to stabilize the workforce in these yards. Gansler, supra note 8, at 185-87.

31. Naval Ship Procurement Process Study, supra note 19, at 18. In contrast, the percentage of sales by the top four firms in the entire shipbuilding industry was 40%. Gansler, supra note 8, at 185.

32. Shipbuilding is more labor-intensive than other sectors of the defense industry; thus, labor problems have a proportionately greater impact on overall costs. Naval Ship Procurement Process Study, supra note 19, at 24. Complicating these problems is the nature of ship construction itself. Unlike other sectors of the defense industry, ship construction does not resemble a production line. Each ship or submarine is individually constructed. Building a submarine is more like constructing a large building than it is like working on the automated assembly lines of aircraft or automobile production.
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that of workers in comparable industries and has been steadily declining since the late 1950s. Nevertheless, Electric Boat's fixed-price contracts to construct 18 new attack submarines did not assume that labor productivity would continue to decline over the life of the program; indeed, the contracts assumed the opposite—that productivity levels would return to the higher rates of the 1960s.

A major problem in the shipbuilding workforce is the extremely high turnover rates at the yards, totaling approximately 75% of the workforce in 1977. At Electric Boat, the workforce more than doubled from the date the first attack submarine contract was awarded in January 1971 to the time the contract claim was filed in 1977. This influx of new workers amplified the inefficiencies in production. Furthermore, absenteeism among the workers was about 30%.

Recruiting the required labor force at Electric Boat was difficult because of a prevailing low wage rate. Through the mid-1960s, the shipbuilding industry's salaries were competitive with those of comparable industries. But when private yards became the sole producers of naval ships in 1967, their salaries did not keep pace with comparable competitive industries. By the mid-1970s, the shipbuilding industry paid considerably lower hourly rates than other competitive labor markets; for example, shipbuilding paid approximately 20% less than the heavy construction industry. Low salaries decreased the supply of available workers. As the yard

This labor intensity means that the value-added per worker in the shipbuilding industry is less than in comparable industries. Approximately 80% of the workers in a private shipyard are production workers, as compared with the aircraft industry where about 48% of the employees are production workers and many of the others are engineers. Gansler, supra note 8, at 192.

33. Id. at 192-93.

34. General Dynamics was able to reduce its bid for the second flight of eleven attack submarines in part by setting high productivity targets based on 1960s data, despite the continuing downward trend. P. Tyler, Running Critical: The Silent War, Rickover, and General Dynamics 128 (1986).

35. The turnover rate in private shipyards is about 13% per month, which is over four times that in the aircraft industry and more than six times that in the Navy's own shipyards. Naval Ship Procurement Process Study, supra note 19, at 27. The studies show that a new worker in a yard is only 50% efficient in his first two years of work. Gansler, supra note 8, at 191.

36. Electric Boat's labor force grew by 250% from approximately 12,000 workers in January 1971, when the first attack submarine contract was awarded, to almost 30,000 in mid-1976. Goodwin, supra note 24, at 124; see also Naval Ship Procurement Process Study, supra note 19, at 76.

37. Tyler, supra note 34, at 148.

increased its labor force to meet the contract demands, it had to choose between quantity—large numbers of less skilled workers—and quality—fewer, more highly skilled workers. It chose quantity.

Exhausting local labor pools, Electric Boat became so desperate for workers that at one time it chartered as many as 50 buses a day to transport workers to its Connecticut shipyard from as far away as Boston and New York. As the yard hired more workers, the skill standards dropped.39

In sum, the structural conditions of the shipbuilding labor force—declining productivity, high turnover, low wages, and a shortage of skilled workers—were a major source of the inefficiency that contributed to cost growth in the SSN-688 program. "The Defense Department, the Navy, and congressional investigators are in rare agreement about what went wrong at the Groton shipyard," Fortune magazine reported. "As the work force was doubled to a peak of 30,000 in mid-1977, the yard suffered the corporate equivalent of a nervous breakdown."40

B. Contracting Practices and Management

In the acquisition of major weapons systems, contracting practices and management methods are a partial substitute for price competition. In the absence of free market competition, these practices and methods bear a greater burden of ensuring that the Defense Department buys the best possible product at a reasonable price and that it acquires it in a timely fashion. Many of the contracting practices used in the SSN-688 attack submarine acquisition permitted conditions to develop which rendered keeping costs within the contract's ceiling extremely difficult and caused unnecessary inefficiencies and schedule delays. Contracting practices were critical at three different stages: (1) the initial submarine design process, (2) the selection of the type of contract for development and procurement, and (3) the process for managing production changes. Most of the prac-

worker in 1976 was about $247; the paycheck for a building construction worker was about $285 per week. Goodwin, supra note 24, at 124.

In addition, income in the shipbuilding industry does not rise much with the age of the worker, as it does in comparable industries such as construction. This adds to the turnover rate, as there is an incentive to leave shipbuilding for other more lucrative positions. Gansler, supra note 8, at 192.

39. The percentage of skilled workers at the shipyard plummeted from 80% in 1972 to 35% four years later. As the work force grew, each experienced employee had to train more workers. "What happened was we lost a good welder and got a bad supervisor," recalled one Electric Boat manager. Goodwin, supra note 24, at 126.

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tices discussed below are illustrative of government contract prac-
tices for major weapons system acquisition.

1. The submarine design process. Uncertainty in contractual
specifications is inherent in the process of designing a submarine.
The total design cycle for a submarine is eight years, including vari-
ous coordinated design phases. One source of design problems on
the SSN-688 program was poor integration of various phases of the
design cycle. Independent design companies conducted prelimi-
ary and contract design work with guidance from Navy personnel
at Naval Sea Systems Command (NAVSEA). They gave the de-
signs to a private shipyard for detailed design work and construc-
tion. This separation of preliminary from detailed design work
fostered manufacturing inefficiency in two ways. First, it en-
couraged designing for performance without sufficient considera-
tion of production methods and costs. Second, since every
shipyard uses different manufacturing equipment and different pro-
duction methods, designs that were not tailored to the capabilities
of the particular shipyard resulted in inefficient production methods
and increased the need for design changes during the production
process. An additional design problem that plagued the SSN-688
program was “concurrency”—beginning series production before
completing and testing the first unit. In essence, the 688 design
had not been “debugged” before Electric Boat began to construct
its first fleet of seven submarines. The many design changes that

41. The Navy had a policy of selecting only one shipyard to do the detailed design
work for a class of submarines. In this case, Admiral Hyman Rickover, the legendary
father of the nuclear navy and czar of navy nuclear contracts, awarded the design con-
tract for the SSN-688 to Newport News, although it had never designed a nuclear sub-
marine. Goodwin, supra note 24, at 108. Electric Boat was the only private shipyard that
previously had designed nuclear-powered submarines, designing every one since the
Nautilus, the world’s first nuclear-powered submarine.

One account suggests that Rickover worried that Electric Boat felt few competitive
pressures to hold down design costs when it possessed a monopoly on submarine de-
sign; thus, awarding the contract to another yard would introduce a new competitiveness
into the SSN-688 submarine program. Id. Another account suggests that Rickover, who
was known for his visceral dislike of all defense contractors, was angry at Electric Boat
for having taken a concept design contract on a rival submarine design that Rickover
opposed. In this political struggle, General Dynamics was allied with Secretary of De-
fense McNamara against Rickover and the Congress. When Rickover won the battle, he
punished General Dynamics by awarding the design contract, which traditionally in-
cludes the contract to build the lead ship as well, to Newport News. Tyler, supra note 34,
at 94-95.

42. Gansler, supra note 8, at 194.
43. Naval Ship Procurement Process Study (NSPPS), supra note 19, at 64. One of the
conclusions of the NSPPS was that NAVSEA should increase its efforts to involve
shipbuilders early in the contract design process so that the designs reflect the construc-
tion methodology of each shipbuilder. Id. at 261.
44. Hidalgo, supra note 1, at 46.
had to be made during the production process increased costs and caused delays.

2. Selecting a contract type: fixed-price vs. cost-plus. The two generic types of contracts used in weapons acquisition are fixed-price incentive contracts and cost reimbursement or cost-plus contracts. The Navy's choice of a fixed-price incentive contract to govern procurement of the SSN-688 submarines established the framework in which the contract claims arose. Under a cost-plus contract, the contractor is reimbursed for all allowable costs without limitation, so that the government absorbs all the risks of contract performance. In contrast, under a fixed-price incentive contract the contractor is reimbursed for allowable costs only to a limit called the "ceiling price," so that the contractor and the government agree to share the risks of contract performance.

Each type of contract presents certain dangers or disadvantages for the government. Under a fixed-price contract, the government fears that the contractor may try to "buy-in"—to submit an unrealistically low bid to win the contract with the hope of recouping costs through follow-on contracts with higher prices, through production change orders, or through contract claims that the government feels compelled to pay because liability cannot be conclusively determined.

The Packard Commission observed that: "Fixed-price contracts effectively can enshrine overstated requirements and un-

45. In a fixed-price incentive contract, several figures are negotiated at the outset. The "target cost" represents the estimate of costs the contractor will incur. The "target price" is the target cost plus negotiated profit. The "ceiling price" is the Navy's maximum liability under the contract. The ceiling price is expressed as a percentage of target cost—such as 120% or 130%. The percentage is known as the "ceiling price spread." The larger the spread, the greater the Navy's liability for costs and the less risk to the contractor.

The Defense Procurement Handbook of 1968 described the virtues of fixed price contracts:

At a specified price, the contractor assumes all financial risks of performance. His profit depends entirely on his ability to control his costs. The Government bears no risk of loss under the contract. A firm fixed-price contract does not impose the maximum incentive (i) to avoid waste and (ii) to use production and subcontracting methods that will save labor and materials.

The firm fixed-price contract has another great advantage for the Government: it is relatively easy and inexpensive to administer. It also benefits the contractor. The Government does not monitor his costs, so he does not have to conform his accounting methods to DOD audit procedures. His administrative costs are therefore lowered too.

Office of the Secretary of Defense, Defense Procurement Handbook, at v-7, as quoted in Fox, supra note 7, at 227.

46. The NSPPS concluded that the Navy needed to adopt new techniques to try to prevent contract awards at unrealistic prices, for example, by making one of the proposal evaluation factors the validity of the cost estimates. Naval Ship Procurement Process Study, supra note 19, at 141.
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derstated costs in a legal arrangement that allows little or no flexibility for needed trade-offs between cost and performance. This contractual arrangement, intended to protect the government, may cause both sides to lose.”

Under a cost-plus contract, on the other hand, the contractor has no incentive to improve productivity because such improvement would cut costs and reduce overall profit. Indeed, the contractor has an incentive to spend as much money as possible because most of it will be reimbursed by the government. Cost-reimbursement contracts place a heavy administrative burden on both the government and the contractor to establish a reliable accounting system.

In the 1970s the Navy strongly preferred fixed-price contracts; cost-plus contracts were used when the magnitude of the uncertainties in the work to be performed precluded the use of an acceptable fixed-price arrangement. A fixed-price contract is superior to a cost-plus contract when reasonably definite design or performance specifications are available and when the contracting parties agree at the outset on prices that are judged to be fair and reasonable. Despite the uncertainties in costs and design specifications in a submarine program for which the lead ship had not even been built, the Navy departed from past procurement practices and awarded Electric Boat a fixed-price contract. Both institutional and political factors contributed to this decision.

Institutionally, the Navy was reacting to a failed procurement practice prominent in the 1960s, called Total Package Procurement. This concept, generally based on a fixed-price incentive contract, attempted to prevent shipbuilder “buy-ins” by asking contractors to bid one overall price for the total procurement package—design, development, production, and logistical support of a new weapons system—rather than to submit separate bids for each successive phase of the program. The purpose of the total package contract was to extract the lowest possible price from contractors for the complete weapons project and to shift the risk and program management responsibility to contractors. However, tremendous cost

47. President’s Blue Ribbon Comm’n on Defense Management (The Packard Commission), A Formula for Action: A Report to the President on Defense Acquisition 46 (June 1986).
49. The current FAR regulation states that the contract type should be determined by “the degree of risk in contract performance. When the risk is minimal or can be predicted with an acceptable degree of certainty, a firm fixed-price contract is preferred. However, as the uncertainties become more significant, other fixed-price or cost-plus contracts should be employed to accommodate these uncertainties and to avoid placing too great a cost risk on the contractor.” FAR, 48 C.F.R. § 216.101 (1987).
50. Fox, supra note 7, at 244.
overruns developed on programs procured under this procedure. In one example, the total package concept was blamed for a 1977 claim by Ingalls shipyard for $1 billion involving construction of nine amphibious assault ships and thirty Spruance class destroyers. This problem led the Navy to return to its traditional practice of awarding separate contracts for the design and construction of new ships.

Politically, the Navy, and Admiral Rickover in particular, realized that fixed-price contracts were more likely to be approved by Congress. At the time Congress began to consider the SSN-668 program, fixed-price contracts looked like a better deal because they fostered the illusion that all program costs could be adequately predicted. Once a program has gained a foothold in congressional appropriations, Congress finds it difficult to ignore these sunk costs.

Rickover succeeded in securing funding from Congress by encouraging both inadequate cost estimates and narrow spread margins. Claiming that the new SSN-688 submarine was really only an advanced version of the earlier SSN-637 Sturgeon class submarine, Rickover argued that the contractors should base their cost estimates on the costs of building the SSN-637. Although many Navy procurement officials felt that the SSN-688 was really a new design, Rickover encouraged General Dynamics to rely on the SSN-637 cost figures, which proved to be wholly inadequate and contributed greatly to the cost overruns. Moreover, the ceiling price spreads were clearly unrealistic. The ceiling price spread on Electric Boat's first SSN-688 contract to build seven submarines was 116%; the spread on a later SSN-688 contract was negotiated at 135%. Yet, logic suggests that the ceiling price spreads should decrease in successive contracts. A realistic cost-to-ceiling spread in a fixed-price incentive contract is based on initial uncertainties in the program, such as the complexity of the ship, the shipbuilder's experience with similar vessels, and the availability of detailed drawings for ship construction. The uncertainties are greatest at

51. See Hidalgo, supra note 1, at 45. Litton, owner of the Ingalls shipyard at Pascagoula, Mississippi, filed contract claims on its two procurement programs about the same time as General Dynamics filed its claims on the SSN-688 program. Id.
52. Tyler, supra note 34, at 134. Rickover had urged General Dynamics chairman David Lewis to submit a fixed-price bid for the first Trident submarine in 1973, despite the cost uncertainties, reassuring Lewis that the company could "restructure" the contract to cover all costs of construction.
54. Tyler, supra note 34, at 131.
56. Id.
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the outset of the program, and should decrease as the contractor and the Navy gain experience. The SSN-688 contract, however, did not provide the necessary flexibility to accommodate the uncertainties in the new program, and the wider spreads on the later contracts reflected the large cost overruns and resulting claims on the early contract.

3. Managing contract changes. The principal basis for Electric Boat's $544 million claim was the staggering number of design changes during the first five years of the contract. These changes increased the cost of each submarine by $23 million. Both the military service and the contractor have abused change orders in the past. The military may use changes to "goldplate" a system by adding capabilities that are unnecessary given the threat the system is designed to meet and the cost constraints under which it is being built. The contractor may abuse constructive changes by submitting spurious requests for reimbursement of costs that it brought on itself.

Some design changes, on the other hand, are inevitable. Institutional pressures to approve design changes are always present because Soviet capabilities continually improve over the life of a procurement project and because each service wants its new system to have the maximum performance capability. Furthermore, the ships are built on a long construction cycle and, inevitably, those involved in the planning, design, and drawing processes will disagree on exactly how a complex naval vessel should perform. The extent to which such contract changes should be permitted is a major issue in managing the cost growth of a major weapons system acquisition.

The conflicting demands for flexibility and stability take their toll on the procurement process. According to one report, the typical effect of contract changes has been to increase contract costs by approximately 40%. Once a change has been made, the contractor gains a dominant bargaining position, because the parties typically negotiate payment for contract changes about four to seven months after the contractor has submitted a change proposal—by which time the work required by the change has already begun and may even be complete. The parties often negotiate the payment for con-

57. Id. at 3.
58. See Fox, supra note 7, at 379-82.
60. Id. at 248.
tract changes on the basis of actual costs incurred by the contractor, as opposed to reasonable costs estimated by the government. Government contract officers have difficulty proving that costs already incurred for changes should have been lower, and the contractor has little incentive to control the costs of changes for which work is partially or fully completed prior to negotiations.

General Dynamics claimed that 35,000 revisions made to approximately 5,000 detailed drawings provided to Electric Boat by the submarine’s designers, Newport News, were the cause of enormous cost increases and schedule delays. The Navy did not agree, noting that Electric Boat had itself issued an average of five revisions to every drawing used in the construction of the earlier SSN-637 class submarine. Although the revisions were not wildly out of proportion to the expected number of changes on a given contract, they may nevertheless have contributed to cost growth. In the aftermath of the claims controversy, the Navy sought to alter its policy on changes to shift more of the risk to the contractor. The enormous number of contract changes reflects the tension between the needs of stability and flexibility in the procurement process.

III. The $850 Million Fix

In June 1978, the Navy and General Dynamics signed an $843 million agreement in order to settle the $544 million contract claim originally filed in 1976. The final cost figure had increased by nearly $300 million to account for the additional cost growth and inflation that occurred after the claim was filed. In two years, the cost of procuring 18 attack submarines had increased by more than 50%.

Because both parties agreed that liability for the increased costs could not be conclusively determined, each side consented to accept

62. Fox, supra note 7, at 377. The U.S. Court of Claims has held that there is no better proof of the cost of a change than the actual cost. Bruce Constr. Co. v. United States, 324 F.2d 516 (1963).
63. “Maybe there were only five thousand changes that really ripped something out and replaced it with something else,” conceded General Dynamics Chairman Lewis. “But the cumulative effect of all that in purchasing, procurement, manufacturing, planning and so on was enormous.” Goodwin, supra note 24, at 120.
64. The Naval Ship Procurement Process Study recommended adding a provision to deny “shipbuilders any recovery for costs incurred where failure of notice after the shipbuilder knew or should have known of the problem deprived the Navy of the opportunity to solve the problem and to save the costs.” Naval Ship Procurement Process Study, supra note 19, at 262-63.
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part of the blame and shoulder part of the burden. While a Navy Claims Settlement Board had determined that Electric Boat was "entitled" to only $125 million of its original $544 million claim, in the final settlement Electric Boat received $484 million—$359 million in addition to the $125 million "entitlement."\textsuperscript{66} The settlement provided that General Dynamics would accept as a loss the other half of the $718 million difference between its "entitlement" and final $843 million claim.\textsuperscript{67}

The settlement between the Navy and General Dynamics did not reflect the merits of the claim as much as it did the limits of the contractual structure in setting the terms of the procurement relationship. When the government signs a contract to procure a major weapons system, it agrees to pay for the procedures and processes under which the activity will be conducted, as much as it agrees to purchase the actual weapons system. The claims controversy in this case reflected a breakdown in the government-contractor relationship, not in the final manufactured product.

A. The Stop-Work Strategy

Several days before the June 1978 settlement, Electric Boat issued dismissal notices to 8,000 of its 14,000 workers at the Groton shipyard. Electric Boat threatened to stop work on the SSN-688 program until a settlement was reached to shift the burden of paying for the continued cost of construction to the government. Electric Boat hoped that the stop-work threat would force the Navy to go to federal court seeking a temporary injunction compelling the shipyard to continue working.\textsuperscript{68} Electric Boat believed that even if the court determined that the shipyard must continue working "in the interest of national defense,"\textsuperscript{69} the Navy would most likely be ordered to pay the actual costs incurred during continued construction.

\textsuperscript{66} For an explanation of entitlement calculations, see infra note 86.

\textsuperscript{67} GAO Report on Status of Claim Settlement, supra note 65, at 1. Electric Boat's final estimated loss at completion was approximately $125 million more than the $359 million the contractor agreed to absorb as part of the 1978 settlement. In the settlement, the Navy agreed to share equally with Electric Boat such additional cost overruns up to $100 million. \textit{Id}.

\textsuperscript{68} Hidalgo, supra note 1, at 45.

\textsuperscript{69} Goodwin, supra note 24, at 137.
The award of progress payments would shift the financial burden of delay to the government and provide an immediate injection of cash into the shipyard.\textsuperscript{72} Recovering money already spent by the contractors would be difficult in later negotiations. Electric Boat would have no incentive to control costs on contract work conducted during the negotiation period, since such work would be performed on a "cost-plus" basis.

Outside of the courts, the government had little recourse against a stop-work order. Even though the Secretary of the Navy threatened to pull the unfinished submarines out of Electric Boat and place them into other yards, the only other shipyard qualified to build the submarines, Newport News, was also locked in a contract dispute with the Navy.\textsuperscript{73} The Carter Administration did not want to substantially delay the delivery of submarines considered essential to countering Soviet naval capabilities. In addition, the shipyard was building the first Trident submarine as well as the SSN-688 attack submarine. The Trident, a ballistic missile carrying submarine, was a key component of the Carter Administration's strategic arms policy. A shutdown on the SSN-688 program would essentially halt Trident construction as well, because union rules allowed senior workers on the SSN-688 program to "bump" less senior workers on the Trident program, creating labor chaos at the shipyard that

\textsuperscript{70} Progress payments are regular payments made by a military service to its contractors to reimburse them for their allowable costs of doing business. The theory behind progress payments is that the contractor should not have to finance a large portion of the allowable costs of performing under a contract that may extend five or more years. Contractors generally prefer to have up to 95\% or 98\% of their costs covered by progress payments, in order to minimize their own financing costs. To retain some financial leverage over the company until the work is satisfactorily completed, however, the military traditionally prefers to withhold part of the contractor's progress payments.

\textsuperscript{71} Such a strategy had worked effectively for Litton several years earlier. In June 1976, acting on advice from the same lawyer retained by Electric Boat, Litton had threatened to stop work on five amphibious assault vehicles at its Ingalls shipyard. A federal district court in Mississippi had issued a temporary injunction requiring the shipyard to keep working but making the Navy bear the financial burden. See Hidalgo, \textit{ supra} note 1, at 45. The Navy was ordered to provide Litton with progress payments that would cover 91\% of the shipyard's costs for work it had already performed and for work it would perform while its claim was being negotiated. \textit{Id.} at 46.

\textsuperscript{72} In October 1986, Congress passed legislation lowering the progress payment rates by five percentage points to 75\% for large businesses and 85\% for small businesses. Exceptions to this restriction can still be made for shipbuilding, military construction, and other contractors who have demonstrated financial need. \textit{Continuing Appropriations, Fiscal Year 1987, Pub. L. No. 99-591, § 9105, 1986 U.S. Code Cong. & Admin. News (100 Stat.) 3341, 3341-18}.

\textsuperscript{73} \textit{See supra} note 1.
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would take months to resolve. Thus, Electric Boat was effectively threatening to delay the Trident program until a settlement was reached on the SSN-688s.74

B. Options for Resolution

The Navy and the Office of the Secretary of Defense (OSD) presented three options to President Carter for resolving the crisis. One option was to follow the traditional legal route of litigation, which some thought would restore public faith in the contracting process.75 But the Navy had already spent time and $50 million assessing and challenging the claims.76 Had the President chosen to litigate, the end result might have been a court order requiring the Navy to pay Electric Boat actual costs while it continued working on the submarines.77 Protracted litigation could have delayed the Navy's receipt of the submarines into operational inventory for several years, imposing greater costs than any settlement. The view from the Defense Department was that "protracted and wasteful litigation would seriously endanger essential programs, uncertainties and cash flow demands would jeopardize the financial position of the contractors, and ship construction would be severely destabilized."78

The government's second option was to take over the shipyards and to operate them as government facilities under contract to one of the shipbuilding companies. Admiral Rickover supported this option; he wanted to enforce the contracts to the letter.79 The legal validity of any government takeover was highly doubtful because the Supreme Court had found such seizures of private enterprises without congressional authorization unconstitutional in Youngstown Sheet and Tube Co. v. Sawyer.80 In addition, no other contractor could take over the entire SSN-688 submarine program: Newport News al-

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74. Tyler's account called this move "a form of blackmail against the new administration, revealing a deep cynicism in the relationship between the businessmen who were running a key defense industry and the Pentagon." Tyler, supra note 34, at 192.
75. Id. at 151.
76. Id. at 226. Secretary of the Navy William Claytor stated: "I am an old trial lawyer, and litigation does not frighten me, but I know what its disadvantages are, and it sure includes taking the time of the productive people in testimony, in hours and hours and days and days of depositions, in answering extensive and difficult interrogatories, and in doing almost everything except getting on with the job of building ships." Goodwin, supra note 24, at 141.
77. The Navy had, in fact, prepared pleadings to be filed if this option were chosen.
79. Tyler, supra note 34, at 226.
80. 343 U.S. 579 (1952).
ready had its share of submarine contracts, and it, too, was at war with the Navy.\textsuperscript{81} Navy officials did not seriously consider this option.

The third option for the government, a negotiated settlement between the Navy and Electric Boat outside the terms of the contract, had the support of Navy claims negotiator Edward Hidalgo, Secretary of the Navy Claytor, Secretary of Defense Harold Brown, and Brown’s deputy, Charles Duncan.\textsuperscript{82} However, this strategy was not widely accepted within the uniformed Navy, and it became the source of a bitter dispute between political appointees, like Claytor and Hidalgo, and the “permanent Navy.”\textsuperscript{83} The Carter appointees attributed a large part of the claims problem to the fact that Rickover had simply asked Electric Boat to build too many submarines in too little time after awarding the design and prototype contract to Newport News. Senior political officials saw the contract claims as a thorn in the side of the President’s ambitious program to revitalize the nation’s defenses and to achieve an arms-control agreement with the Soviets. Halting construction on the Los Angeles and Trident submarines would mean a loss of negotiating power with the Soviets. Further, the claims controversy diverted public attention from other national security issues and reflected poorly on the new administration.

Officers in the Naval Sea Systems Command (NAVSEA) had a different view of how the claims should be handled. According to one account, NAVSEA saw the claims as part of an “ongoing procurement battle rather than as a political embarrassment to be dealt with expeditiously.”\textsuperscript{84} They bitterly resented the willingness of their political superiors to reach an agreement with the contractors, especially an agreement that they felt was unjustified. NAVSEA agreed with the conclusions of the Navy Claims Settlement Board\textsuperscript{85} that Electric Boat was entitled\textsuperscript{86} to only $125 million of its $544 million claim, or

\textsuperscript{81} Hidalgo, supra note 1, at 52.
\textsuperscript{82} Tyler, supra note 54, at 226.
\textsuperscript{83} See Hidalgo, supra note 1, at 46.
\textsuperscript{84} Goodwin, supra note 24, at 135.
\textsuperscript{85} Established in 1976, the Navy Claims Settlement Board was staffed by 10 to 40 lawyers and engineers. Economics of Defense Procurement: Shipbuilding Claims: Hearings before the Subcomm. on Priorities and Economy in Gov’t of the Joint Economic Comm., 94th Cong., 2d Sess. 138-39 (Dec. 29, 1977) (testimony of Admiral Manganaro).
\textsuperscript{86} In determining a contractor’s entitlement, the Board evaluated “omnibus” or general claims submitted by the contractor, breaking them down into specific claims and determining the probable validity of each. The Navy would pay the actual dollar value of each specific instance of injury to the contractor that was caused by the Navy, plus additional costs associated with the claim. The Board’s determination included amounts for “litigative risk”—the amount the Navy thought it was at risk of losing if the claims

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23 cents on the dollar. If the Board’s figure had been the final award, General Dynamics probably would have followed through with its threat to stop work, alleging breach of contract by the Navy. Therefore, the political authorities turned to extra-contractual remedies.

C. The Settlement

Public Law 85-804 gave the Navy authority to settle Electric Boat’s claim. Public Law 85-804 allows the Executive to grant extra-contractual relief whenever “such action would facilitate the national defense.” The government made its settlement with Electric Boat under the residual powers of the statute.

Since Public Law 85-804 was essential to the outcome of the claims settlement, this statute’s history and use in the settlement claims deserves exploration. The substantive provision of the statute states:

The President may authorize any department or agency of the Government which exercises functions in connection with the national defense, acting in accordance with regulations prescribed by the President for the protection of the Government, to enter into contracts or into amendments or modifications of contracts heretofore or hereafter made and to make advance payments thereon, without regard to other provisions of law relating to the making, performance, amendment, or modification of contracts, whenever he deems that such action would facilitate the national defense.

were litigated—and “cost of litigation”—the Navy’s estimate of the cost of attorneys’ fees, court costs, and other costs to litigate fully the claims. The Board placed the litigative risk at $20.2 million and the cost of litigation at $8.8 million. In other words, the Board found an actual entitlement of $96 million; an additional $29 million was added as risk insurance. Better Government Association, The Use of P.L. 85-804 (Extraordinary Contractual Relief): Essential Aid or Bailout? 66 (1983).

Relief can also be granted “when an actual or threatened loss on a defense contract, however caused, will impair the productive ability of a contractor whose continued performance on any defense contract or whose continued operation as a source of supply is found to be essential to the national defense.” FAR, 48 C.F.R. § 50.302-1 (1987). However, few contractors qualify for relief under this standard. As one commentator noted:

The doctrine of essentiality is catch-22. If you’re big enough to be essential to the defense effort, you’re too big to need extraordinary relief. If you’re small enough to need extraordinary relief, you’re not big enough to be essential.

Better Government Association, supra note 86, at 17.

Title II of the first War Powers Act, Pub. L. No. 354, 55 Stat. 839 (1941), was the predecessor to Public Law 85-804, and its authority was used to facilitate the prosecution of World War II. Congress reactivated Title II on January 12, 1951, (Pub. L. No. 921, 64 Stat. 1257) after President Truman declared a national emergency during the Korean War. Congress extended Title II successively until 1957, when
The legislative history does not provide specific guidance on what constitutes "facilitating the national defense." The report of the Senate Judiciary Committee simply observes:

The authority contained in this bill is not, therefore, authority by which the departments and agencies of Government may dispense aid solely for the benefit of contractors or subcontractors. While contractors or subcontractors may be recipients of aid in some instances, the primary consideration is, and must be, whether such aid will facilitate the national defense.91

This statute, as implemented by Executive Order 10,789,92 authorizes the Department of Defense and other civilian agencies93 to grant relief to contractors "even though there is no legal obligation to do so, and even if there is a legal prohibition against it."94 The implementing regulations provide detailed guidance on relief granted as a contractual adjustment,95 but, in contrast, require only that the action facilitate the national defense for relief granted under the residual powers of Public Law 85-804.96 As long as the relief is not "used in a manner that encourages carelessness and laxity on the part of persons engaged in the defense effort" and is not "relied upon when other adequate legal authority exists within the agency,"97 it may be granted "when necessary and appropriate, all circumstances considered."98 These limitations seem not to constrain the practical application of Public Law 85-804. Furthermore,

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93. The civilian agencies are the Department of the Treasury, Department of the Interior, Department of Agriculture, Department of Commerce, Department of Transportation, Department of Energy, General Services Administration, National Aeronautics and Space Administration, Tennessee Valley Authority, the Federal Emergency Management Agency, and the Government Printing Office.
94. Richardson, supra note 78, at 129.
95. FAR, 48 C.F.R. § 50.3 (1987). References are to the current Federal Acquisition Regulations (FAR), which have superseded the Defense Acquisition Regulations (DAR) and the Armed Services Procurement Regulations (ASPR). The regulations implementing Public Law 85-804 are substantially the same under all sets of regulations.
97. FAR, 48 C.F.R. § 50.102 (1987). This is intended to require the contractor to exhaust all administrative remedies before relief under Public Law 85-804 can be made available. Richardson, supra note 78, at 132 n.10.
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executive branch decisions under Public Law 85-804 cannot be appealed.99

Although relief under Public Law 85-804 has been granted sparingly for the most part,100 large awards were made in 1978, when the Navy provided almost $1 billion in relief to three shipyards, including Electric Boat.101 The use of Public Law 85-804 to settle the Navy shipbuilding claims has been criticized for (1) unnecessarily increasing the bargaining power of contractors, (2) not subjecting government contractors to the same ordinary rules of business as the private sector, and (3) encouraging underbidding on contracts.102 Public Law 85-804 was used specifically to avoid litigation in the 1978 cases.103 One commentator in the Defense Department observed: "[A]lthough these decisions could have been settled under contractually-provided disputes mechanisms, the Secretary of the Navy determined that the disputes process, although available, was inadequate for the settlement of these large and complex claims."104

Congress, for the most part, accepted the use of Public Law 85-804 as an instrument of compromise. It supported a settlement in which both sides accepted some blame: the Navy would partially bail out General Dynamics only if the company accepted an equal...


100. From 1959 through 1977, only $133.1 million in awards were made under the act, an average of $7 million a year, with the important exception of two awards totalling $623 million to Lockheed in 1971 as part of the effort to prevent that contractor from going bankrupt. Lockheed's awards included $500 million from the Air Force for losses on the C-5A program, and $123 million from the Army for losses on the Cheyenne helicopter program. Better Government Association, supra note 86, app. IV. Many of the awards could not have been made if the standard of facilitating the national defense had been strictly interpreted. For example, Public Law 85-804 has apparently been used to provide relief to an advertising agency under contract to the Navy and to a soft drink supplier for the Air Force that was struck by an unexpected rise in worldwide sugar prices. See, e.g., Lane Sales Co., ACAB No. 1169 (Nov. 4, 1974); ACAB No. 1169A (Feb. 27, 1975), cited in Better Government Association, supra note 86, at 33-36.


102. See, e.g., Better Government Association, supra note 86, at 2, 27. While the first two arguments have merit, the third argument, that the availability of relief under 85-804 increases underbidding by contractors, may not be supported by subsequent evidence, because there have been no major awards under Public Law 85-804 since the settlement of the shipbuilding claims.

103. Richardson, supra note 78, at 145; Better Government Association, supra note 86, at 26.

104. Richardson, supra note 78, at 145. The author was attorney/advisor, Office of Assistant General Counsel (Logistics), Office of Secretary of Defense.
amount as a fixed loss.\textsuperscript{105} The Connecticut and Rhode Island congressional delegations worked hard to put together a settlement that would save the jobs of their constituents.\textsuperscript{106} Only Senator William Proxmire opposed the agreement, calling it “a form of backdoor welfare” that rewarded the shipbuilders for their waste and mismanagement and would establish a harmful precedent.\textsuperscript{107}

The settlement illustrates the failure of contract to regulate the terms of the procurement relationship when the oligopolistic structure of the industry allocates disproportionate bargaining power to the supplier and concerns of national security limit the freedom of the buyer. In this example, the government considered the Los Angeles class submarines an essential counter to the Soviet naval buildup, and no other contractor was able to complete their construction. The only other shipyard capable of building the ships was already overburdened with its own submarine contracts. The combination of these extra-contractual forces put the Navy in a weak bargaining position. Rather than setting the terms of the relationship, the contract weakly constrained a relationship whose terms were really defined by more potent structural and political forces.

\section*{IV. The $100 Million Insurance Claim Dispute}

As part of the 1978 claims settlement, General Dynamics agreed not to submit any additional contract claims to the Navy on work that had already been completed on either the SSN-688 or Trident class submarines.\textsuperscript{108} As a result, General Dynamics would have to pay for the repair of any workmanship defects that the Navy might later discover. One of the articulated purposes of this agreement was to prevent the abuse of the “constructive changes” doctrine.\textsuperscript{109}

\begin{footnotesize}
\textsuperscript{105} U.S. Representative George Mahon, chairman of the Defense Appropriations Subcommittee told the Chairman of General Dynamics:

There are too many people who believe that you are partly responsible for this, and nobody knows whether it’s eighty percent or twenty percent or what, but this is an election year and the Congress will not vote to bail you out for this large amount of money. I have to tell you, you can count on our support provided you take a very painful part of this.

\textsuperscript{106} Goodwin, supra note 24, at 154.

\textsuperscript{107} "The message the Navy is sending out is this," said Proxmire. "If you are a large contractor and you dominate an important portion of the defense market, file an inflated claim and the Navy will pay the true value plus as much as 50\% of the remaining portion." \textit{Id.}

\textsuperscript{108} Better Government Association, supra note 86, at 65.

\textsuperscript{109} For a discussion of this doctrine, see \textit{supra} notes 16-19 and accompanying text.
\end{footnotesize}
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As a consequence of the agreement, the traditional legal remedy used by contractors—relief under the constructive changes doctrine—was not available when workmanship defects were discovered on the SSN-688 and Trident submarines late in 1979. However, because of the large amount of money and new submarine contracts at stake, General Dynamics refused to abide by the terms of the agreement and sought to shift the responsibility to the government.

Two major quality problems were discovered in submarines produced at Electric Boat. First, nonconforming steel had been used in the construction of the submarines. Steel suppliers had been delivering unmarked substandard material for about nine years, and shipyard employees, as well as Navy inspectors, had overlooked or failed to act on shipping labels that described the metal's incorrect chemical content. Second, in early 1980, Navy and Electric Boat inspectors found thousands of welds either defective or missing altogether. The shipyard's inspection force, whose system had failed to report defective workmanship for many years, had improperly certified the welds. Regardless of the extent of the defects, repairing them would be costly and time consuming, thus effectively halting production at the shipyard and further delaying the shipyard's delivery schedule.

Resolving the quality control problems exacerbated the already poor working relationship between Electric Boat and the Navy. The Navy did not speak with one voice to its contractors. Inspectors swarmed the Groton yard to check and certify that the quality control problems were being corrected. Meanwhile, Admiral Rickover, whose legal authority covered only the nuclear propulsion system aboard the submarine, tried to persuade Navy and Defense Department officials that Electric Boat's faulty workmanship should dis-

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110. The shipyard eventually determined that about 12% of the 6,126 tons of carbon steel that it had received between 1970 and 1979 was substandard. However, substandard steel was a fairly common problem in the shipbuilding industry. A NAVSEA quality insurance official had acknowledged in 1980 that 30% of the carbon steel bar stock in the Navy's own shipyards and supply system was also nonconforming. Goodwin, supra note 24, at 287.

111. One account notes:

In a nuclear submarine, a suspicion of defect was as good as a defect because everything had to be perfect. That's what the Navy had learned from the loss of U.S.S. Thresher and her crew of one hundred twenty-seven men. You couldn't be 99 percent sure that all the welds were there.

Tyler, supra note 34, at 259-60. On April 10, 1963, the U.S.S. Thresher and her crew were destroyed by a leak that triggered the emergency shutdown of the nuclear reactor and pulled the submarine below its crush depth only 100 miles off Cape Cod. Id. at 53-54.
qualify it from being awarded upcoming submarine contracts.\textsuperscript{112} Electric Boat's rebuttal, provided by Takis Veliotis, the general manager at the Groton shipyard, was adamant in denying the charges.\textsuperscript{113}

To cover the high cost of the reinspection program, Electric Boat announced that it intended to file up to $100 million in insurance claims under the legal theory that builders' risk insurance protected the shipyard from the poor performance of its own workers. Thus, Electric Boat was asking the Navy to reimburse it for its own mismanagement. Since World War II, the Navy had prohibited private shipyards from purchasing marine builders' risk insurance from commercial underwriters and added the cost of the premiums, generally 2\%, to the price of the contract.\textsuperscript{114} The Navy had saved hundreds of millions of dollars by insuring shipyards against "all risks" of accidents, fires, floods, and other calamities.\textsuperscript{115} General Dynamics argued that a commercial insurance policy would cover all unforeseen production costs, even those attributable to the shipyard's workers.\textsuperscript{116}

General Dynamics Chairman David Lewis viewed the insurance claims as an asset that the company could use to increase its bargaining power with the Navy. He admitted that "[the insurance claims] just didn't seem right to me, but what's right in your mind, as an exercise in logic, is not necessarily right under the law."\textsuperscript{117} A recent $300 million recovery by a New Orleans shipyard against its commercial underwriters for insulation that cracked during its con-

\textsuperscript{112} Goodwin, supra note 24, at 289.
\textsuperscript{113} Tyler, supra note 34, at 287-88.
\textsuperscript{115} See Goodwin, supra note 24, at 294; Tyler, supra note 34, at 269.
\textsuperscript{116} Veliotis explained this legal theory to Congress:
If you have collision insurance on your new car and you get involved in an accident, the insurance company will pay, regardless of whether or not the accident was your fault. Similarly, if you fall asleep while smoking in bed and as a result your house catches fire and burns down, your home owners insurance will pay, even though in this example it is obvious that you were at fault. . . . When the government chooses to go into the marine insurance business in order to save premium costs, that would not change the result either—nor should it. The fact that the government became underwriter should not deprive the insured of the coverage he would have had if the underwriter had been a commercial insurance company. Hearings on Federal Securities Laws, supra note 114, at 360.
\textsuperscript{117} Goodwin, supra note 24, at 295.
struction of liquified natural gas tankers encouraged General Dynamics to pursue its claim.\textsuperscript{118}

Even more valuable to the company than insurance claims were follow-on contracts, which could generate profits of more than $100 million, to build additional SSN-688 and Trident submarines. On March 17, 1981, the new Secretary of the Navy, John Lehman, had canceled the bid requests that had been sent to both Electric Boat and Newport News for the three SSN-688 submarines provided for in the 1980-81 budget. Lehman had decided to negotiate solely with Newport News.\textsuperscript{119} In a letter to Lewis, Secretary Lehman justified the action, stating that "the award of these submarines to Newport News is necessary in the interests of national defense so as to have Newport News available as a supplier of SSN-688 submarines at levels necessary in the case of national emergency."\textsuperscript{120} According to one account, Lehman personally told Lewis that General Dynamics would get no more submarine contracts from the Navy if it filed insurance claims for poor workmanship.\textsuperscript{121}

The feud escalated as, two weeks after Lehman's announcement that Newport News would receive the contracts for the next three SSN-688 submarines, Electric Boat manager Veliotis threatened to decrease production from the required three ships per year to two unless the Navy gave the yard more business.\textsuperscript{122} Then in June, General Dynamics filed the first of its insurance claims against the Navy, demanding $19.8 million for the cost of repairing the defective welds and steel on the U.S.S. Bremerton. It announced that future claims would be filed as additional ships were delivered. Secretary Lehman objected strongly to the filings.\textsuperscript{123} He declared that the Navy would consider General Dynamics' claims as it planned its future submarine program, and would consider filing counterclaims against the company, not only for direct damages caused by the shipyard's construction delays, but also for any consequential damages incurred.

\begin{footnotes}
\item[118] Hearings on Federal Securities Laws, supra note 114, at 20-21.
\item[119] Former Navy Secretary Hidalgo, now advising General Dynamics, argued that Lehman had lost all bargaining leverage over Newport News in awarding the subcontracts on a sole source basis, and the Navy would end up paying more for its ships. Tyler, supra note 34, at 301.
\item[120] Id. at 285.
\item[121] Id.
\item[122] Id. at 290.
\item[123] Lehman told the National Press Club, "The Department of Defense will not tolerate such corporate attitudes. They are unacceptable. We will not subscribe to the notion that the government always pays...." Goodwin, supra note 24, at 296.
\end{footnotes}
By August, however, Lehman had decided that he needed to resolve the dispute with General Dynamics. Perhaps he realized that his goal of a 600-ship navy was virtually unattainable if the Navy continued to battle with its principal contractor. In October, Lehman and Lewis reached an agreement from which both sides could claim victory. General Dynamics would be awarded three SSN-688 submarine contracts—one firm contract and two options—generating more than $100 million in additional profits and offsetting the bulk of the company's loss from the quality control problems. In exchange, the Navy's contracting officer would rule that the insurance claims were not recoverable, and General Dynamics would agree to withdraw the reimbursement request.124

For General Dynamics the price was right. The SSN-688 contracts were awarded on the same terms that Newport News had received.125 However, the contracts also provided for equal sharing of cost risk, instead of the traditional 70-30 split under which the government picked up 70% of cost growth between the target and ceiling prices. The contractors may have thought that this new arrangement, with a higher base price, would allow them to "under-run" the contract and split the underrun with the Navy on a 50-50 basis. But as of 1987, the General Accounting Office (GAO) was projecting cost overruns of nearly $800 million for General Dynamic's remaining SSN-688 contracts.126 According to the GAO, overruns have nearly doubled on each SSN-688 contract awarded since fiscal year 1981.127

The General Dynamics insurance claim illustrates the difficulties of contractual risk distribution in weapons acquisition contracts. Once the contract is awarded to a contractor on whom the government feels dependent, other goals compete with efficient risk distribution. The contractor here used the insurance claim as a bargaining chip to gain leverage with the Navy. Secretary Lehman believed he needed Electric Boat to achieve his goal of a 600-ship navy and consequently was willing to pay the premium demanded by the contractor. Ensuring the continuous construction of ships

125. Hidalgo's warning about buying higher-priced ships on a sole source basis had been correct. The new submarine contracts were restructured to set a higher ceiling price.
127. Id. at 11.
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took precedence over preserving an equitable allocation of risk between the government and its contractors. A Navy secretary with different goals might have been willing to bear the political and economic costs of litigating the claims with Electric Boat.

V. Conclusion and Recommendations

This Article has examined the role of contract and procurement policies in the acquisition of the SSN-688 attack submarine. As the contractual structure struggles to mediate between the dual needs of stability and change, the political and economic environment of defense contracting often fosters inflexibility, instability, and the adoption of extra-contractual remedies.

A well-functioning procurement process should appropriately allocate risk between the contractor and the government. In addition, it should not create incentives for the contractor to pursue extra-contractual remedies. It is not possible to achieve these goals by applying the same contract structure and procurement policies to all weapons programs. The procurement process for each weapons system should be carefully tailored to the program's specific characteristics.

The case study of the SSN-688 procurement process is the basis for several recommendations for improving the formulation, execution, and dispute resolution of weapons contracts. Briefly, the recommendations are as follows:

(1) Limit the use of fixed-price contracts when significant uncertainties exist in specifications, cost, and performance.
(2) Involve the procurement contractor in the early stages of the design process.
(3) Utilize cost controls for constructive changes.
(4) Strengthen the authority of the contracting officer.
(5) Utilize alternative dispute resolution techniques as a method of resolving some contract claims.
(6) Reduce the government's discretion in awarding extra-contractual relief under Public Law 85-804.
(7) Require "good faith" in the filing of insurance claims by contractors.

A. Limit the Use of Fixed-Price Contracts

Many of the problems of the SSN-688 procurement process resulted from the use of an inflexible fixed-price contract for the first follow ship built by Electric Boat in 1971. A "cost-type" contract would have caused fewer difficulties. After the claim settlement, As-
Assistant Secretary of the Navy Hidalgo conducted a study which concluded that a fixed-price incentive contract would have been appropriate only if "the contract design package [was] technically sound and stable, the ship [was] not complex, and the shipbuilder's project workload [was] stable." If these conditions were not met, the study recommended the initial use of a cost-plus contract, with a transition to a fixed-price incentive contract as soon as the actual costs of ship construction could be accurately predicted—presumably after the completion of the first ship. This technique has been used successfully in the acquisition of various major weapons systems.

Where uncertainties in cost, technical specifications, and scheduling are high, as in the construction of the lead ship or the first follow ship by a follow contractor, a "cost-type transition" contract is more appropriate. There is little to be gained by forcing the parties to estimate the costs of such risks in a speculative fashion in order to arrive at a fixed-price contract. Instead, the government should insist on using a cost-type transition contract in which the contractor accepts a lower profit in exchange for the government's assumption of most of these risks.

Under a cost-type transition contract, work begins on a cost reimbursement basis, and the parties agree to negotiate a superseding definitive fixed-price incentive contract upon resolution of the technical, cost, and schedule risks. The time of transition to a fixed-price contract will vary from program to program. The contractor's major incentive to make the transition early is the higher target profit that can be negotiated for a fixed-price contract. The government's major incentive is the determination of a more definitive limit on the final cost of contract performance. Once the parties adequately define and price the risks associated with construction of the first follow ship, all subsequent follow ships awarded to that contractor should use fixed-price incentive contracts.

129. Id.
130. Id. at 138.
131. Under this arrangement, Electric Boat would have begun work on its first SSN-688 before technical, cost, and schedule uncertainties had been resolved on the lead ship contract at Newport News, without assuming the entire risk.
132. Of course, this incentive is more meaningful when the contract change process is brought under control.
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The uniformed Navy in Naval Sea Systems Command (NAVSEA) did not accept Hidalgo’s proposal to use a cost-type transition contract. NAVSEA feared that the shipbuilders might shift resources to non-Navy work if they were not offered favorable contract terms. NAVSEA also feared that the transition from a cost-type contract to a fixed-price contract could result in disputes and lengthy litigation. A Ship Acquisition Policy Advisory Council was formed to reconcile the contrary views of NAVSEA and Assistant Secretary of the Navy Hidalgo. The Council essentially acquiesced to NAVSEA’s view by suggesting that NAVSEA merely “consider” the use of cost-type contracts when the contract risks cannot be “reasonably priced.”

The debate over the appropriate contract type continues. Defense contractors and the Undersecretary of Defense for Acquisition seek more limits on the use of fixed-price contracts, especially for development contracts and for production contracts begun prior to the completion of full-scale development. But the Navy continues to assert its preference for fixed-price contracts. Although the Department of Defense is slowly reversing this controversial policy, the dispute over contract type remains unresolved.

B. Involve the Contractor in the Design Process

One important way to minimize costly construction changes is to involve the contractor in the early stages of the weapon design process so that the design can be tailored to the resources that the

135. Id.
137. Under the guidance of Secretary Lehman, the Navy attempted to expand its use of fixed-price contracts, even requiring that contracts for research and development—the phase of greatest uncertainty in weapons acquisition—be fixed-price. Secretary of the Navy, SecNav Instruction 4210.6, Nov. 20, 1985 (on file with author). A Navy official has indicated that even though the service will comply with the more recent policy mandate towards cost-type contracts, the Navy will seek “waivers” in cases where a fixed-price contract is preferred. Navy Reviews Rule on Fixed-Price Development Contracting, Aerospace Daily, Mar. 22, 1988, at 437.
138. Naval Ship Procurement Process Study, supra note 19, at 261. Changes in specifications during the procurement of major weapons systems are inevitable. As this case shows, some specifications must be changed during the construction process, especially
contractor will use to build the ship. Also, the design documentation should be easy for the contractor to understand and to use. The better the documentation is during the design phase, the less likely there will be changes during the construction phase. If the ship designer and the ship builder work together during the design process, these important design goals can be achieved, and consequently, excess construction changes can be minimized.

C. Utilize Cost Controls for Constructive Changes

The focus in seeking to control the costs of changes should be on questionable constructive changes that contractors claim were caused by government-ordered changes to which the additional work is only indirectly related. Several actions are possible. First, as suggested by the Naval Ship Procurement Process Study, the government should include in all contracts a provision that denies contractors any recovery for indirect costs incurred where failure of notice, after the contractor knew or should have known of the problem, deprives the government of the opportunity to solve the problem and save costs. Second, contracting officers must avoid creating constructive changes by adhering to contract terms too meticulously. Finally, the government can perform “should-cost” studies on major contract changes, such as those costing over $50,000. Such analyses might also be useful as baselines for determining how much the government should pay for other changes.

D. Strengthen the Authority of the Contracting Officer

Strengthening the authority of the contracting officer is another step that will reduce the frequency and cost of contract changes. The increasingly large roles played by auditors and other specialists, such as small business advisors, have eroded the authority and continuity of the contracting officer. While the functions performed

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139. Id. at 262.
140. “Should-cost” studies are estimates based on analyses of a contractor’s price proposal in which experts examine the assumptions made by the contractor and the manner in which the proposed price is constructed. A should-cost analysis enables the government to negotiate with the contractor to determine the lowest reasonable price. Fox, supra note 7, at 156.
141. A 1987 report of the Public Contract Law Section of the American Bar Association examined their role:
The role of the DoD contracting officer is changing from the traditional to a less well-defined position of diminished significance and shared authority...[T]he current acquisition environment blankets the contracting officer with oversight, laws
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by these specialists are important, they are not a substitute for the contracting officer’s authority and accountability. The diffusion of authority between contracting officer and auditor leads to less accountability and to inadequate oversight of the procurement process. The decisionmaking authority of the contracting officer in audit matters should be preserved, with the auditor acting as a key advisor to the contracting officer. In this way, the contracting officer is both responsible and accountable for contract changes.

E. Utilize Alternative Dispute Resolution Techniques

The government should consider using Alternative Dispute Resolution (ADR) techniques to resolve contract claims on large procurements such as the SSN-688s. The U.S. Army Corps of Engineers has introduced a number of such methods to resolve its contract claims. In a number of cases it has used a structured settlement process called “minitrials” in which each side presents a highly abbreviated summary of its case before senior officials of both sides. The officers are usually high-level officials who have full authority to settle the dispute and who have not previously been involved in the case. Following the presentation, the officers seek to negotiate a settlement.

Another ADR technique is the creation of an independent, neutral panel to hear the arguments of each party on a case-by-case basis. The panel could be composed of lawyers and experts in the subject matter of the dispute. Their “opinion” would provide the basis for a settlement.

and regulations ... Such diffusion of authority can only mean a diminished role for the contracting officer which, extended to the ultimate conclusion, will result in no identifiable Government official at the operating level being responsible for efficient contracting practices or accountable for contracting failures.


143. See Report on Acquisition Policy, supra note 136, at B-14.


145. Id. at 13.
ADR offers many ways to create a resolution process that is tailored to the needs of a particular case.\textsuperscript{146} The use of such a method in the SSN-688 case might have produced a less controversial and more generally accepted settlement. The government has been slow to recognize that these creative solutions offer the possibility of resolving such disputes both equitably and without the traditional lengthy and costly judicial process.

\textbf{F. Reduce Discretion to Award Extra-Contractual Relief Under Public Law 85-804}

The President’s discretion in establishing the amount of relief under Public Law 85-804 is probably greater than warranted to “facilitate the national defense.” At least two steps should be taken to reduce the discretion available in making awards under Public Law 85-804. First, procedural rules regarding the submission of evidence and discovery should be promulgated. At present, the department seeking relief determines on an ad hoc basis the supporting evidence required for a request for relief. Establishing uniform standards on the submission of evidence would ensure that appropriate documentation supported the decision. Second, no relief should be afforded to firms that are under active investigation for fraud or have been indicted on criminal charges related to the government contracts for which relief is requested.\textsuperscript{147} If this rule had been in effect during the SSN-688 procurement process, General Dynamics would have been ineligible for extra-contractual relief because it was under investigation for contract fraud.\textsuperscript{148}

\textbf{G. Require “Good Faith” Filing of Insurance Claims by Contractors}

To prevent contractors from using the threat of a builders’ risk insurance claim on government-underwritten insurance to obtain benefits beyond the terms of the contract, the Navy should add a “good faith” requirement to its insurance coverage. Under such a policy, claims against the government could not include recovery for the contractor’s own negligence. In addition, the Navy should add a provision that would limit its coverage of unforeseen production

\begin{itemize}
\item \textsuperscript{146} However, the use of ADR should not diminish the authority of the contracting officer to manage the change order process and to minimize the need to seek alternative dispute resolution forums.
\item \textsuperscript{147} This rule is analogous to the equitable principle of “clean hands.”
\item \textsuperscript{148} In 1982, the Justice Department announced that it had collected insufficient evidence to indict General Dynamics or its employees for fraud. Goodwin, supra note 24, at 282.
\end{itemize}
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costs to those not attributable to the contractor's deliberate actions. The contractor should bear the risk for the shoddy workmanship of its own employees.

This Article has addressed instances in which contract and procurement policies have created particularly egregious problems in the weapons acquisition process. Of course, contractual improvements and policy changes should not be seen as a panacea for all problems of weapons acquisition. Many dimensions of the acquisition process, such as management, organization, and budget, cannot be addressed solely through the instrument of contract. However, it is important to understand how the problems created by procurement contracts and policies affect the course of major weapons systems acquisitions in order to improve the process in the future.