

Incentives, Downsizing, and Value Creation at General Dynamics*

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August 1994

Abstract

In 1991, defense contractor General Dynamics engaged a new management team which adopted an explicit corporate objective of creating shareholder value. The company tied executive compensation to shareholder wealth creation, and subsequently implemented a strategy that included downsizing, restructuring, and exit. Paying large executive cash bonuses amid layoffs ignited controversy. However, by 1993 shareholders realized gains approaching \$4.5 billion, representing a dividend-reinvested return of 553%. The study shows how incentives assist in shaping strategy, illustrates the political costs and economic benefits of downsizing, and demonstrates that even firms in declining industries have substantial opportunities for value creation.

Forthcoming in the *Journal of Financial Economics*

*Data and quotes provided by GD officials are from the teaching case (Murphy and Dial, 1993) which was approved and released by GD management; additional material in this article are from publicly available sources. We are particularly grateful to GD officials Bill Anders, Paul Hesse, Jim Cunnane, Ray Lewis, and Al Spivak for their time and helpful comments. George Baker, Linda DeAngelo, Myra Hart, Michael Jensen, Scott Keating, Karen Van Nuys, Karen Wruck, and especially Harry DeAngelo (the referee) provided useful comments. Financial support was provided by the Division of Research at the Harvard Business School.

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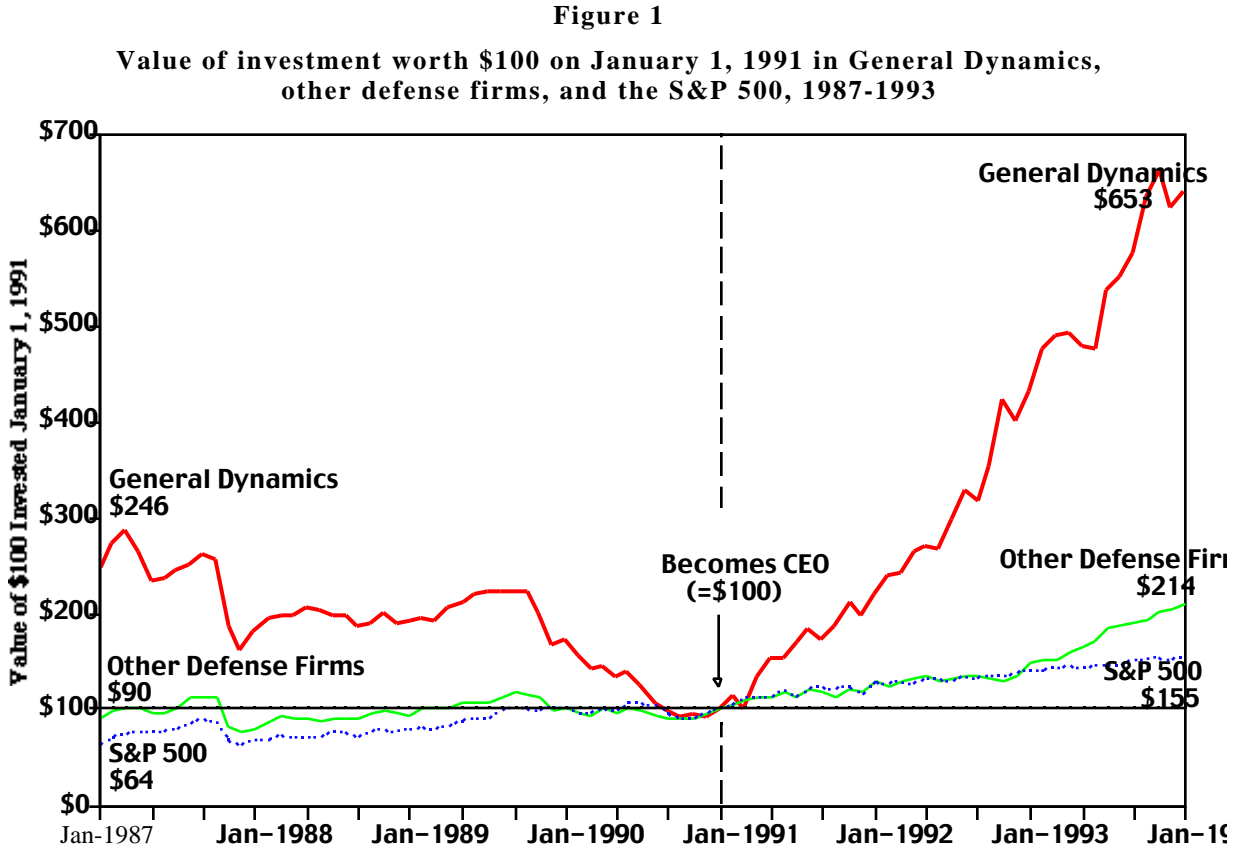
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1. Introduction

In the post-Cold War era of 1991, defense contractor General Dynamics Corporation (GD) faced declining demand in an industry saddled with current and projected excess capacity. While other contractors made defense-related acquisitions or diversified into non defense areas, GD adopted an objective of creating shareholder value through downsizing, restructuring, and partial liquidation. Facilitating GD's new strategy were a new management team and compensation plans that closely tied executive pay to shareholder wealth creation, including a Gain/Sharing Plan that paid large cash rewards for increases in the stock price. As GD's executives reaped rewards amid announcements of layoffs and divestitures, the plans became highly controversial, fueling a nationwide attack on executive compensation by politicians, journalists, and shareholder activists. Nonetheless, GD managers credit the incentive plans with helping to attract and retain key managers and for motivating the difficult strategic decisions that were made and implemented: GD realized a dividend-reinvested three-year return of 553% from 1991 to 1993—generating \$4.5 billion in shareholder wealth from a January 1991 market value of just over \$1 billion.¹ In the process, GD returned more than \$3 billion to shareholders and debtholders through debt retirement, stock repurchases, and special distributions.

Following William A. Anders' appointment as Chairman and Chief Executive Officer (CEO) on January 1, 1991, GD reversed a four-year slide in market value and subsequently outperformed other firms in the defense industry and in the Standard & Poor's 500. Fig. 1 shows the value of an investment worth \$100 upon Anders' appointment as CEO. As shown in the figure, GD stock significantly underperformed the industry and the market, and shareholders had lost 59% in the four years prior to Anders' appointment. Following Anders' appointment, the \$100 investment in GD stock grew to \$653 by December 1993, far exceeding

¹ The three-year return of 553% is the return on a share of stock (with reinvested dividends and special distributions) not repurchased in the 1992 Dutch auction. The return to all shareholders over this period (assuming that cash from the repurchase, dividends, and distributions is not reinvested and earns zero returns thereafter) is 426%.



Note: Returns assume that dividends and proceeds from repurchases are reinvested. Other defense firms include those listed in table 7 (excluding General Dynamics). Weights for industry value-weighted returns are 1/1/91 market capitalizations.

the returns on a \$100 investment in a value-weighted defense industry portfolio (excluding GD) and the S&P 500 which grew to \$214 and \$155, respectively.

In this clinical study of compensation and strategy at General Dynamics, we examine GD’s compensation system and document its role in determining and achieving GD’s corporate objective. Critics of GD’s compensation system contend that GD’s optimal strategy was obvious and that its managers should have carried out this strategy without high-powered incentives: the reduction in defense spending seemed an inevitable consequence of changing world events, and GD’s CEO was already paid an annual base salary of \$800,000 to fulfill his fiduciary responsibility to shareholders. Although the strategic options available to GD were also available to its competitors, GD was the only defense contractor that responded promptly to the declining world market by taking substantial resources out of the industry. We therefore interpret GD’s performance (measured relative to the market and industry) as reflecting in large part GD’s incentive systems, its articulated objective of creating value for shareholders, and the vision of GD’s management.

Although some of the \$4.5 billion increase in wealth for GD's shareholders from 1991-1993 reflected either exogenous events in the market or defense industry or GD-specific events not under management's control, we estimate that between \$2.3 and \$3.5 billion of the increase was due to actions taken by GD's managers. Although it is impossible to prove that GD's incentive system "caused" these wealth-increasing actions, we present evidence that the system provided meaningful incentives to undertake particular actions, that these actions were taken, and that the managers themselves believe that GD's restructuring and ultimate downsizing could not have been accomplished without the incentives in place.

Viewing this clinical study in a broader context, GD's situation is similar to that confronting firms in other industries characterized by excess capacity, such as automotive, retail trade, steel, and computers. Excess capacity in the defense industry is related to the Reagan-era build-up and the post-Cold War downsizing, while in other industries excess capacity arises from changes in technology and demand, deregulation, increases in global and non unionized competition, and managers' tendency to overinvest in growth. Economic efficiency suggests that human as well as physical capital should be transferred from industries with excess capacity to alternative sectors. Few managers, however, have been able to accomplish the necessary resource redirection until their organizations face crises in the product, factor, or capital markets (Jensen, 1993). Even though GD's situation is replicated in many firms and industries, its response and ultimate achievements are remarkable, and serve as perhaps the preeminent management and shareholder success story of the early 1990s.

The paper proceeds as follows: Section 2 offers a conceptual framework relating to the importance and difficulty of providing appropriate managerial incentives in industries saddled with excess capacity. In section 3, we describe the compensation policies and strategic initiatives at GD under CEO Anders, and examine the political consequences of GD's Gain/Sharing Plan. The data presented were obtained from public sources and from discussions with Anders and other GD executives during 1993. Section 4 contrasts GD's strategy and incentives with those adopted by other major defense contractors. We show that, although other contractors also espoused and eventually adopted consolidation and downsizing, GD's response in moving resources out of the industry was significantly quicker and more dramatic than its competitors. In addition, we show that GD had substantially more stock-based incentives than the average of other firms in the industry or in the S&P 500. Section 5 analyzes the source of GD's value gain, and examines several of the criticisms and concerns relating to GD's compensation and strategy voiced by politicians, academics, shareholder groups, and the media. Section 6 concludes.

2. Value creation and incentives in the defense industry

Excess capacity in an industry implies that increased investment in the industry earns less than the cost of capital, and therefore destroys value for shareholders and for society. However, excess capacity offers important opportunities to create value even in the absence of profitable investment opportunities. In particular, creating value under excess capacity involves diverting resources from activities that earn less than the cost of capital (Stewart, 1991), which in turn implies transferring human as well as physical capital from industries with excess capacity to alternative sectors. Stock repurchases, dividends, special distributions, and cash acquisitions within an industry create value under excess capacity by paying out cash to shareholders rather than spending it unproductively (Jensen, 1986). Similarly, workforce reductions through layoffs and attrition create value by facilitating the transfer of workers to sectors where their skills and effort are more highly valued by society. The transfer of human resources, unfortunately, often imposes real costs on redeployed workers—especially in the short run—but is nonetheless an efficient and necessary response to excess capacity. Moreover, as we discuss below in section 5, the fact that redeployed workers earn lower wages in alternative sectors does not necessarily imply that implicit contracts have been breached or that wealth has been transferred from workers to shareholders.

The end of the Cold War and the resultant decline in the demand for major weapons platforms generated excess capacity among defense contractors. Assuming that the demand shift is permanent, the economically efficient response is to move both human and physical capital from the defense sector to alternative higher-valued uses. Market pressures will inevitably force resources out of the defense industry in the long run. In the shorter run, however, many defense firms can maintain their current production with only small declines in employment and investment. Major defense contractors typically maintain large “backlogs” of current orders for future deliveries: GD’s 1990 backlog, for example, was \$23 billion. Profit margins on these backlogs are sufficiently high to guarantee large cash flows and solvency for several years. Many defense contractors also have large non-defense-related businesses that can subsidize inefficient resource utilization in defense businesses. Alternatively, non-diversified defense contractors can use current cash flows to diversify gradually by retraining their workforce to produce non-defense products or by acquiring non-defense businesses. Yet another strategy—rational for an individual defense firm but not viable for the industry as a whole—is to enhance the probability of surviving the impending shake-out in the global defense industry by investing and growing in the defense area.

Traditional executive incentive packages—characterized by high base salaries, accounting-based bonuses, and low levels of stock ownership (Jensen and Murphy,

1990)—are not effective incentives to downsize. These traditional pay practices may work well in strong growth economies where the actions that create size and growth are closely correlated with the actions that create value (Baker, 1992). These same practices, however, provide incentives for continued growth even when it is not warranted by the market, and thus have contributed to excess capacity in many industries.

There are several reasons why managers paid under traditional systems are unlikely to adopt downsizing strategies even when these strategies produce the highest benefits for shareholders and society:

1. Managerial compensation is typically tied to firm size and/or span of control. Economic theory predicts that CEO compensation will increase with firm size only to the extent that size is a proxy for the skills and abilities required for the position (Rosen, 1982). The pay-size relation has been institutionalized, however, by widely utilized compensation surveys that use size as the primary, if not the only, determinant of pay levels (Baker, Jensen, Murphy, 1988).
2. Managerial compensation is typically tied to short-run accounting profits (Healy, 1985). Downsizing often involves large restructuring charges that reduce accounting profits in the short run.² Encouraging voluntary attrition through early retirement, severance programs, and retraining programs also increases current expenses, thereby decreasing current accounting profits. In addition, gains associated with sales of plants or divisions are often not included in net income. Thus, managers pursuing downsizing strategies will realize immediate reductions in their annual accounting-based bonuses.
3. Non monetary compensation—including power, prestige, and community standing—tends to be linked to firm size and survivability and not to wealth creation. Managers involved in downsizing and layoffs will be subject to media criticism and loss of community standing.
4. Laying off employees and leaving communities is personally painful for managers (particularly those with long company tenures). It is relatively easy to provide incentives for growth: Managers intrinsically enjoy opening new plants, hiring new workers, and announcing new investment programs. In contrast, few managers enjoy downsizing: it's simply less fun than growing.³ In addition, affected employees and communities impose large non pecuniary costs on managers, which further reduces the managers incentives to downsize.
5. Managers often embrace survival and not value creation as the ultimate objective of the organization (Smale, 1989). Many managers don't understand and too easily dismiss

² Dechow, Huson, and Sloan (1994) present evidence that compensation committees may implicitly adjust accounting-based bonuses for the negative consequences of restructuring charges.

³ See, for example, "The Pain of Downsizing," *Business Week* (May 9, 1994).

exit as an appropriate long-term strategy for an organization, even when this strategy creates the most value for shareholders and society. Managers focused on corporate survival will resist exit and pursue costly and inefficient diversification into product lines where they have no expertise or competitive advantages.

6. Moving resources out of an industry reduces the value of managers' industry-specific human capital, and may ultimately cost managers their own jobs.

The tendency for managers to resist downsizing and restructuring highlights both the difficulty and importance of providing appropriate incentives in the defense industry and other industries with excess capacity. Resistance to downsizing can be mitigated by explicitly adopting a corporate objective of *creating shareholder value*, and by tying managers' wealth to shareholder value creation—not to size, employment, accounting profitability, or survival. Stock-based incentives—such as stock options, restricted stock, stock ownership, and compensation plans tied to stock prices rather than profits—are natural ways to reward value creation. Because the decision to downsize and transfer resources from an industry is made at the top of the organization, stock-based compensation can be concentrated among top managers, and not diluted by pushing incentives throughout the organization.⁴ Bringing in managers from outside the firm may also be appropriate: outside managers have weaker personal relationships with employees, customers, suppliers, and communities affected by workforce reductions, and the loss of firm-specific capital associated with outside hires is less important under downsizing and exit strategies. Spinning-off unrelated subsidiaries and avoiding new diversification can mitigate cross-subsidization tendencies. In the following sections, we show how GD followed these prescriptions, creating nearly \$4.5 billion in shareholder wealth in the process.

The hypothesis that stock-based incentives are most important in declining industries with little potential for future growth appears counter to Smith and Watts (1993), Gaver and Gaver (1993), and others who argue that stock-based incentives are most important in companies with growth opportunities, based on the premise that managerial discretion is more important in growing industries. But, managerial discretion is important in declining industries such as defense as well as in growing ones: there can be significant opportunities to create wealth even when there are few opportunities to create growth. Moreover, under the hypothesis that managers will naturally pursue growth opportunities but will resist downsizing, it is more important to provide financial incentives to downsize than to provide incentives to grow.

⁴ Downsizing or exit strategies may be unique in this respect: most strategies require “buy-in” from lower-level employees which in turn requires some form of incentive compensation at lower ranks.

3. Compensation and strategy under CEO William Anders

3.1. Company background

General Dynamics began in 1899 as the Electric Boat Company and became a major supplier of submarines and cargo ships to the U.S. Navy during both World Wars. Following World War II, the company adopted a strategy of building the “General Motors of the weapons industry” through acquisition, diversification and internal development. By 1960, the company was a major aircraft, booster rocket, and missile manufacturer, and dominated the nuclear submarine business. The company was renamed General Dynamics Corporation to reflect the firm’s diversified defense operations.

GD continued to grow and expand during the next three decades, establishing itself as the only defense contractor to supply major weapons systems to all three branches of the U.S. military. GD also expanded into foreign sales. Its F-16 jet was adopted as the preeminent lightweight fighter jet by the U.S. Air Force and several foreign countries. GD’s Electric Boat division expanded its dominance of the nuclear submarine business; its Convair division added the “Tomahawk” sea-launched cruise missile to its arsenal of standard missile products. During the early 1980s, GD bought Chrysler’s M-1 “Abrams” and M-60 tank business and acquired Cessna, a leading manufacturer of civilian aircraft.

GD also became involved in several major fracas with the federal government. While GD steadfastly denied accusations of illegal actions (ranging from faulty workmanship to fraudulent claims and illegal gifts), the firm was barred by the Navy for a brief period from receiving new contracts. Unfavorable press coverage damaged GD’s public image. Although GD remained profitable throughout the 1980s, continuing profitability was threatened in the latter half of the decade by changes in the government’s procurement practices, including more dual-source supply, lower progress payments, and greater focus on price competition and fixed-price contracts.

3.2. GD hires Anders as vice chairman

On September 27, 1989 GD announced the hiring of William A. Anders as its next Chairman and Chief Executive Officer. The 55-year-old Anders, hand-picked by CEO Stanley Pace, agreed to join GD as vice chairman on January 1, 1990 and succeed Pace as Chairman and CEO at his retirement on January 1, 1991. Anders was a former Air Force pilot and Apollo 8 astronaut who orbited the moon on Christmas 1968. He had served as executive secretary of the National Aeronautics and Space Council in Washington (1963-72),

commissioner of the Atomic Energy Commission (1973-74), head of the Nuclear Regulatory Commission (1975-1976), and Ambassador to Norway (1976-1977). In 1977, he joined General Electric as general manager of its nuclear energy products division and then its aircraft equipment division. In 1984, Anders was named senior executive vice president for operations at Textron, a Rhode Island-based conglomerate. He headed Textron's defense businesses as well as several consumer products lines.

According to Anders, one of the chief concerns in his contract negotiation was assuring his independence from GD's largest shareholder, the Crown family. Although the Crowns were not directly involved in selecting or recruiting Anders to GD, they had established a reputation for influencing CEO employment decisions. Self-made millionaire Henry Crown originally gained control of three GD board seats in 1959 as the result of the merger between GD and Crown's Material Service Corporation. In 1962, following GD's disastrous foray into manufacturing commercial airliners, Crown ousted the CEO. In 1966, Crown lost a boardroom power struggle with his personally selected CEO, and was forced to sell his shares and leave the board. Just three years later, Crown and his allies quietly accumulated 18% of GD's common stock, and Crown effectively regained control of the corporation. Once again he replaced the incumbent CEO.

Although Henry Crown died in late 1990, three representatives of the Crown family remained on GD's board of directors, including corporate Executive Vice President Lester Crown. As of February 1991, the Crown family held over nine million shares of GD stock—about 22% of the 41.9 million outstanding shares (See appendix table A). Anders viewed the existence of a major shareholder as an obstacle rather than a benefit. Anders reflected on the contract negotiations:⁵

I negotiated a great contract because I wanted total independence. I realized the risk involved in working for a large shareholder [the Crown family] and I wanted to be independent from that risk. First, I wanted GD to make me whole from what I was giving up at Textron. Then, I wanted an agreement so that I would be able to retire on the day I walked in here. That is the kind of independence I wanted so that I could make the changes that were needed and I would not have to be looking over my shoulder at the big shareholder.

To lure Anders from Textron, GD ultimately guaranteed a base salary of not less than \$550,000 in 1990, increased to not less than \$600,000 in 1991. (His actual salary for 1991 was \$800,000.) His employment agreement also specified that he would receive annual retirement payments of \$250,000 to \$500,000 for life, depending on the length of his tenure with GD. Anders also received 30,940 shares of GD stock (worth \$1.4 million on January 1,

⁵ Unless otherwise sourced, quotes from Anders are from the teaching case (Murphy and Dial, 1993) and are based on a personal interview conducted in April 1993.

1990) and 103,746 stock options (with an exercise price of \$44.94 and a 1/1/90 Black-Scholes value of \$1.9 million) to offset fringe benefits and deferred compensation associated with his departure from Textron.⁶

Corporations hiring CEOs from other firms often pay “sign-on bonuses” to compensate for lost benefits: For example, IBM paid Louis Gerstner \$5 million for benefits he lost at RJR Nabisco, and Kodak paid George Fisher \$5 million for benefits lost at Motorola. An interesting difference in Anders’ case is that his sign-on bonus was paid in GD stock options and restricted stock, rather than in cash. This stock-based sign-on bonus also ensured that Anders’ option and stockholdings would approximate those of his predecessor, Stanley Pace.

3.3. Company and industry outlook upon Anders’ appointment

Anders spent 1990, his first full year with GD (but before he became CEO), undertaking a comprehensive assessment of the company’s strategy, its operations and markets, and its financial structure. Realizing that it was no longer “business as usual,” he quickly concluded that GD was heading towards serious financial trouble. GD’s monthly closing stock price had fallen from a high of \$79 in February 1987 to \$25.25 at the end of 1990; accounting returns had also declined over the same time period. The company absorbed a \$578 million net loss in 1990 (on \$10.2 billion in sales). These losses were driven by over \$1.3 billion in unusual charges, including \$700 million in write-offs over its troubled A-12 Navy attack jet program. GD announced 8,500 layoffs in 1990, and both Moody’s and S&P downgraded the firm’s debt ratings, citing its weak financial condition. In December 1990, the Pentagon announced that its audits revealed GD to be in “weak” financial condition with “...a possible chance for bankruptcy.”⁷

World events in 1989 and 1990 had profound implications for the entire U.S. defense industry. In 1989, the U.S.S.R. completed its withdrawal from Afghanistan, allowed Poland’s first free elections, and saw Soviet-backed regimes fall in Hungary, East Germany, Czechoslovakia, Bulgaria, and Romania. In November 1989, the Berlin Wall fell. During 1990, Germany was reunified and the Soviet Union disintegrated. In November 1990, U.S. President George Bush and Soviet President Mikhail Gorbachev, along with other leaders from NATO and the Warsaw Pact, announced the official end of the half-century-old Cold War,

⁶ The number of restricted shares granted was based on the amount Anders would have received if he had stayed at Textron (which in turn depended on Textron’s performance): Anders’ received 13,740 shares, 16,586 shares, and 4,614 shares in 1990, 1991, and 1992 respectively.

⁷ David J. Jefferson and Andrew Pasztor, “Pentagon Audits Show Contractors Owe U.S. Hundreds of Millions in A-12 Job,” *Wall Street Journal*, Dec. 19, 1990.

promising “a new era of democracy, peace, and unity.” Arms-control agreements between the U.S. and the (former) Soviet Union dramatically reduced the current and projected future demand for major defense platforms. The prospects for peace carried particularly harsh ramifications for GD: While other major defense contractors had diversified operations outside of the defense industry, GD received more than 80% of its revenues from the Pentagon.

Anders believed that the collapse of the Soviet Union and the end of the Cold War signaled a watershed in defense funding that would permanently affect GD’s market opportunities. This conclusion was reached, in part, by analyzing patterns of U.S. defense spending during wartime and peacetime since 1900, which suggested that Cold War defense spending levels were an aberration not sustainable in “true” peacetime. Anders’ prediction of future cuts was supported by federal projections released in early 1991. While the 1991 federal budget authorized \$86 billion in procurement spending, the 1992 federal budget (delivered to Congress in January 1991) had revised the 1991 and 1992 budget authority for procurement downward to just \$64 billion and \$63 billion, respectively.⁸

3.4. Anders’ early initiatives as CEO

Anders took office as Chairman and CEO on January 1, 1991, his explicitly stated goal was to transform GD into a shareholder-driven enterprise. He sought to improve company financial performance by maximizing margins from its \$23 billion backlog, increase returns, and generate a sharper focus on investments through higher margins, better progress payment rates, and higher hurdle rates. In order to facilitate these operational changes, Anders believed he needed to bring in a new management team, fundamentally alter the corporate culture, and institute compensation systems for the top management team that more closely tied pay to shareholder wealth creation.

In spite of the planned reductions in government spending and the warning signals emanating from within GD, Anders faced a major hurdle in convincing his board of directors and existing top managers that GD was, indeed, heading for a crisis. He found that most of the managers at GD (and at other defense firms as well) believed they could maintain the status quo and survive the impending shake-out in the defense industry. Anders brought in a Wall Street analyst to alert the top managers and directors to the severity of GD’s situation. The

⁸ Procurement appropriations of the Department of Defense finance the acquisition of weapons, equipment, munitions, spares and modifications of existing equipment. *Budget authority for procurement* includes appropriations for the year enacted as well as spending which is earmarked for future years. *Actual spending* (which includes budget authority for the year enacted in addition to appropriations carried over from prior years) was estimated at \$79 and \$74 billion for 1991 and 1992, respectively; actual spending was projected to fall to \$67 billion by 1994.

analyst noted that GD's price-earnings ratio ranked 497 in the S&P 500. In his ensuing discussions with directors, Anders stressed the need to build a new management team, but emphasized the difficulty of attracting, retaining, and motivating managers in the declining defense industry.

Soon after Anders' appointment as CEO, GD made wholesale management changes at its upper echelons. Eighteen of the top 25 executives were either new to GD or new to their positions. Anders promoted Executive Vice President James Mellor (who had been in charge of submarines, tanks, and overseas sales) to president and chief operating officer. Anders and Mellor were members of GD's board of directors, which included five top managers, two former Chairmen/CEOs, and nine outside directors (See appendix table A).

Mellor was in charge of operationalizing Anders' objective of creating wealth for shareholders. An industry analyst lauded the Anders-Mellor team: "Anders provides the cold, calculated decision-making needed at the strategic level, and Mellor is very good at getting a lot of people rowing together in the right direction."⁹ Anders commented on Mellor's role:

We talked a lot about focusing on shareholder value and each of our top executives was committed to this objective. Even though that was our *focus*, it was not our *strategy* because "maximize shareholder value" is difficult to operationalize.

Mellor really helped the managers understand how to run their businesses. Just accepting the idea of shareholder value isn't enough. For a lot of the managers, it was a case of, 'OK, I believe in shareholder value, but what should I do tomorrow?' Mellor taught them how to manage for cash.

Anders' new business plan called for dividing the company into business areas and pushing decision-making authority further down into the hierarchy. To assist its managers in adjusting to their expanded responsibilities amid the company's new business approach, GD commissioned Northwestern University's Kellogg School of Management to develop a special one-week seminar for 150 of its top managers. According to Anders, the intensive training sessions focused on teaching business basics and investment analysis so that GD's managers would "...think like business people, not like aerospace engineers."

3.5. *Executive compensation at General Dynamics*

Anders sought to focus his management team on maximizing shareholder value. He describes the company's approach:

When we started to build a new management team, we wanted *partners*, not high salaried people. We needed to attract good people from outside and to entice good insiders to change to different divisions. These managers came here for about the same salaries they had been making, but they

⁹ Anthony L. Velocci, Jr., "General Dynamics Shakeup Aims for Solid Fiscal Footing," *Aviation Week & Space Technology*, August 5, 1991.

needed additional inducements because their careers were riskier at GD. To attract good people and then to change behavior, you have to compensate them well.

I didn't want to take the company private, but I wanted a private-company mentality. I wanted to break out of the 'hired hand' mentality. There is an enormous difference between being a smart hired hand and being a partner. They brought me in as a hired hand and I changed it to a partnership arrangement. I wanted to develop a management/shareholder partnership and create an environment where there was no doubt in anyone's mind about what we were here to do: create shareholder value.

In addition to defining the corporate objective and building a new and better-trained management team, Anders decided it was crucial for GD's executive compensation policies to provide meaningful and appropriate incentives for its top-level managers. GD's existing compensation packages included base salaries, bonuses tied to the company's accounting return on equity, and stock options. Anders felt that relying on accounting-based bonuses provided inappropriate incentives for a shareholder-value-focused company requiring dramatic changes in its strategy and culture. Furthermore, the outstanding stock options—granted in prior years at exercise prices far exceeding the current stock price—also failed to provide meaningful incentives.

Under Anders' recommendation to the compensation committee, approximately 25 top executives would earn cash "Gain/Sharing" bonuses for improvements in the stock price, 150 upper-level executives would receive accelerated stock option and restricted stock grants, and 1,150 managers and executives would be eligible to participate in an "option exchange" program in which previously granted options could be exchanged for new options at a lower exercise price. The proposal also included changes in the company's savings and investment plan (SIP) to encourage lower level employees to hold GD stock (approximately 62,000 employees). These proposals were accepted (with minor modifications) by the four outside directors who comprised the compensation committee, approved by the full board of directors on February 15, 1991, and approved by shareholders at the May 1, 1991 annual meeting.

3.5.1. Incentives, bonuses, restricted stock, and stock options

At its February 15, 1991 meeting, the committee approved approximately 1.6 million shares of stock option awards in addition to bonuses of \$19 million in cash and restricted stock for the 1,150 eligible employees. Table 1 shows the base salaries, bonus awards, and 1991 restricted stock and stock option awards. Each option, exercisable beginning August 1992 and expiring in February 2001, gave the recipient the right to buy one share of common stock at an exercise price of \$25.5625 (the market price on the February 15 grant date). Shares of restricted stock vested over time: 40% became unrestricted four years after the grant date, and thereafter at a rate of 10% per year, contingent on continued employment. In accordance with Anders' proposal to accelerate option and restricted stock grants for the company's top 150

Table 1**Salaries, bonuses, restricted stock, and stock options awards approved by
General Dynamics compensation committee on February 15, 1991**

Executive	1991 Base salary	Incentive awards granted in February 1991			Number of stock options ^d	New options acquired by exchanging old options	Total options after new grants and exchange
		1991 Cash bonuses ^a	Restricted stock				
			Shares granted ^b	Shares promised ^c			
William Anders Chairman/CEO	\$800,000	\$500,000	20,850	44,910	219,880	51,479	271,359
James Mellor President/COO	\$650,000	\$300,000	15,000	30,000	120,000	13,613	133,613
Lester Crown Executive VP	\$303,000	\$200,000	5,550	13,250	48,500	11,862	60,362
Executive officers as a group ^e	\$9,416,100	\$2,632,000	94,260	253,410	829,350	249,206	1,078,556
Other participants		\$11,377,749	93,880	150,450	734,230	288,556	1,022,786
All participants		\$14,009,749	188,140	403,860	1,563,580	537,762	2,101,342

^a Some cash awards (including \$180,000 to Mr. Crown) made in unrestricted shares of common stock.

^b Restricted stock awards given at the fair market price of \$25.5625. Some awards for executives other than those listed made on March 5, 1991, at a market price of \$24.3125.

^c Restricted stock awards promised for 1992 and 1993. These shares were ultimately conveyed in December 1991.

^d Options granted at an exercise price of \$25.5625. Some options for executives other than those listed were granted on March 5, 1991, at an exercise price of \$24.3125.

^e Amounts based on 36 executives for 1991 base salary (from Dec. 6, 1991 proxy statement) and 29 executives for incentive awards (from March 28, 1991 proxy statement).

Source: March 1991 and December 1991 proxy statements.

executive officers, option grants were approximately three times the normal annual award for each individual, and the committee “promised” that a similar number of restricted shares would be awarded in 1992 and 1993. In contrast to typical restricted stock awards in which the manager receives a fixed dollar value of stock each year, GD’s fixed-share promise means that those shares start providing incentives in 1991, years before they are conveyed.

In addition to the option award program, the compensation committee also approved an “option exchange” program that allowed executives to exchange their “out-of-the-money” options (i.e., options with an exercise price above the February 1991 market price) for a lesser number of “at-the-money” options (i.e., options with an exercise price equal to the market price). The 1,150 executives holding options elected to exchange approximately 1.94 million options with average exercise prices of about \$55 for about 538,000 new options with an exercise price of \$25.5625. The exchanges were pro rated on the basis of the Black-Scholes (1973) value of options already held versus the Black-Scholes value at the new lower strike

prices. For example, Anders exchanged the 103,746 options granted upon his appointment at an exercise price of \$44.94 (with an aggregate Black-Scholes value of \$388,000) for 51,479 options at an exercise price of \$25.5625 (with an aggregate Black-Scholes value of \$388,000, based on stock volatility of 24.25%, dividend yield of 4%, risk-free rate of 8%, and expiration periods of nine and ten years for the old and new options, respectively). In addition, as shown in table 1, Anders received 219,880 “new” options, giving him a total of 271,359 options, each with an option price of \$25.5625.

Although it is common for companies to reprice options following declines in stock prices, GD’s option exchange program was unusual because it yielded repriced options at no additional cost to shareholders. [We note that by reducing the number of options upon exchange, GD’s exchange program was “acceptable” according to the criteria outlined in Crystal and Foulkes (1988).] Anders’ financial incentives to increase stock prices declined, however. Prior to the exchange, each \$1 increase in GD’s stock price (from \$25.5625) increased the Black-Scholes value of Anders’ 103,746 old options by \$39,000, compared to an increase of only \$28,000 for his 51,479 new options. Moreover, based on the subsequent increase in GD’s stock prices to (\$142 by year-end 1993, including special distributions) Anders’ participation in the exchange program personally cost him more than \$4 million *ex post*.

3.5.2. *The Gain/Sharing Plan*

The most unusual and ultimately controversial part of the compensation program proposed by Anders and approved by the compensation committee at the February 15 meeting was the Gain/Sharing Plan. In contrast to typical bonus plans based on accounting performance, GD’s plan was based on stock-price performance, awarding cash bonuses for each \$10 increase in the company’s stock price (representing a \$417 million increase in shareholder value). Under the program, GD’s top executives would receive a bonus equal to 100% of their base salaries if GD’s stock price closed at or above \$35.5625 (i.e., \$10 above the February 15 price) and stayed at or above this level for ten consecutive trading days. For each subsequent \$10 increase sustained for ten consecutive trading days, the executives would receive additional bonuses equal to 200% of their base salaries.

The 25 executives—with combined base salaries of \$6.3 million—who ultimately participated in Gain/Sharing would receive approximately 1.5% of the increase in shareholder value for the first \$10 increase, and 3% for subsequent \$10 increases in GD’s stock price. There was no limit on the number of bonuses as long as the stock price continued to climb. The expiration date of the program was February 15, 1994. Half of each award was to be

deferred until retirement; the other half would be paid in cash, although the amount could be deferred at the recipient's request. The deferred portion would accrue interest at a rate five percentage points above the prime interest rate (or Moody's corporate bond rate, if higher). At the committee's discretion, the interest rate would be reduced if the firm's share prices fell below certain levels in the days immediately following announcements of company earnings.

Executives participating in the committee's proposed Gain/Sharing Plan included Anders, Mellor, CFO James Cunnane, nine corporate vice presidents responsible for functional business performance, four operating group executive vice presidents, and several division and business-area heads. Executive Vice President Lester Crown endorsed the plan but voluntarily elected not to participate. Anders conceived of the Gain/Sharing Plan as a means to institute his "partnership" approach to the management of the firm. Anders, who believed GD's stock price could climb to at most \$45 by 1994, described the initial discussions with the board on the Gain/Sharing initiative:

Keep in mind that originally, it didn't look like there was that great an upside. When we developed and presented it to the Board, I originally asked to be left out of it. I felt somewhat uncomfortable including myself in the plan that I had conceived. However, the Board wouldn't hear of a plan in which I didn't participate.

Anders confided that GD honestly hadn't thought much about the appropriateness of the ten-day window; it was recommended by compensation committee chairman Elliot Stein, who had employed a similar window in a plan at Ralston-Purina.¹⁰

3.5.3. Savings and stock investment plan

To encourage a partnership mentality among lower-level employees, Anders recommended, and the compensation committee approved, changes in the company's Savings and Stock Investment Plan (SIP), which covered approximately 62,000 employees. Prior to 1991, the company contributed 75¢ for each \$1 invested by the employee and allowed employees to designate how the company's contribution was invested. Under the new plan, GD would match employees dollar-for-dollar for investments in the company's common stock while the company's contribution would be only 50¢ for every dollar placed in any investment other than the GD common stock fund.

Prior to the introduction of the new SIP, 20,600 GD employees held 3.7 million shares of company stock. This represented 23% of GD's employees and 8.8% of the shares

¹⁰ In the Ralston-Purina plan, the CEO received a large grant of restricted stock for achieving a stock price of \$100 for 10 days. The plan was ultimately controversial, not because of the 10-day window but rather the \$100 hurdle was met during a period in which the company was underperforming the industry and market (Campbell and Wasley, 1994).

outstanding. By June 1991, the number of employees participating in the program jumped to 48,300 (54%), and the shares held by these employees increased to 4.3 million (10.3%). By June 1992, employees held 6.2 million shares, representing almost 15% of the shares outstanding.

3.6. *General Dynamics under William Anders, 1991*

After Anders was named CEO on January 1, 1991, he moved swiftly to streamline operations and improve profitability. Consistent with his belief that increased expenditures in the defense industry were inefficient, Anders reduced GD's capital expenditures to \$82 million in 1991 from \$321 million in 1990 and \$419 million in 1989. Similarly, R&D spending was cut to half of the \$390 million spent in 1990. GD also emphasized reductions in inventories and working capital in order to reduce costs and improve returns.

A chronology of GD events from 1991 through 1993—including three-day industry and market-relative stock-price reactions surrounding each event—is reported in appendix B. As described in this appendix, GD's stock fell to about \$20 early in 1991 when the Navy's A-12 jet fighter program was canceled. Soon after, the United States and 27 other nations joined in Operation Desert Storm, the military response to Iraq's August 1990 invasion of Kuwait. The air war began on January 17, and the four-day ground war ensued on February 24. GD's marquee products ("Tomahawk" cruise missiles, F-16 fighters, and M-1 "Abrams" tanks) performed spectacularly, but Anders discounted the long-term effect on firm profitability, arguing that the war's cost would ultimately reduce development budgets for new weapons.¹¹

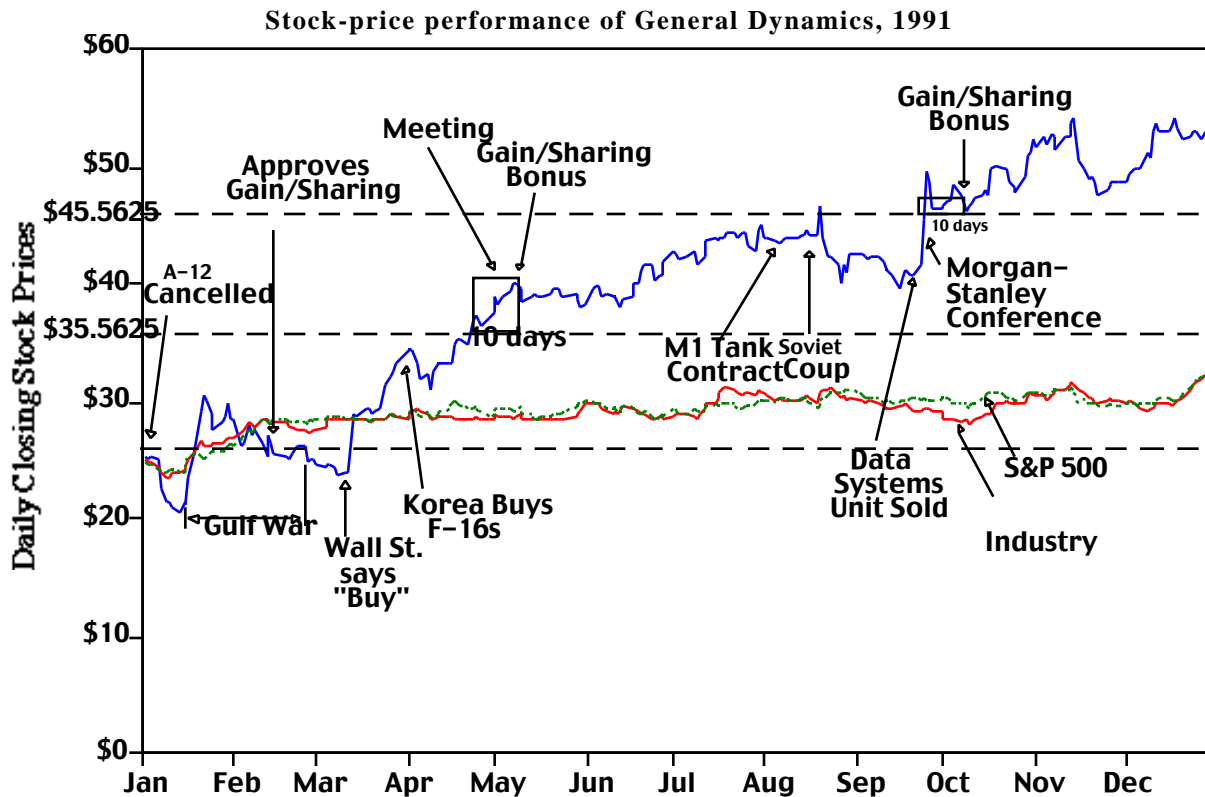
In early February 1991, the federal government allowed GD and McDonnell Douglas to delay repayment of \$1.4 billion in unliquidated progress payments made on the canceled A-12. The companies claimed that repayment would cause extreme financial pressures. Later that month, following the February 15 board meeting approving the new compensation programs, Anders bought 10,000 GD shares at \$25.25, and Mellor bought 5,000 shares at \$25.00 (these purchases are included in appendix table A).¹²

As shown in fig. 2 and appendix B, GD's stock jumped over 20% (from \$23.75 to over \$29, representing an industry-adjusted gain of \$218 million) in the space of a few days in mid-March 1991 on the strength of "buy" recommendations from three Wall Street investment banks. The analysts noted Anders willingness to take "dramatic actions" and recommended the

¹¹ William Saporito, "America's Arsenal: This War Doesn't Mean a Windfall: General Dynamics," *Fortune*, February 25, 1991.

¹² Alexandra Peers, "Some Insiders, Bucking Trend, Buy Stock," *Wall Street Journal*, April 10, 1991.

Fig. 2



Source: Daily stock prices from Dow Jones News Retrieval and Compustat. GD-related events from company press releases, analyst reports, and the *Wall Street Journal*. Industry and S&P 500 prices are determined by appreciating GD's January 1, 1991 price by the cumulative returns on the industry and S&P 500 portfolios.

stock on the basis of three key points: GD's new incentive plans throughout the ranks (especially those that gave managers incentives to focus on shareholder value), reductions in capital and R&D spending, and the possibility of stock repurchases to return cash to shareholders. Within days, GD announced that it would lay off 2,000 employees at its Fort Worth, Texas F-16 jet fighter plant. In late March, South Korea "stunned observers" when it awarded GD a \$5.2 billion order for 120 F-16 jet fighters, reversing a prior award to McDonnell Douglas for their F-18 fighter and pushing GD's stock price up 7%.¹³

On April 23, the federal government selected the team led by Lockheed, which included GD and Boeing, to build the Air Force's next generation advanced tactical fighter (ATF). The program was expected to generate \$60 billion in revenues for the companies. Following the announcement, GD's stock closed up 6.4% to \$36.875, surpassing the Gain/Sharing hurdle of \$35.5625.

¹³ Rick Wartzman and Damon Darlin, "South Korea, in a Reversal, Picks F-16 Jet," *Wall Street Journal*, March 29, 1991, p. A3.

3.6.1. *The first Gain/Sharing payoff*

On May 1, a majority of shareholders (78%) voted their approval of the new Executive Compensation Program, which included the Gain/Sharing provisions. The same day, GD's President Mellor made an announcement widely interpreted as predicting massive layoffs at the defense giant: "Our current workforce is just over 90,000 employees. In response to the decline in the defense market, present projections indicate that this may be reduced by about 30% over the next four years." GD's stock price closed at \$39, up over 3%. Just five days later, on May 6, GD's stock closed above \$35.56 for the tenth consecutive trading day, triggering \$5.1 million in Gain/Sharing bonuses for 19 executives. The next day, Anders bought another 5,000 shares at \$39.50.

The announcement of the bonuses within a week of shareholder ratification drew howls of protest. *Business Week* dubbed the company "Generous Dynamics," and quoted a Pentagon official warning Anders not to bill the "outrageous" compensation to government contracts. The media was particularly harsh to former outside director and compensation committee member Harvey Kapnick, who qualified for inclusion in the bonus plan when he was named vice chairman in April 1991.¹⁴ His cash bonus was pro rated for the difference between GD's \$33.50 average share price on the day he began work (April 15) and the closing price on May 6; thus, Kapnick received a Gain/Sharing bonus equal to 20.625% of his \$600,000 salary, or \$123,750.

3.6.2. *The second Gain/Sharing payoff*

In spite of the negative publicity, the stock market continued to be enamored with the changes occurring at GD. As shown in fig. 2, the share price leveled out in late summer at \$44 as GD won a \$750 million contract to build 641 M-1 tanks. GD continued to announce layoffs, 1,500 more in 1992 in addition to the 2,500 already slated for 1991.

On September 22, with the stock price hovering in the low \$40s, GD announced the sale of its Data Systems unit to Computer Sciences for \$184 million. Two days later, Anders addressed Morgan Stanley's Aerospace/Defense and Multi-Industry Conference and made two startling announcements. First, he dismissed diversification as a viable strategy for GD, citing a McKinsey study that claimed an 80% failure rate for non defense acquisitions by defense contractors. Second, he predicted that cash flows would be in excess of that required to fund the firm's current liquidity and investment needs. He suggested returning "excess" cash to shareholders using unspecified methods that might include stock buybacks, increased

¹⁴ James E. Ellis, "More Cash than a Lottery," *Business Week*, May 20, 1991, p. 42.

dividends, special distributions, or self tenders. These announcements—which the *Washington Post*, citing Anders’ potential bonus, dubbed “the \$1.6 million speech”—caused the stock price to jump \$7.75 over two days (reflecting an industry-adjusted increase in shareholder wealth of \$343 million), rocketing past the Gain/Sharing bonus target and closing at \$49.50. Ten trading days later, October 8, GD announced a second Gain/Sharing payout of \$12.6 million (200% of the top managers’ base salaries), bringing the total payout to the 25 participants in the plan to almost \$18 million (or about 2.1% of the \$833 million increase in GD’s market value).

Both Gain/Sharing payoffs generated widespread criticism among politicians, labor unions, GD employees, and shareholder groups. For the most part, shareholder groups voiced concerns about the mechanics of the plan, questioning in particular the appropriateness of the ten-day window. Criticism from other sectors focused on the political “incorrectness” of paying large cash bonuses amid announcements of layoffs and downsizing.

3.6.3. *Reaction to Gain/Sharing’s ten-day window*

Gain/Sharing’s ten-day window prompted criticism that managers would make announcements or take actions that increase short-term, but not long-term, stock prices. For example, Howard Sherman, vice president of Institutional Shareholder Services, argued that “...a ten-day plateau is nowhere near a good measure of long-term success.”¹⁵ Institutional proxy advisor Anne Faulk agreed, calling the plan “...a bastardization of a good idea. Ten days just isn’t a very long time, and you won’t see management’s salaries going down when the share price falls.”¹⁶

Although managers may be able to manipulate prices in the very short term by deliberately misleading analysts and investors, there is no evidence that Anders ever attempted to mislead investors: indeed, the “\$1.6 million speech” that triggered the second bonus was presented to industry stock-market analysts who were keenly aware of the possibility of being misled. It is worth noting that, relative to conventional bonus plans based on accounting returns, it is easier to manipulate annual earnings for several consecutive years than it is to manipulate stock prices for two business weeks. It is also worth noting that in conventional stock appreciation rights plans, which pay in cash the difference between the current stock price and a given exercise price, it is sufficient to increase stock prices for a single day, or a single moment. Thus, the ten-day window, while admittedly short, arguably provides better

¹⁵ Robert J. McCartney, “A Most Unusual Executive Bonus Plan,” *Washington Post*, October 21, 1991, p. A1.

¹⁶ James E. Ellis, “More Cash than a Lottery,” *Business Week*, May 20, 1991, p. 42.

long-term incentives than conventional bonus and stock appreciation right plans. Still, a longer window would have provided the same financial payments to GD executives, while generating substantially less criticism among the media and shareholder groups.

3.6.4. Reaction to paying Gain/Sharing bonuses amid layoffs

GD's unionized work force was openly critical of the Gain/Sharing bonuses. A UAW official said, "They're really slopping at the trough."¹⁷ Employees expressed their feelings in the *Mole*, an underground newsletter circulated at GD's jet plant in Fort Worth, commenting, "Anders promises 'gut wrenching cultural change' throughout the corporation. It isn't clear whose gut he proposes to wrench, but it won't be the brave 25 that have had the courage to fearlessly look out for themselves."¹⁸

Many were outraged that the bonuses were being paid while thousands of the rank and file were being laid off. Others protested that the bonuses were much too concentrated among a tiny cadre of senior executives to credibly align employee and shareholder interests. Dean Girardot, GD's coordinator for the International Association of Machinists, asked: "Why is there just Gain/Sharing for the 25—most of them relative newcomers—while people who have worked in the trenches for many years are losing their jobs?"¹⁹

One outspoken critic of GD's compensation policies was former compensation-consultant Graef Crystal, who claimed, "...this ill-conceived plan smacks of the Marie Antoinette school of management," a reference to the extravagant French monarch who showed callous disregard for the poor people in her country.²⁰ Crystal justified his attack:

First of all, the stock rose from a "trough," . . . and all these bonuses came while General Dynamics was "downsizing." . . . It's a scenario that hits you in the gut. This is not a case where somebody's making a lot of money because the company's doing great. This is a case of a guy getting lots of money, and he's an island of prosperity in a sea of misery . . .²¹

. . . The CEO of General Dynamics must be the laziest man in the world. Look at all the incentive plans they have to give him to go to work in the morning.²²

¹⁷ Robert J. McCartney, "Defense Firm's Executives Reap Bonus Bonanza," *Washington Post*, October 9, 1991, p. F1.

¹⁸ Rick Wartzman, "General Dynamics Head Outlines Plan to Cope with Falling Defense Budgets," *Wall Street Journal*, October 31, 1991, p. A3.

¹⁹ Robert J. McCartney, "Defense Firm's Executives Reap Bonus Bonanza," *Washington Post*, October 9, 1991.

²⁰ James E. Ellis, "Layoffs on the Line, Bonuses in the Executive Suite," *Business Week*, October 21, 1991, p. 34.

²¹ Peter Carlson, "Chairmen of the Bucks," *Washington Post Magazine*, April 5, 1992, p. 15.

²² Alison Leigh Cowan, "The Gadfly CEOs Want To Swat," *New York Times*, February 2, 1992.

The outrage over GD's Gain/Sharing bonuses illustrates the important distinction between the politics and the economics of executive compensation. Providing incentives to create value under excess capacity virtually mandates paying bonuses during layoffs. In addition, concentrating incentive rewards at the top management level can be economically justified in GD's situation, since the decision to downsize is made and implemented exclusively by top management and can be accomplished without "buy-in" and meaningful incentives for rank-and-file employees. But the criticisms of Gain/Sharing were largely political rather than economic: GD's management was accused of being "insensitive to outside perceptions"²³ by not suffering along with its workers.

Some critics noted that the high payments to GD executives negatively affected employee morale: GD employees demonstrated at GD's San Diego plant, for example, carrying placards that read, "No Bogus Bonus for Bill." We speculate that declining morale among the rank-and-file employees had more to do with bleak long-term employment prospects in the defense industry than with Anders' pay: Employee morale in growing firms (such as Disney) does not appear to be affected by high top-management pay, and we suspect morale would have suffered at GD even if Anders worked for free.

As an interesting contrast to the GD situation, DeAngelo and DeAngelo (1991) find that labor concessions in the steel industry were routinely coupled with cuts in top management's cash compensation: management pay is significantly lower during years with union negotiations than in years without negotiations. The authors argue that the managerial pay cuts are implemented as "...symbolic sacrifices that encourage all stakeholders to participate in the concessions needed to salvage the firm." An important difference between the domestic steel industry in the 1980s and the defense industry in the 1991 is that the steel industry was already in a crisis (generated in part by ignoring the implications of non unionized global competition developing over the course of the previous several decades) while GD was responding to early warning signs of a potential crisis in the future. Critics who argued that GD's management should have suffered along with its workers beg the question (we return to this in section 5): Could GD's ultimate performance have been obtained without the high-powered incentives that generated large bonuses amid layoffs?

3.6.5. The compensation committee's response

Even as the firm's stock price continued to climb, GD's board of directors was bombarded by criticism. The compensation committee (which met 15 times in 1991, compared

²³ Richard Ullman of Institutional Shareholder Services, quoted in *Aviation Week & Space Technology*, November 18, 1991, p. 58.

Table 2
Gain/Sharing awards for General Dynamics top executives

Executive	May award	October award	December awards	Total Gain/Sharing	Options at \$49.00
William A. Anders Chairman and CEO	\$800,000	\$1,600,000	\$550,000*	\$2,950,000	160,000
James R. Mellor President and COO	\$650,000	\$1,300,000	\$446,875	\$2,396,875	130,000
Harvey Kapnick Vice Chairman	\$123,750	\$1,200,000	\$412,500	\$1,736,250	120,000
Lester Crown [†] Executive VP	\$0	\$0	\$0	\$0	0
Number of executives included	19	25	25	25	25
Executive officers as a group	\$5,168,750	\$12,652,688	\$4,513,438	\$22,334,876	1,313,000

* Since the increase at this time to \$49 represented 34.375% of the \$10 interval between \$45.5625 and \$55.5625, Anders' received a final Gain/Sharing bonus of \$550,000 (or 34.375% of twice his \$800,000 base salary).

† Mr. Crown elected not to participate in the Gain/Sharing Plan.

Source: GD Special Meeting Proxy Statement, December 6, 1991.

to only six times during 1990) was keenly aware of the negative reaction to the company's compensation policies. Moreover, given Anders' public intention to "return excess cash" to shareholders, the committee was concerned that future announcements of special distributions might cause stock prices to jump past another Gain/Sharing hurdle, further fueling the media criticism.

The compensation committee settled on a revised plan at a meeting on December 3, at which point the stock price was \$49. Shareholders approved the plan at a special meeting on January 15, 1992. Under the new plan, executives received final Gain/Sharing bonuses for the increase in share value between the second bonus payout in October and \$49 (the stock price on December 3). As shown in table 2, the 25 participating executives received final bonuses of \$4.5 million, bringing the total payments under the plan to \$22.3 million. In addition, the executives received stock options with exercise prices of \$49 in lieu of the Gain/Sharing Plan. The numbers of options were chosen to provide a gain upon exercise equivalent to the bonus each participant would have received had the Gain/Sharing Plan remained in effect. For example, Anders received 160,000 options. A \$10 increase in stock price would thus equate to a \$1.6 million increase in the exercise value of the option, twice Anders' annual salary. Finally, the executives received the restricted stock awards promised in February, but not scheduled to be conveyed until 1992 and 1993 (see table 1).

During the period in which the Gain/Sharing Plan was in effect (February 15- December 3), GD's stock price rose from \$25.5625 to \$49 per share, a wealth gain of \$1,022 million for shareholders. Based on the methodology described in table 9, about \$99 million of this gain reflects general market stock-price movements, \$35 million reflects industry-specific movements, and -\$15 million reflects world events and announcements related to GD that cannot be directly attributed to GD's new strategy and incentives.²⁴ Approximately \$614 million of the increase can be directly traced to announcements related to GD's strategic initiatives, and much of the "unexplained" \$289 million is plausibly linked indirectly with GD's initiatives. The total Gain/Sharing payouts of \$22.3 million to GD's executives amounts to 2.18% of the total shareholder gain, and between 2.5% and 3.6% of the gain attributable to the action's of GD's management.

The vehement public reaction to GD's Gain/Sharing bonuses, coupled with the board's response to replace Gain/Sharing with conventional stock options, are evidence of the importance of political forces in shaping compensation policies (Jensen and Murphy, 1990). The GD experience is also consistent with the hypothesis that gains from options are politically more acceptable than gains paid in cash. In particular, criticism regarding GD's compensation policies largely evaporated after GD replaced Gain/Sharing with conventional stock options, even though the payouts under the two plans were virtually identical (apart from the discontinuities imbedded in Gain/Sharing). Moreover, while Anders was heavily criticized for his Gain/Sharing bonuses of \$2.95 million (accounting for approximately .3% of the total gain to shareholders), the \$8.6 million appreciation of his restricted stock and options over the same time period escaped media attention. Similarly, the media focused on the \$22.3 million Gain/Sharing payments to GD's top management team, but ignored the \$37 million appreciation the team realized on their options and restricted stock over the same ten months.²⁵ The gains that top managers and the Crown family earned on their individual stockholdings also eluded notice, even though these gains were large relative to the Gain/Sharing payouts and were also associated with layoffs and downsizing.

3.7. Anders articulates and implements GD's strategy

Although Anders had embraced the corporate objective of creating shareholder value upon his January 1991 appointment, the corporate strategy he developed to achieve this

²⁴ Table 9 provides estimates for the entire 1991 calendar year, while the data in this paragraph refer only to the period from February 15 to December 3, 1991.

²⁵ Calculations based on options and current and promised restricted stock in table 1 plus restricted stock held prior to February 1991, including 30,326 shares for Anders and 110,620 shares for all other top executives.

objective evolved during 1991 and 1992. An early indicator of the strategy—his pledge to not pursue diversification into non defense businesses—was revealed at the September 1991 Morgan Stanley conference. Three weeks later, on October 16, GD announced that its largest non defense subsidiary, Cessna Aircraft, was for sale. Later that month, in GD's third-quarter report to shareholders, Anders announced that GD was studying all of its non defense operations to determine if they should be separated from the company.

By the end of 1991, Anders was publicly urging the industry to both downsize and consolidate its businesses in order to “rationalize excess capacity.” He argued that only the top one or two contractors in a particular segment could survive the coming shake-out in defense. Anders stressed that no one should invest and grow in the defense industry (with the exception of a few market niches); only the strongest competitors should maintain investments; and that most should be managing for cash and taking money out of the defense segment. Some should simply exit the industry.²⁶

In May 1992, Anders announced GD's strategy within its defense businesses. Anders said GD would remain in businesses only where it could be #1 or #2 in the market, and only if it could achieve “critical mass” with production large enough to justify dedicated factories. Anders announced that GD was prepared to buy businesses from, or sell businesses to, other parties in order to meet these “market leadership” and “critical mass” criteria. He identified four businesses within GD's core defense capabilities that passed these two screens—military aircraft, nuclear submarines, land systems (tanks), and space systems—and announced a formal “plan of contraction” in which the company would seek to sell units outside these four core defense businesses.

Anders discussed the rationale for this strategy and the reasoning behind the definition of the core segments:

When we assessed our businesses, we didn't look at them in terms of core businesses, we looked at our *core competencies*. Our core competence is in heavy-weight defense platforms.

We also looked at efficiencies. The first test was whether we were or could be #1 or #2 in a market. The second test was whether each of these businesses could pass the *critical mass test*. Could we justify dedicated factories for these products based on the scale we could achieve? The tank plant makes sense, subs make it and tactical aircraft make it. Missiles did not make it. They are not our core competence; they are a commodity business where supply far exceeds demand.

The difference between GD and the rest of the defense industry is that we wanted to sell non-defense businesses. And we were willing to fix *any* business by buying, selling or merging. We were dedicated to shareholders and building franchises. Too many executives at other defense contractors are fixated on *bigger is better*. But, when the industry has excess capacity, the focus on continued growth just doesn't work.

²⁶ See, for example, William A. Anders, “Rationalizing America's Defense Industry,” keynote address at the 12th annual Defense Week conference, October 30, 1991.

Table 3
General Dynamics divisions sold in 1991-1993

Disposition Date	Division	Buyer	Sale price (\$ millions)	1991 revenues (\$ millions) ^a
11/91	Data Systems	CSC	\$ 184	\$ 12 ^b
2/92	Cessna	Textron	600	797
8/92	Missiles	Hughes Aircraft	450	1,385
11/92	Electronics	Carlyle Group	52	218
3/93	Military Aircraft	Lockheed	1,525	2,719
12/93	Material Services ^c	n/a	46	n/a
12/93	Space Systems	Martin Marietta	209	363
Total:			\$3,066	\$5,494

^aTotal 1991 GD Revenues were \$9,548 million.

^bFigure is for 1990.

^cLime and brick operations only. 1991 revenues and buyer's identity not available.

Source: GD Annual Reports.

3.7.1. Sales of divisions and subsidiaries

Table 3 summarizes GD's sales of divisions between November 1991 and December 1993. GD sold the Data Systems Unit to Computer Sciences Corp. for \$184 million, the Cessna Aircraft subsidiary to Textron for \$600 million, its missile business to GM's Hughes Electronics subsidiary for \$450 million, its Electronics Division to Carlyle Group for \$52 million, and the lime and brick operations of its Material Services businesses for \$46 million.

To achieve the "critical mass" goal in GD's core businesses, Anders began discussions with Lockheed to acquire its tactical military aircraft business to pair with GD's Fort Worth Division. Lockheed rebuffed GD's overtures but agreed that consolidation was necessary, and in December 1992 offered to acquire GD's jet business for \$1.525 billion. The divestiture of one of the company's "core businesses" prompted speculation that GD was on a liquidation path.²⁷ In December 1993, GD agreed to sell another of its core businesses—Space Systems—to Martin Marietta for \$209 million. Anders stressed that although human and physical assets would ultimately have to leave the industry, GD's assets were in general being consolidated into other companies.²⁸

²⁷ Jeff Cole, "Lockheed to Buy General Dynamics Fighter Plane Unit," *Wall Street Journal*, December 10, 1992.

²⁸ Jeff Cole, "Swords into Shares: General Dynamics Contemplates Selling Its Remaining Units," *Wall Street Journal*, November 3, 1992.

Table 4
General Dynamics work force reductions by business segment, 1991-1993

Business segment	1990 employment	Employment reductions through layoffs and attrition	Units sold: Employment at disposition	Units retained: 1993 employment
Core defense				
Military aircraft	28,400	7,200	21,200	0
Nuclear submarines	22,500	5,500		17,000
Tanks	7,200	2,200		5,000
Space systems ^a	5,200	1,500	3,700	0
Total core defense	63,300	16,400	24,900	22,000
Non core defense	14,300	3,000	11,300	0
Non defense^b	19,900	7,400	7,900	4,600
Corporate staff	650	450		200
TOTAL	98,150	27,250	44,100	26,800

^a Employees in the space systems division are restated as leaving in 1993, although the sale to Martin Marietta was not completed until April 1994.

^b Classified as Discontinued Operations.

Source: Annual reports and company estimates.

After the dispositions, GD is a much smaller and more-focused company with two core divisions (submarines, tanks). In 1993, GD reported sales from continuing operations of \$3.2 billion, a 66% decline from its \$9.5 billion sales two years earlier.

3.7.2. *Employment.*

Along with the sale of business units, GD continued to reduce its work force in its remaining units. As shown in table 4, total employment at year-end 1993 stood at 26,800, a 73% reduction from the 98,150 employees at GD when Anders was appointed in 1991. The exhibit shows that 28% of GD's 1990 workforce left through attrition or were laid off (most occurring in 1991), while 45% were active employees when their business units were sold (mostly in 1992 and 1993). The company has not estimated the number of employees laid off subsequent to these sales. The corporate headquarters staff fell from 650 to about 200. In order to reduce the overhead burden on the remaining businesses, the company announced plans to cut the corporate staff to just 50 by the end of 1994.

The company offered basic outplacement services for its discharged employees, including counseling, help with resumes, and compiling and posting job opportunities. Most of GD's discharged employees received three to six months salary upon dismissal (pursuant to labor agreements), and some corporate staff employees who had been recently relocated received

Table 5
Simplified statement of sources and uses of cash for General Dynamics, 1991-1993

Sources of cash	\$ Billions	Uses of cash	\$ Billions
Cash balance (1/91)	\$0.1	Debt retired	\$0.6
From operations	1.6	Dividends	0.2
From dispositions	3.0	Share repurchase (6/92)	1.0
Transactions costs and taxes	(0.7)	Special distributions	1.6
Total	\$4.0	Sub Total	\$3.4
		Cash balance (12/93)	\$0.6

additional compensation. Apart from offering limited computer tutoring at some locations, GD offered no formal training programs for its discharged employees.

3.7.3. Shareholders and shareholders' distributions.

As shown in table 5, GD's cash balance (before distributions) grew from \$100 million in January 1991 to over \$4 billion by the end of 1993. GD used its cash balance to:

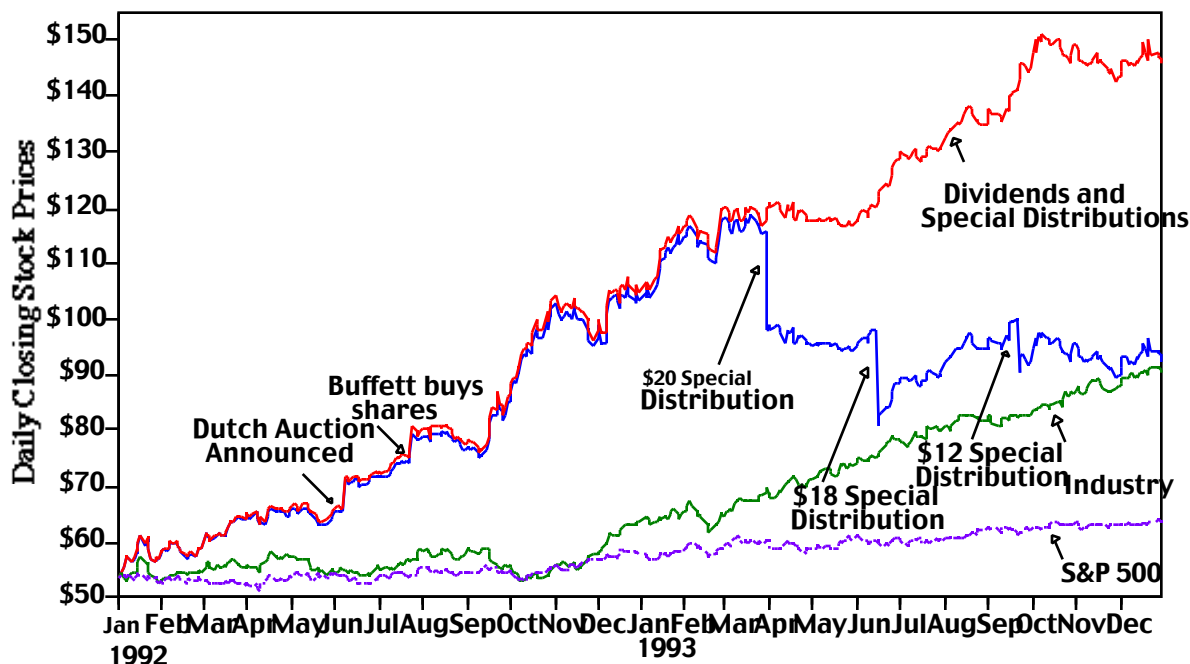
- Retire approximately 94% (\$575 million) of the company's debt, bringing GD's total debt to just \$38 million by December 1993;
- increase annual dividends from \$1 per share to \$1.60 in March 1992 and to \$2.40 in October 1993; in March 1994, GD increased its annual dividend to \$2.80 (prior to a 2:1 stock split);
- repurchase over 13.2 million shares for \$960 million (at an average of \$72.75 per share) through a Dutch auction in June 1992;
- return \$50 per share to shareholders in 1993 through special distributions in March (\$20/share), June (\$18/share), and October (\$12/share).

By December 1993 the company had returned \$3.4 billion to shareholders and debtholders, and had a remaining cash balance of nearly \$600 million (approximately six times its cash balance on January 1, 1991).

The composition of GD's shareholders changed substantially in the summer of 1992. During the course of the Dutch auction in June, the Crown family tendered almost 4.9 million shares, reducing their stake in GD from 22% to 14.3%. Employees who held shares through GD's SIP reduced their aggregate holdings from 14.7% to about 10% during the June auction. On July 24, investor Warren Buffett of Berkshire Hathaway announced the purchase of 4.35 million shares for about \$73/share. He amassed a 15% stake in GD, thus surpassing the Crown family as GD's largest shareholder. In a show of confidence in GD's management, he

Fig. 3

Stock-price performance of General Dynamics, 1992-1993



Source: Daily stock prices from Dow Jones News Retrieval and Compustat. GD-related events from company press releases, analyst reports, and the *Wall Street Journal*. Industry and S&P 500 prices are determined by appreciating GD's January 1, 1992 price by the cumulative returns on the industry and S&P 500 portfolios.

gave the company his proxy to vote his shares "...as long as Mr. Anders remains as chief executive officer of General Dynamics."²⁹

As shown in fig. 3, GD's stock price rose from \$55 to over \$92 between January 1992 and December 1993—even after \$3.25/share in dividends and \$50/share in special distributions. The market capitalization of GD grew from \$1.05 billion in January 1991 to \$2.87 billion in December 1993, during which time shareholders received \$154 million in dividends, \$1.55 billion in special distributions, and \$960 million through the Dutch auction. Thus, ignoring reinvestment of the proceeds from dividends and other distributions, shareholders gained almost \$4.5 billion from 1991 through 1993, representing a three-year return of 426%. Individual shareholders not participating in the repurchase and reinvesting dividends in GD stock realized a return of 553%.

The remarkable success of GD's strategy silenced many critics. For example, in October 1992, Prudential Bache fired aerospace analyst (and GD critic) Paul Nisbet, citing poor stock-

²⁹ "Business Brief: Warren Buffett Gives General Dynamics a Proxy to Vote Berkshire's 15% stake," *Wall Street Journal*, September 18, 1992. In May 1993, Buffet revised his grant of proxy to last "as long as Mr. Anders remains as *chairman* of General Dynamics."

picking performance. In early 1991, Nisbet urged investors to sell their GD stock (priced at about \$30), arguing that the stock was overvalued. After providing 22 “sell” recommendations, Nisbet went to a “hold” recommendation in July 1992, after the price soared past \$70 and Warren Buffet bought his 15% stake.³⁰ That same month, pay-critic Graef Crystal admitted in his monthly newsletter, “...if we had spent less time criticizing [Anders’] pay package and more time increasing our investment in GD [shares], we would have been a lot better off financially.”³¹

³⁰ Jeff Cole, “Prudential’s Nisbet, Aerospace Analyst, Says He Was Fired,” *Wall Street Journal*, November 5, 1992.

³¹ *The Crystal Report on Executive Compensation*, Volume 4, Number 8, October 1992

Table 6
Distribution of value gain at General Dynamics, 1991-1993 (\$ millions)

	Gain/ Sharing	Stock ^b	Options ^c	Total	Percent of total gain
CEO William Anders	\$ 3	\$ 15	\$ 36	\$ 54	1.1%
25 top executives (exc. Anders)	19	40	199	258	5.3%
1,300 lower-level executives	0	64	80	144	3.0%
48,000 SIP participants ^a		450		450	9.3%
Subtotal for GD employees	\$ 22	\$ 569	\$ 315	\$ 906	18.7%
Crown family		743		743	15.3%
Warren Buffett		283		283	5.8%
Other shareholders		2,932		2,932	60.2%
Total	\$ 22	\$ 4,527	\$ 315	\$ 4,864^d	100.0%

^a GD Stock Investment Plan (SIP). Includes participation of managers and executives.

^b Stock for GD employees includes appreciation on restricted stock, on shares retained after exercising options, and on shares purchased through the SIP, but excludes appreciation on stock purchased by employees in private transactions.

^c Options include amounts realized from exercising options plus the December 1993 exercisable value of unexercised options. Exercise data are available only for the top five executives. In December 1992, these five executives exercised all options granted in February 1991 at \$103.5625, and retained 57% of the shares. In estimating gains to other employees, we assume that all February 1991 options were exercised in December 1991, and that 57% of all exercised options were retained.

^d Includes the \$4,486 million gain to shareholders (including SIP participants) plus \$22 million Gain/Sharing payments, \$315 million payouts from options, and \$41 in special distributions paid on restricted stock.

Table 6 shows how the value gain was distributed among executives, employees, and shareholders. Anders received \$54 million through Gain/Sharing and appreciation on his restricted stock and options, representing about 1.1% of the total gain to shareholders. The other members of Anders' top management team realized \$258 million (approximately \$11 million each, or 5.3% of the total gain), while 1,300 lower-level executives received \$144 million (approximately \$111,000 each). Employee participants in the SIP realized more than \$450 million (approximately \$10,000 per participant) over the 1991-1993 period, or about 10% of the total gain. The Crown family—despite selling a large part of their GD stake—gained \$743 million from their GD investment from 1991 to 1993, while Buffet's stake—held for just 17 months—increased in value by \$283 million.

3.8. Anders resigns as CEO

In March 1993, in addition to announcing its first special distribution, GD announced the resignation of three of its top executives—Chairman and CEO William A. Anders, Vice Chairman Harvey Kapnick, and Executive Vice President Lester Crown. “We have basically done the major part of the turnaround job for which this team was assembled,” explained

Anders.³² The three executives would remain on GD's Board of Directors, and Anders would continue to serve as a non employee chairman of the board. James Mellor was named to succeed Anders as CEO. In March 1994, Anders resigned from the board, and Mellor assumed the additional role of chairman.

4. Strategies, incentives, and performance of other defense contractors

Having analyzed in detail GD's strategy, incentives, and performance, we now briefly summarize the experience of other defense contractors subsequent to the end of the Cold War. This industry analysis is relevant to our study of GD for several reasons: First, supporting the hypothesis that GD's actions were driven, in part, by its new management team and incentives, we establish that GD led, rather than followed, the industry in responding to anticipated cuts in defense expenditures. Second, we offer circumstantial evidence that Anders set the strategic objective for the industry: By 1993, most defense firms were adopting the strategy Anders outlined in industry speeches in late 1991 (see section 3.7, above). Third, we show that Anders had significantly more stock-based financial incentives than the average firm in the industry or the S&P 500. Finally, we show that the industry's ultimate consolidation, which was facilitated by GD, moved resources out of the industry and generated substantial shareholder wealth. The industry return from 1991-1993 (even excluding GD) more than doubled the return on the S&P 500, illustrating that opportunities to create wealth exist even in declining industries with few growth opportunities.

4.1. Strategic alternatives and choices of other contractors

Table 7 summarizes the strategies selected by GD and eight other defense contractors from 1990 through 1993, based on an analysis of quantitative financial data as well as our qualitative interpretation of annual reports, press releases, and news articles. The table includes the nine largest domestic defense contractors (ranked by cumulative 1989-1992 defense contracts). Exceptions are General Electric and Boeing, excluded because their defense operations account for less than 10% of total firm revenues. Some of the strategic options adopted by these firms include: Acquisitions to achieve critical mass; diversification into non defense areas, or converting defense operations to commercial products and services; globalization, i.e., finding international markets for defense operations; downsizing and consolidation; and exit (Lundquist, 1992; Minnich, 1993).

³² Jeff Cole, "Three Officers to Quit General Dynamics Corp.: End of Turnaround Plan Brings a Cash Payout, Cuts at Headquarters," *Wall Street Journal*, March 19, 1993.

Acquisitions to achieve critical mass. Five of the eight defense contractors in table 7 adopted Anders' critical mass criteria, and sought to achieve critical mass in production through acquisitions. GM Hughes acquired GD's missile division for \$450 million in 1992, and Lockheed acquired GD's aircraft division for \$1.5 billion in 1993. Martin Marietta acquired GE Aerospace for \$3 billion in 1992 and GD's Space Systems for \$209 million in 1994. Northrop purchased LTV's aircraft division for \$225 million in 1992, and won a bidding war with Martin Marietta to acquire Grumman for \$2.17 billion in 1994. Although not included in table 7, Loral acquired Ford Aerospace for \$715 million in 1990, LTV's missile business for \$240 million in 1992, and IBM's Federal Systems division for \$1.5 billion in 1994. Also in 1994, Lockheed and Martin Marietta agreed to a merger via a stock swap that will create the U.S.' largest defense contractor and lead to further consolidation in the industry. By merging, acquiring and consolidating businesses, these defense contractors have lowered overhead costs and avoided duplication of research and development expenses (Lundquist, 1992). In addition, these acquisitions, financed largely with cash, have created value by transferring over \$10 billion from the industry to target-firm shareholders who can reinvest in more productive sectors (Jensen, 1983).

Diversification and commercialization. A 1992 survey of 148 defense companies sponsored by a defense/aerospace consulting firm found that more than half of the respondents report past attempts to "commercialize" (i.e., applying defense technologies to commercial products) and more than three-quarters predict future commercialization.³³ For example, Hughes is applying its satellite technology in a commercial venture called satellite direct TV, designed to compete

³³ Wartzman, Rick, "Peace Initiative: Lockheed Navigates the Tricky Transition to More Civilian Work," *Wall Street Journal*, Feb. 10, 1992.

directly with cable television. Lockheed is pursuing commercial satellite and satellite launch customers, and is converting its defense systems businesses into systems for collecting child support payments and traffic tickets, and bar coding applications for the postal service. Other firms are adopting more traditional diversification strategies: Raytheon, for example, diversified into corporate jets by acquiring British Aerospace's business-jet unit. Martin Marietta CEO Norman Augustine, however, cautioned his industry counterparts about wandering too far from their areas of expertise:

Our industry's record at defense conversion is unblemished by success. Why is it rocket scientists can't sell toothpaste? Because we don't know the market, or how to research, or how to market the product. Other than that, we're in good shape.³⁴

Globalization. A number of firms are retaining a defense focus, attempting to bolster sales through globalization, selling U.S. built weapons abroad. This strategy is unlikely to yield dramatic growth, since the demand for weapons is declining world-wide and many foreign countries have their own national producers who are also faced with excess capacity (Lundquist, 1992). Nevertheless, augmenting domestic sales with foreign contracts can help to build critical mass in businesses with waning support from the U.S. government. Raytheon, one of the few defense contractors that is successfully pursuing a globalization strategy, hopes to achieve 40% of military sales outside of the U.S., principally on sales of its Patriot missile in the Mideast.

Downsizing, consolidation and exit. Table 7 shows that while most contractors adopted a combination of strategies, all adopted some form of downsizing or consolidation to reduce excess capacity. However, while a few contractors (including GM Hughes, Grumman, and McDonnell Douglas) have divested unprofitable non core businesses where they had little chance of building strategically competitive positions, only General Electric (not included in table 7) followed GD in exiting key segments of the defense industry. Interestingly, it was General Electric (where Anders held his first general management position) that pioneered the "#1 or #2" criterion as a strategic assessment for the composition of its portfolio of business units.

Table 7 reports the ratio of capital expenditures to depreciation within the defense segments of major defense contractors from 1989 through 1992. Ratios exceeding 100% indicate that firms are investing more than is required to replace depreciating assets, while ratios less than 100% indicate that firms are not fully replacing depreciating assets. The table shows that a composite (weighted average) ratio among eight key contractors fell from 108% in 1989 to just 79% in 1992. However, the table shows that GD cut its capital spending faster

³⁴ "Still Waiting for the Bang," *The Economist*, Oct. 2, 1993.

and deeper than other defense contractors: GD's ratio of capital expenditures to depreciation approximated the industry average in 1989 and 1990, but plummeted to just 17.9% and 16.3% in 1991 and 1992, respectively. Table 7 also shows that total employment within the defense/aerospace segments of these same contractors fell by 13.6% from 1990 to 1992. Meanwhile, GD reduced its employment by 63.7% over the same period through layoffs, sell offs and attrition (see also table 4).

Goyal, Lehn, and Racic (1993) also analyze investment policies in the defense industry. They report evidence that defense contractors began transferring resources from the industry as early as 1989-1990 through increased leverage, dividends, and share repurchases. Our complementary evidence suggests that although other contractors also espoused and eventually adopted consolidation and downsizing, GD's response in moving resources out of the industry was quicker and more dramatic. To draw an analogy: While other defense contractors engaged in a high-stakes game of musical chairs—hoping to be seated when the music stopped—GD pursued a strategy of offering its chair to the highest bidder.

4.2. Incentives and performance in the defense industry

Table 8 compares Anders' stock-based incentives to those of CEOs in other major defense contractors and in the S&P 500, using data from corporate proxy statements covering the 1992 fiscal year.³⁵ Financial incentives to create value come predominantly from stock options, restricted stock, and stock ownership (Jensen and Murphy, 1990; Murphy, 1993). Cash compensation plans explicitly based on stock prices—such as GD's Gain/Sharing Plan which was ultimately converted to stock options—are unusual. Therefore, we focus on these three components of incentives and ignore incentives associated with salaries, bonuses, and other cash plans. We define "incentives" as the fraction of the shareholder gain "paid" to the CEO through appreciation of his stock and option holdings.

Table 8 shows that Anders held stock options on 1.39% of GD's outstanding shares (including the options granted when Gain/Sharing was discontinued), substantially more than the average holdings in the industry (.29%) or the S&P 500 (.20). In addition, Anders held restricted stock on .32% of GD's shares, compared to industry and market averages of .05% and .03%, respectively. Together—assuming the options are sufficiently in-the-money—these two components imply that Anders' receives approximately 1.7% of the gains to GD shareholders, between five and seven times the average percentage in the industry (.34%) and market (.23%), respectively. [Anders' estimated incentives of 1.7% are higher than the 1.1%

³⁵ Proxy data were unavailable for 74 S&P 500 companies.

reported in table 6 because Anders exercised and sold 150,000 shares in December 1992. The 1.7% represents his marginal incentives at the end of 1992 (prior to the exercise) rather than the “average” incentives over the 1991-1993 period.] As a new CEO, Anders held substantially less stock than the average CEO in the industry and market; these shares provide incentives even though they are not controlled by the compensation committee. Anders’ overall incentives (including stock owned) are about three times the average incentives for CEOs in the industry and twice the average incentives for CEOs in the market.

Table 8
Stock-based incentives and shareholder returns in the defense industry and the S&P 500

Company	Percentage of outstanding shares held by CEO, fiscal 1992				Rate of return realized by shareholders (dividends reinvested)				
	Stock options	Restricted stock	Stock owned	Total	1987-1990	1991	1992	1993	1991-1993
GM Hughes ^a	0.00%	0.00%	0.02%	0.02%	0%	-13%	80%	55%	143%
Grumman	0.24	0.06	0.12	0.42	-2	-5	47	66	131
Lockheed	0.33	0.00	0.02	0.35	-21	40	31	25	130
Martin Marietta	0.35	0.05	0.02	0.42	27	39	20	31	118
McDonnell Douglas	0.00	0.00	3.34	3.34	-35	93	-32	126	197
Northrop	1.05	0.04	0.68	1.77	-46	59	36	14	147
Raytheon	0.08	0.12	0.03	0.23	18	22	27	31	103
United Technologies	0.48	0.05	0.05	0.63	20	18	-8	33	44
<i>Industry average</i>	<i>0.29%</i>	<i>0.05%</i>	<i>0.31%</i>	<i>0.61%</i>	<i>11%</i>	<i>29%</i>	<i>16%</i>	<i>41%</i>	<i>110%</i>
General Dynamics ^b	1.39%	0.32%	0.05%	1.76%	-59%	118%	97%	48%	537%
S&P 500	0.20%	0.03%	0.75%	0.98%	56%	30%	8%	10%	55%

Industry and S&P 500 averages are value-weighted. Weights for industry performance are 1/1/91 market capitalizations. Data on stock-based incentives from fiscal 1992 proxy statements; proxy data were available for 426 of the S&P 500 companies.

^aIncentive data reflects GM's CEO's holdings of GM Hughes stock; ownership data for the head of GM's Hughes subsidiary are not available.

^bAnders' stock-based incentives are calculated before his December 1992 option exercise. They reflect 431,359 stock options, 15,500 purchased shares, and 100,700 restricted shares (including 30,940 shares granted in lieu of benefits he would have received at Textron; these shares were held in a GD deferred account until late 1992, when Anders received the value of the shares in cash). Anders' incentives from Gain/Sharing—discontinued in December 1991—are not included, but the incentives from the options that replaced Gain/Sharing are included.

We also compared the 1992 incentives for defense-firm CEOs to incentives four years earlier, based on 1989 proxy statements. Incentives for GD's CEO (Anders in 1992, Stanley Pace in 1988) increased 1.47% from .29% to 1.76%. In contrast, the change in incentives in the other eight firms ranged from -1.07% to .29%, with a median change of .1%. Although the estimates of 1988 and 1992 incentives are not strictly comparable due to changes in CEOs and reporting requirements, our results suggest that measured relative to changes in other defense firms, CEO incentives at GD increased substantially from 1988 to 1992.³⁶

Although Anders' stock-based incentives of 1.7% seem small in absolute value, it is worth noting that his 25-member top management team have stock-based incentives exceeding 6% (see table 6). In addition, his pay-related incentives (options and restricted stock) are

³⁶ In particular, firms did not disclose outstanding stock options in 1988. We estimate 1988 outstanding options as the sum of 1988 grants and options exercisable within 60 days. In addition, firms did not uniformly report restricted shareholdings in 1988.

exceeded by less than 4% of the S&P 500, and his total incentives (including stock) are exceeded by only 15% of the S&P 500. The only CEO in the industry with more stock-based incentives is McDonnell Douglas' founding-family-member John McDonnell. Although McDonnell has no options or restricted stock, his family stock holdings account for over 3% of the outstanding stock. While his company was slow to respond to the pending industry decline, its stock price more than doubled in 1993 after it closed several fabrication plants, reduced capital expenditures by more than half, and cut employment 18% to just 72,000 by the end of 1993.

The final columns of table 8 show the shareholder returns (with reinvested dividends) earned by GD, other major defense contractors, and the S&P 500 from January 1987 through December 1993. GD shareholders received lower returns than the industry and market prior to Anders' appointment as CEO, and earned substantially higher returns than the industry and market in 1991 and 1992. The defense market rebounded in 1993, earning an average 41% compared to the 10% return on the S&P 500, but still below GD's 48% return.

GD contributed to the 1993 wealth creation among other defense firms by facilitating a consolidation of the industry and leading the wave of defense-related layoffs and acquisitions that had returned over \$10 billion to shareholders by early 1994. Focusing on core businesses, shedding underperforming assets, closing facilities, consolidating divisions, reducing debt, and cutting capital expenditures and employment has substantially strengthened the competitive position of many contractors as they have reduced both financial and operating leverage.

5. Sources of GD's value gain

Table 9 decomposes the sources of the GD's \$4.486 billion value gain from 1991-1993. It estimates the fraction of the value gain that plausibly reflects GD's new management team and incentives, and the fraction that is best explained by market and industry stock-price movements, and by events affecting GD's stock price that are unrelated to the implementation of GD's strategy. The estimates in the table are based on the S&P 500 Index, performance of the industry in excess of the S&P 500, and the industry-adjusted three-day announcement returns of events affecting GD's stock price (as reported in appendix B).

Table 9
Sources of value gain at General Dynamics, 1991-1993 (\$ millions)

	1991	1992	1993	1991-1993
Beginning market value	\$ 1,052	\$ 2,253	\$ 3,204	\$ 1,052
Regular dividends	42	56	56	154
Special distributions, share repurchase	0	960	1,554	2,514
Ending value	2,253	3,204	2,870	2,870
<i>Change in value</i>	<i>\$ 1,243</i>	<i>\$ 1,967</i>	<i>\$ 1,276</i>	<i>\$ 4,486</i>
<i>Amount of value change attributed to exogenous factors:</i>				
General market movements ^a	\$ 420	\$ 228	\$ 308	\$ 956
Industry-specific movements ^a	8	300	768	1,076
Industry-adjusted response to announcements not related to GD's new strategy ^{b,c}	-128	149	0	21
<i>Value change from exogenous factors</i>	<i>\$ 300</i>	<i>\$ 677</i>	<i>\$ 1,076</i>	<i>\$ 2,053</i>
<i>Amount of value change attributed to GD's new strategy (industry-adjusted)^c</i>				
Earnings announcements	\$ -74	\$ 134	\$ 182	\$ 242
Cash distribution announcements ^d	0	258	351	609
Downsizing announcements ^e	18	225	23	266
Other strategy-related announcements ^f	671	534	0	1,205
<i>Value change from strategy</i>	<i>\$ 615</i>	<i>\$ 1,151</i>	<i>\$ 556</i>	<i>\$ 2,322</i>
<i>Unexplained change in value</i>	<i>\$ 328</i>	<i>\$ 139</i>	<i>\$ -356</i>	<i>\$ 111</i>

^aGeneral market movements are calculated daily as $V_{t-1}r_{mt}$, where V_{t-1} is GD's market value on day $t-1$, and r_{mt} is the return on the S&P 500 index on day t . Industry-specific movements are calculated daily as $V_{t-1}(r_{it}-r_{mt})$, where r_{it} is the value-weighted return on the eight defense firms in tables 7 and 8.

^bIncludes announcements of defense contracts, world events (such as the Gulf War and the Soviet Coup), and other announcements as designated in appendix B.

^cIndustry-adjusted responses (as reported in appendix B) are calculated as $V_{t-2}(R_t-R_{it})$, where R_t and R_{it} are the three-day returns surrounding each announcement for GD and the industry, respectively, and V_{t-2} is GD's market value two days prior to the announcement.

^dIncludes announcements related to dividends, share repurchases, and special distributions (including ex-dividend dates) as designated in appendix B.

^eIncludes announcements related to layoffs and sales of divisions as designated in appendix B.

^fIncludes responses to Gain/Sharing, Anders' speeches, analyst reports, and other announcements designated in appendix B.

Each event in appendix B includes a designation of exogenous, earnings, distributions, downsizing, or strategy. *Exogenous* events—such as the Gulf War, the Soviet Coup, awards (or cancellations) of GD contracts—are events not plausibly driven by GD's new management team and incentives. *Earnings* includes earnings announcements. *Distributions* includes events related to dividends, share repurchases, and special distributions (including ex-dividend dates). *Downsizing* includes announcements related to layoffs and sales of divisions. The final category, *Strategy*, includes events related to Gain/Sharing, Anders' speeches, analyst reports,

and other announcements directly related to GD's strategy. We consider that events related to earnings, distributions, downsizing, and strategy plausibly reflect GD's new management team and incentives.

Table 9 shows that \$956 million of GD's gain (21% of the total) can be explained by general market movements, while \$1.076 billion (24% of the total) can be explained by industry-specific movements. Exogenous events not directly linked to Anders' strategy account for \$21 million, bringing the total gain explained by market, industry, and exogenous factors to \$2.053 billion, or about 46% of the total gain to shareholders. Announcement returns related to earnings, distributions, downsizing, and strategy account for \$2.322 billion (or 52% of the total). Together, the market and industry adjustments and the announcement returns explain 98% (all but \$111 million) of the total gain to GD shareholders.

The \$2.3 billion estimate of value gain explained by Anders' strategy excludes the \$111 million "unexplained" component and the \$1.1 billion explained by industry-specific movements (in excess of the market). In estimating the fraction of GD's value gain plausibly driven by its management team and incentive structure, it seems appropriate to exclude exogenous factors affecting the entire industry. For example, if the 41% industry return in 1993 (see table 8) reflected increased demand for new weapons systems, it would be inappropriate to attribute that demand shift to actions taken by GD's managers. However, the stellar performance of the defense industry in 1992-1993 was not driven by an increase in weapons contracts, but by explicit managerial responses to declining demand, including mergers, consolidations, and downsizing. GD was an active player, not an innocent bystander, in this process, and both GD's and the industry's returns would plausibly have been lower without Anders' active participation. Therefore, depending on how the industry and unexplained components are interpreted, our estimates of the value gain attributable to GD's management and incentive structure range from \$2.3 billion to \$3.5 billion.

The evidence presented in this paper, including table 9, support the hypotheses that GD's remarkable shareholder performance was driven in large part by its top management team and its incentive structure. In the remainder of this section, we address three questions related to the sources and disposition of the value gain. First, was the value gain simply a transfer of wealth from (former) GD employees to shareholders? Second, rather than returning cash to shareholders, should GD have used its excess cash to diversify or to retrain workers? Finally, could GD's results have been achieved with fewer executive incentives?

5.1. *Did the value gain at General Dynamics come at the expense of GD workers?*

GD, with a January 1991 market capitalization of \$1 billion and less than \$1 billion in long-term debt, generated almost \$4.5 billion in wealth for shareholders in less than three years. The underlying theme in this study is that value was created as resources used in defense were diverted to more highly valued uses. The fact that the diversion was associated with large increases in stock prices suggests that the stock market expected that efficient resource allocation was unlikely. The fact that GD had a 1991 market value (including debt) of less than \$2 billion while having over \$10 billion in revenues, a \$23 billion backlog, over \$6 billion in assets, 98,000 employees, and annual capital and R&D spending in excess of \$700 million, is further evidence that the market expected GD to employ its resources inefficiently.

Fig. 1 suggests that the market began anticipating cuts in future defense spending as early as 1987: GD's shareholders realized a 59% *loss* from January 1987 through December 1990. Moreover, the industry (excluding GD but including the other firms in table 8) managed a meager cumulative 11% return over the same four years, far less than the 56% return on the S&P 500 from 1987-1990. The market evidently discounted the probability that the defense industry would respond efficiently to the changing defense market.

The increase in GD's value reflects, in part, the gain to society from diverting capital resources to more highly valued uses (e.g., GD's drastic cuts in capital expenditures). In addition, part of the increase in GD's value reflects the gain from diverting human resources to more highly valued uses, and part reflects a wealth transfer from employees to shareholders. Employees are worse off by the differences between their wages at GD and the wages in their next-best alternatives, while society is better off by the differences in their value at their next-best alternative and their value as defense workers at GD. To the extent that employees could earn a similar wage in the non defense sector, the increase in GD's value represents a dollar-for-dollar increase in societal wealth. To the extent that employees must accept much lower wages, the relevant issue is why they had originally been paid a premium to work in the competitive defense industry. Presumably, this premium reflected the specialized skills required for the industry, and also reflected a compensating differential for risky employment in an industry with historically variable demand. In addition, the premium reflects the wealth transfer from taxpayers to employees that occurred when defense contractors passed high labor costs directly to taxpayers under contracts awarded on a cost-plus basis. By shifting to fixed-price contracts in the late 1980s, Congress shifted the burden of overpaid employees from taxpayers to shareholders. The elimination of the subsidized overpayment to defense employees will harm affected employees, but generally benefit shareholders and society.

We have not attempted to separate quantitatively the portions of the increase in GD's shareholder wealth that reflect societal gains versus transfers from employees. It is worth stressing, however, that the fact that some of the gain reflects transfers does not imply that shareholders were expropriating wealth from defense workers who had "rights" to perpetual wage premiums. There is no evidence that GD had an implicit or explicit contractual obligation to continue paying rents to employees following the end of the Cold War. There is evidence, however, that the market expected the company to waste resources by paying workers high rents to continue producing products that society no longer valued.

5.2. Should General Dynamics have used its excess cash to diversify or retrain workers?

Although politicians, journalists, and labor leaders argued that GD should have retrained their defense-specific employees, Anders believed that retraining programs would be an inappropriate use of shareholder money:

I do not see that we have a special obligation to our employees. This is an issue of excess human capacity that had to leave the defense industry. We trained our people to have specific skills and paid for that training. Then we paid them for their skills. What are we to do when those skills are no longer required? We have a lot of very skilled welders at Electric Boat that earn about twice what they can earn on the outside where that level of skill is not required. We are not going to start to build bridges. That's not our business and not our obligation.

The loss of jobs at GD is actually better for America if we redeploy those assets appropriately. We have done more than any other defense contractor in creating new jobs by putting \$3.4 billion back into investments—by letting shareholders redeploy those resources in new industries for new products.

Academic proponents of company-sponsored retraining programs argue that such programs are part of the optimal implicit contract between employees and employers. It is difficult to disprove the existence of implicit contracts, since these contracts by definition are not written, but exist only in the minds of the employees and the employer. We argue, however, that rational employees would not expect a firm to honor this type of implicit contract in the event the firm downsizes or exits particular business lines. Implicit contracts are enforced through reputational concerns: Reneging on contracts with current workers makes it more costly to enter into similar contracts in the future. However, when the likelihood of future contracting is substantially reduced (or non-existent in the case of a full liquidation), enforcing the implicit contract becomes more difficult. Consequently, implicit promises by a firm to provide retraining coincidental to downsizing or liquidation are not credible. Employees who desire this type of employment insurance would not likely rely on implicit contracts, but would instead demand explicit contracts specifying employment guarantees, severance payments, and retraining programs in the event of liquidation. Although GD did

write (and honor) explicit contracts with some union workers and top managers, these contracts did not include retraining provisions.

The relevant question is not whether defense workers should be retrained, but who should provide the retraining. Retraining will have to occur, since the specific skills required in the defense industry are not readily transferable to other industries. The worker has the best information to determine how to retrain, and to choose the industrial sectors promising the best alternative employment opportunities. In contrast, the company has neither the information or the expertise to be an efficient provider of retraining for unemployed defense workers.

5.3. *Could General Dynamics' results have been achieved with fewer executive incentives?*

One of the more important issues raised by the GD case is whether the strategy it ultimately adopted could have been developed and implemented without the large *ex post* rewards to top managers. Anders, after all, was already paid an annual salary of \$800,000 to act in the interest of GD shareholders. Why did he need additional incentives to do what he was hired to do?

The strategies adopted by GD—including downsizing, restructuring, liquidation, and returning excess cash to shareholders—seem obvious, given the projected reductions in defense budgets associated with the end of the Cold War. However, despite ample evidence of a changing defense market available to all defense contractors, only GD followed the “obvious” strategy. While other contractors reduced their work forces to some degree, no one took the drastic actions that GD did in 1991 and 1992 to reduce capital expenditures and employment, and no other firm elected to convert their assets to cash and return financial resources to shareholders.

The new management team and new incentive programs were introduced simultaneously. It is therefore difficult to identify the relative importance of incentives versus the particular individuals in the team. It is worth noting, however, that Anders and the other top executives believe that the Gain/Sharing Plan and other plans linked to value creation were crucial elements of GD's ultimate success. Anders stresses the importance of creating the “partnership mentality” among top managers, who began to think like owners rather than hired hands. The decisions GD managers made were not easy, and the incentives had to be strong enough to attract and retain the right executives, ensure timely and comprehensive disclosure of critical information, and motivate the right decisions. Ultimately, the incentives had to be strong enough to make the executives willing to sacrifice their own jobs and positions. Several top GD executives (including Anders) have left the company, and many of those remaining

(including new CEO Mellor) have accepted substantial pay reductions to reflect the reduced complexity of the smaller corporation they now manage. Such voluntary turnover and pay cuts are unusual in U.S. corporations.

The argument that high-salaried managers should take actions that benefit shareholders—even without high-powered incentives—is at odds with the evidence in a growing number of corporate giants, including IBM, General Motors, Kodak, Westinghouse, and Sears. In these firms, as well as many others, creating value for shareholders means downsizing and moving human and physical capital out of the industry. Managers in these firms resisted major changes until the changes were forced upon them by market pressure; IBM, for example, brought in a new manager to make meaningful changes only after shareholders lost over \$50 billion in less than two years.

6. Conclusion

Jensen (1993) argues that rapid increases in technology, declines in regulation, growing worldwide capitalism, and globalization of trade have created massive excess capacity in many of the world's industries. GD's response to excess capacity in the defense industry has important implications for many firms across a wide range of industries facing similar economic pressures.

First, the GD case suggests the importance of stock-based compensation in firms characterized by excess capacity: GD downplayed accounting-based bonuses and focused on stock options, restricted stock, and other compensation plans tied to value creation. Second, GD's experience illustrates the large political costs associated with success when success means downsizing and layoffs, and also suggests that these costs can be mitigated by avoiding cash payments, relying instead on gains through ownership. Third, appropriate incentives must be coupled with the appropriate managers: Anders believes that his strategy could not have been implemented without the incentives, but the case facts also suggest that Anders' actions transcended his individual incentives. Finally, although declining industries with excess capacity offer relatively few opportunities for revenue growth, the GD case suggests that these industries may offer large potential opportunities for value creation.

Even though GD's situation is replicated in many firms and industries, its response and ultimate achievements are remarkable. Excess capacity necessitates downsizing and transferring resources to higher-valued uses. However, few managers have been able to accomplish the necessary resource redirection until their organizations faced crises in the product, factor, or capital markets. GD's board and top management team were remarkably

consistent in pursuing their objective of creating shareholder wealth in spite of enormous pressures from employees, unions, the media, and the government to do otherwise. Overall, GD stands out as the preeminent shareholder success story of the early 1990s, and may serve as a blueprint for compensation and strategy decisions in other industries with excess capacity.

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Appendix Table A
General Dynamics board of directors and stock ownership, February 15, 1991

Director	Restricted and unrestricted shares held ^a	Stock options held ^b
Current management		
William A. Anders Age 57, director since 1990 <i>Chairman and CEO</i>	106,586 ^c	271,359
Lester Crown Age 65, director since 1974 <i>Executive Vice President, Chairman of Material Service subsidiary</i>	See Crown family holdings below	60,412
James R. Mellor Age 60, director since 1981 <i>President and Chief Operating Officer</i>	76,469	133,613
Russell W. Meyer, Jr. Age 58, director since 1986 <i>Executive Vice President of the Corporation Chairman of Cessna Aircraft subsidiary</i>	15,071	0
Herbert F. Rogers Age 65, director since 1987 <i>Vice Chairman of the Corporation</i>	44,323	22,157
Former management		
David S. Lewis Age 73, director since 1970 <i>Former Chairman and Chief Executive Office</i>	53,450	0
Stanley C. Pace Age 70, director since 1985 <i>Former Chairman and Chief Executive Officer</i>	47,701	22,190
Crown family		
James S. Crown Age 37, director since 1987 <i>General Partner, Henry Crown and Company</i>	9,187,149 ^d	0
Charles H. Goodman Age 57, director since 1991 <i>Vice President, Henry Crown and Company Vice President, CC Industries, Inc.</i>		0
Non management		
Thomas G. Ayers* Age 76, director since 1980 <i>Former Chairman and CEO of Commonwealth Edison</i>	300	0
Frank C. Carlucci Age 60, director since 1991 <i>Vice Chairman, The Carlyle Group, Former Sec. of Defense</i>	1,050	0
Harvey Kapnick* Age 65, director since 1980 <i>President, Kapnick Investment Co.</i>	500	0
Allen E. Puckett* Age 71, director since 1987 <i>Chairman Emeritus of Hughes Aircraft Company</i>	1,000	0
Bernard W. Rogers Age 69, director since 1987 <i>Retired General, former Chief of Staff Former Supreme Allied Commander Europe, U.S. Army</i>	300	0
Elliot H. Stein* Age 72, director since 1978 <i>Chairman Emeritus of Stiefel Financial Corporation</i>	2,500	0
Cyrus R. Vance Age 74, director since 1987 <i>Chairman, Federal Reserve Bank of New York Former Secretary of State</i>	300	0

^a Includes restricted shares granted or promised on (or before) February 15, 1991.

^b Includes options granted (and exchanged) on February 15; all options listed have an exercise price of \$25.5625 per share.

^c Anders shares include 500 shares purchased before 1991, 10,000 shares purchased in February 1991, 30,326 shares of restricted stock granted in lieu of benefits he would have received at Textron (held in a deferred account), and 65,760 restricted shares granted or promised in February 1991.

^d Includes Lester Crown's 24,310 restricted shares. Many of the shares owned by Lester Crown, James S. Crown, and Charles Goodman are jointly owned through Crown family trusts. The total ownership by the Crown family amounts to approximately 22% of General Dynamics common stock.

* Member of compensation committee.

Source: GD 1991 Proxy Statement, March 28, 1991. There were 41,870,868 shares outstanding on 2/15/91.

