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The Financial
Crisis in Aerospace
and Defense
*Taking Advantage
of Economic Chaos*



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EXECUTIVE SUMMARY

The financial turmoil of 2008 has taken a heavy toll on the global economy. Although most aerospace and defense (A&D) companies are temporarily insulated by virtue of their large backlogs, they must nonetheless pay immediate attention to the momentous changes that are under way.

This is not your father's recession. The belt-tightening moves typically made in ordinary downturns will form but a small part of the leadership agenda appropriate for these times.

IMPLICATIONS OF THE RECESSION

There are four reasons this recession will be different than those that have come before:

- The investment community is placing a much lower value on high-risk endeavors than it has before. Few signs indicate that this will change any time soon. For an industry that is used to making big bets, this has significant implications for risk management and shareholder valuation.
- We are in a period of turbulence, and it is difficult to see when it might end. Therefore, flexibility is now more critical than in the past; frequent course corrections may be required. This may challenge the long-cycle decision-making culture of major A&D companies. It also places a premium on operational agility.
- Capital scarcity will be with us for a prolonged period. Many A&D

companies are flush with cash now, but the fact remains that shareholders will reward reductions in fixed assets and working capital.

- The intrinsic affordability of the industry's products is under great pressure, especially in relatively low-volume markets facing cyclical downturns. There is a chance that even modest volume declines, if not offset quickly by reductions in fixed costs, could lead to a vicious circle of increasing fully loaded direct labor rates, reduced competitiveness, and even lower volumes.

Experienced executives know that difficult times also create opportunity, both to exploit weaknesses in competitors and to use the urgent necessity of change to migrate enterprises to more competitive positions. With this in mind, we suggest executives in the A&D industry act quickly and decisively on three items.

UNDERSTANDING AND STRATEGICALLY MANAGING RISK

When the discount applied to risk and to high-risk endeavors increases as dramatically as it has recently, risk management can no longer remain the exclusive domain of program managers. It has become a corporate issue. CEOs and CFOs have to become adept at understanding and managing risk on individual large programs and at balancing that risk across the business portfolio. Otherwise they will find, as one of our clients did recently, that they are managing a portfolio with the risk profile of a derivatives trader and the expected returns of government T-bills. This is hardly a good place to be relative to the efficient risk/return frontier.

In recent years virtually every segment of the A&D industry has suffered calamitous difficulties in the execution of major programs. No segment—neither large commercial aircraft, nor military spacecraft, nor naval surface combatants—has been immune from expensive (and embarrassing) program failures. Many

analysts attribute these failures to management errors, lack of customer self-discipline, systems integration issues, or shortages of skilled labor. But although these factors play a role, they cannot explain why the problem is so widespread and so deep.

We believe this spate of failures has a systemic cause, namely, the increasing obsolescence of traditional approaches to program and risk management, given the evolving structure of the A&D industry. Legacy tools and approaches were developed in an era in which technically astute customers interacted primarily with a single, vertically integrated prime contractor around a discrete system. However, over the past decade, we've moved from vertically integrated suppliers to complex networks of industry consortia, often spanning continents. These consortia share a collective responsibility for ensuring effective cost, schedule, and risk management. Increasingly they oversee complex systems of systems.

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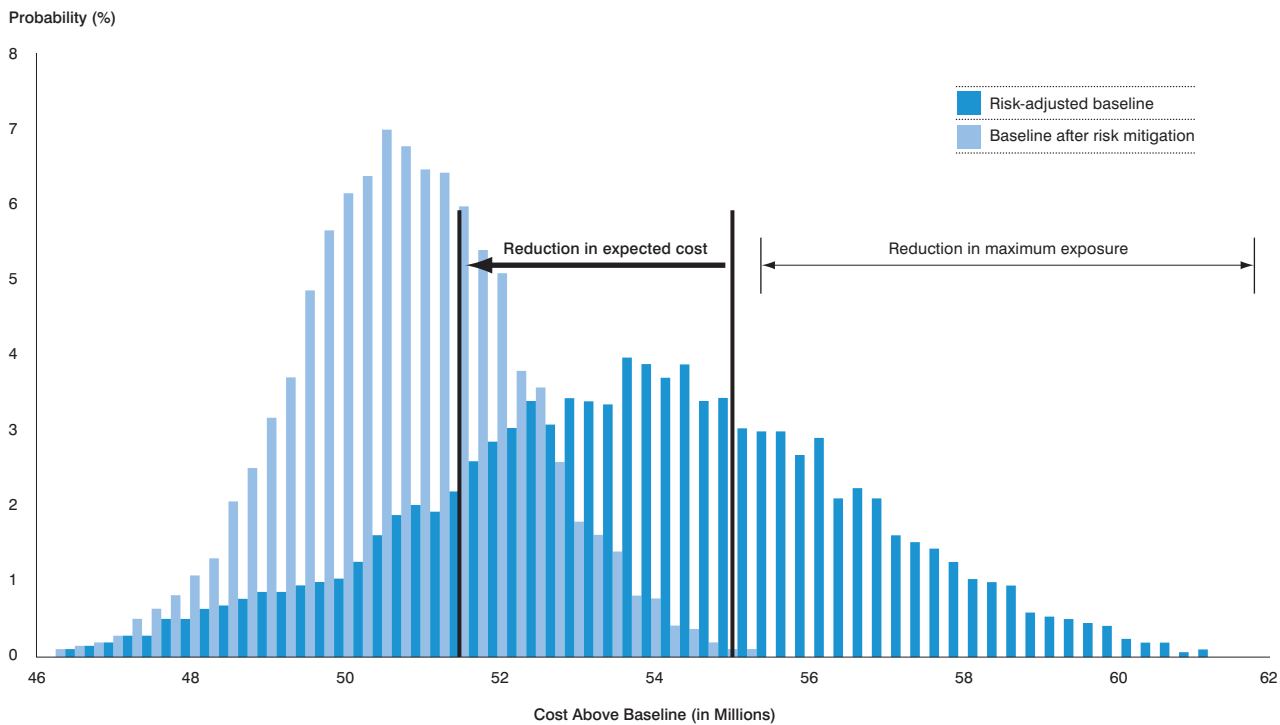
Conventional project-management tools and processes assume the presence of clear, unbiased, and easy exchanges of data on major integration issues and risks. Those conditions are unlikely to exist in the current environment, in which data needs to flow across different companies with different cultures, and where a teammate today could easily be a competitor tomorrow. The exchange of simple data on risks can now become the basis for prolonged contract disputes or competitive disadvantage. Companies have too few positive incentives to volunteer relevant risk data in a timely manner.

Fortunately, emerging new techniques can pierce the veil on complex program risks. Over the last five years, Booz & Company has developed an innovative approach to identifying, quantifying, prioritizing, and mitigating program risks within the aerospace and defense industry. Our RISC-IQ methodology has three innovative aspects we had rarely seen applied in A&D companies: (1) common, objective risk-scoring criteria that apply to all types of risk, whether technical or purely cost- or schedule-related; (2) a quantification approach that uses simulation to assess the correlation among risks; and (3) a mitigation analysis that selects those actions that minimize residual risk and

maximize program objectives. This is of unparalleled utility to program and line management (see Exhibit 1).

In addition, the RISC-IQ methodology provides an objective basis for assessing the underlying risks across a portfolio of programs. It allows CFOs to accurately model correctly the risk embedded in large multiyear programs within and across business units. This provides senior management with the information both to direct remediation efforts effectively and to set business units' financial goals in a manner commensurate with effective risk/return balance.

Exhibit 1
Example of Risk-Reduction Results from Application of RISC-IQ Methodology



Source: Booz & Company

AVOIDING THE A&D INDUSTRY “DEATH SPIRAL”

Had the downturn not come when it did, many segments of the A&D industry would already have been approaching cyclical market peaks over the next two to four years. The global crisis is accelerating the process. On the civil side, impressive backlogs are starting to be eroded by declining order rates and, in growing numbers, order cancellations. In defense markets, programs once seen as secure could soon be at risk, as governments seek sources of funds to offset heavy investments in distressed sectors of the economy at the same time tax revenues decline.

As volumes begin to fall, it is vital that producers (and their supply chains) be able to maintain unit cost levels and overall product affordabil-

ity. The difficulty, as we've often seen, is that indirect costs appear to be variable when volumes are rising and only become “sticky” or fixed during downturns. The result is a ratcheting up of overhead as the industry cycles through boom and bust.

In a worst-case scenario, the decline in production volumes is so pronounced, and the stickiness in indirect costs so severe, that the economic viability of a facility or business becomes questionable. The decline in volume leads to increases in overhead rates, which drives up unit costs further, which reduces affordability, which leads to further volume declines, and so on. We call this phenomenon the A&D industry

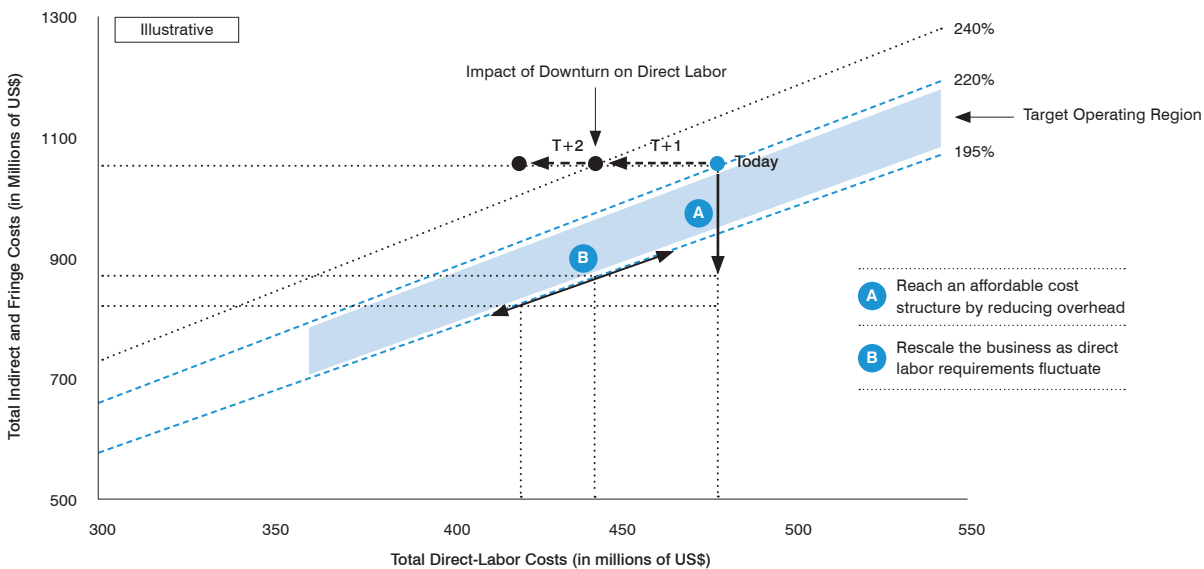
death spiral. In the defense industry, the danger of a death spiral has become particularly acute now, as customers' appetite for absorbing escalating program costs seems to have largely vanished.

Management often reacts in ways that exacerbate the problem in the long run. Executives try to "fill

the factory," pursuing work that has marginal profitability and high risk. Outsourced work is brought back in-house even if the in-house facility is at a disadvantage on costs. Questionable decisions regarding diversification are made. Efforts at overhead reduction are made at the margin, yielding incremental results at best.

What is really required in the near term is a rethinking of the basic operating model and a restructuring of operating economics to allow for affordability at much lower rates of production (see Exhibit 2). This means addressing the full range of indirect cost categories: corporate allocations, people-related costs, site-related costs, IT spending, and

Exhibit 2
Managing Total Cost Through a Downturn



Source: Booz & Company

discretionary expenditure. Each of these requires a distinct cost reduction approach. In addition, companies need to make adjustments to direct labor costs that are commensurate with a more realistic demand outlook.

Companies can also help ensure program affordability by improving operational efficiency and unlock-

ing the inherent product and supply chain costs by applying advanced design-for-affordability approaches. Our experience is that this works best when applied via a transparent look through the supply chain to fully capture all the underlying cost elements—including direct labor, direct material, overhead, and profit—that are embedded in cost of goods sold.

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REEVALUATING THE PORTFOLIO

A&D companies have enjoyed a decade of growth. Now CEOs must begin thinking about the portfolio implications of maturing programs, the impact of the financial crisis on commercial aircraft orders, and the uncertainty that characterizes today's defense budgets.

Over the past two decades, there has never been a better moment for a comprehensive review of the ideal portfolio strategy in A&D. Each company's options will vary, of course, but in the industry as a whole, companies can make one of four portfolio decisions: consolidate, exit, migrate, or hunker down (see Exhibit 3).

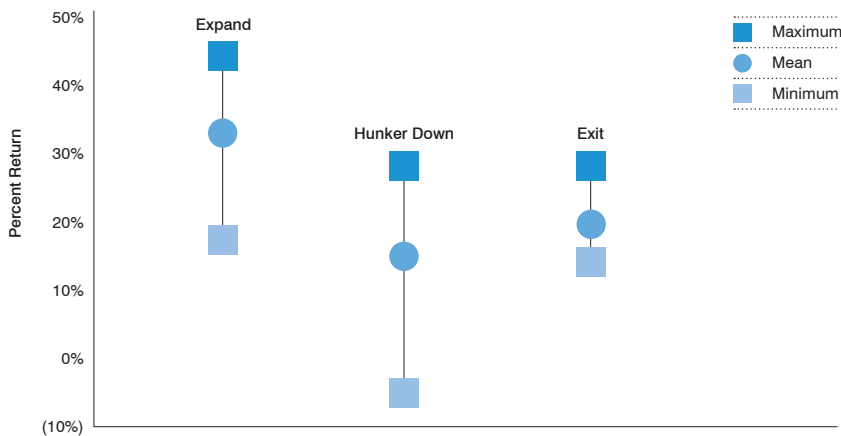
Consolidation has traditionally been an avenue pursued in A&D during down markets, most notably during the slump of the 1990s. The flip side of this consolidation was a decision by a large number of companies to *exit*, especially on the defense side. A few companies tried to *migrate* into commercial markets, with, as former

industry executive Norm Augustine might say, a track record "unblemished by success."

The one strategy that did not succeed in the last downturn was to *hunker down*, in which companies attempted to outlast the fall in demand by cutting costs and curtailing investment. Companies pursuing this strategy in the first half of the 1990s generated significantly lower returns to shareholders than companies either exiting or expanding (via consolidation). Moreover, after a few years, the vast number of these hibernating companies woke up to their predicament and chose to exit the industry—unfortunately after purchase premiums had declined, which further lessened the return to shareholders. If recent history provides a lesson, it is that action beats inaction: Executives reviewing their portfolios should decide where they want to play and where they are apt to win, and then aggressively and confidently execute their strategy by buying and investing or by selling and harvesting.

Exhibit 3
Annualized Return to Shareholders

U.S. AEROSPACE/DEFENSE COMPANIES 1991 TO 1995



Source: Booz & Company

CONCLUSION

Any hopes that A&D will be immune from the current financial turmoil should be dismissed. General aviation producers have recently cut production plans. Order rates for new commercial aircraft have begun to decline, and order cancellations are increasing. Major programs in defense have been canceled or cut back. In this environment, there will be a premium on risk management, product affordability, and effective portfolio strategies.

The most successful approaches will be both operationally intense and strategically active no matter how deep the downturn is and no matter how long it lasts. The companies that best overcome their strategic boundaries will look at their markets as Marshal Ferdinand Foch saw the battlefield of the Marne in his legendary dispatch. Just before he turned the tide of the initial German offensive with a massive counterattack, Foch cabled: “My center is giving way and my right is in retreat. Situation excellent. I shall attack.”

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