

Ethical Issues in Defense Systems Acquisition

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Generally speaking, when one talks about weapon systems and ethics, the conversation is about the weapons' use in combat and whether such use is morally justified and adheres to the laws of war. To be sure, history is replete with issues of inhumane weapons, some of which ultimately came to be banned or considered unacceptable for use by civilized nations. Chemical and biological weapons, nuclear weapons, and land mines are but a few examples. Debates about potential employment of certain weapons should obviously occur well before such weapons are even built.

What I wish to discuss in this chapter, however, are some of the less frequently discussed, but very important ethical issues encountered in the actual process of acquiring weapons, *after* the decision process about the moral propriety of their potential operational use has already been evaluated. The manufacture and sale of arms is an important component of national identities as well as national economies, and it is also the source of a great deal of morally-questionable behavior. Scandals, and the questionable ethics that underlie them, have erupted regularly in the weapons procurement business. I begin by reviewing some of these regrettable events, and then proceed to analyze the weapons procurement process to identify where things can go wrong.

I. The Economic Importance of the Arms Industry: The Lure of Money

It is an observation from history that war and violent conflict are seemingly constant elements of the human condition. And, while the technology and the weapons themselves change with time, the importance of armaments and arms industries remains. One has only to consider the importance of ships and shipbuilding in ancient conflicts like the Peloponnesian War, or the introduction of gunpowder weapons in fifteenth century Europe, or the rise of arms makers during the U.S. Civil War, or the dominance of arms makers like Krupp in Germany in WWI, or the emergence of powerful U.S. aircraft companies in World War II, or the rise of the nuclear weapons complex during the Cold War, or the continued growth and dominance of defense industries worldwide since the events of September 11, 2001. Aaron Plamondonin, notes “the improvements in the industrialization of weapons and equipment production have altered the way wars have been fought throughout history. Those nations that adopted better processes and were able to better equip their militaries often had the advantage on the battlefield. All nations were confronted with a new type of war, and *power began to be measured in how efficient a nation’s defense industrial capability had become.*”¹

It goes without saying that combat operations are a tremendous drain on the human treasure of a nation. Weapon system acquisition, while it doesn’t involve sending soldiers into combat, nonetheless represents a significant drain on the financial treasure as well. Defense spending accounts for large portions of many

national economies, whether it is expenditures for imports or income from exports. While not necessarily on a *per capita* basis, the U.S. remains, on an absolute basis, the largest single investor and customer for defense industries, and the largest exporter of armaments. With a Defense Budget of close to \$650B, spending on actual equipment is annually about \$100B, with another \$60B on research and development. Weapons purchases constitute a large fraction of a very large DOD budget, and the decision to invest heavily in weapons should be taken only after sufficient debate. Unfortunately the debate often revolves, not around the propriety of such investments, but rather around politics and which party's politicians will benefit from the defense work proposed. A great deal of money is tied up in weapons acquisition and, where there is a lot of money, there are unfortunately many opportunities for poor ethical judgment.

The enormous amount of money involved in weapons development and production is important to the national industrial base, but is especially so to primarily defense companies whose existence depends on government contracts. Often, if a company is not adequately diversified and does not win major weapons contract competitions, they will exit the business. As defense budgets decline and the number of weapon projects shrinks, this problem worsens, and the impetus for ethical misbehavior grows.

II. Past Scandals

History reveals that where there has been a demand for weapons, there have been repeated cases of unethical and illegal behavior. These ethical abuses take

many forms, to include shoddy workmanship, influence peddling, bribery, contract fraud, and procurement impropriety. Scandals can be found dating back hundreds of years.

During the American Civil War, for example, J.P. Morgan bought defective rifles and sold them to generals in the field for obscene profit. The rifles would shoot off the thumbs of the soldiers using them. After the Civil War, with the boom in technology and armaments, graft and corruption reached a fever pitch.² Marshall Baron Clinard, in his wide-ranging book on corporate corruption, states that:

Throughout the civil war, the country was also plagued by the corruption of the arms suppliers; bullets were even filled with sawdust instead of gunpowder. These rip offs continued into the twentieth century. During WWI, profiteering, abuse of political power, arrogance, and fraud typified the defense industry. During WWII, Harry Truman suddenly found himself catapulted into the Presidency of the United States, in part because of his investigations into arms-maker fraud and excessive profiteering. Congressional hearings conducted by Senator William Proxmire (D-Wisconsin) during the Vietnam War revealed similar defense industry exploitation.³

Incidents of negligence or exploitation by defense contractors in the U.S. have occurred more or less continuously throughout the nation's history. Clinard has noted, "[b]etween 1983 and 1990, a quarter of the 100 largest Pentagon contractors were found guilty of procurement fraud. In the 1988 to 1990 period, there were 16 cases involving 14 of the largest weapons makers."⁴ In a more recent example, the Defense Department Inspector General found that deaths reported in Iraq in showers installed by a military contractor were caused by "improper grounding or faulty equipment," leading to electrocution when it short-circuited. The report concluded, "multiple systems and organizations failed," leaving soldiers "exposed to unacceptable risk."⁵

Other spectacular cases have involved influence peddling. Melvyn R. Paisley, an Assistant Secretary of the Navy with major responsibility for procurement, brazenly

exploited Washington's infamous "revolving door." According to the government, in the first 15 months after he left the Pentagon in March 1987, Paisley collected more than \$500,000 in consulting fees from companies he had earlier befriended. Even worse, while in office, he corrupted the bidding process on hundreds of millions of dollars of weapons systems in order to divert contracts to those who secretly bought his services. The scams that swirled around Paisley were brought to light -- and eventually to justice -- as part of "Operation Ill Wind," the biggest and most successful federal investigation ever of defense procurement fraud. "Ill Wind" led to the conviction of government officials, Washington consultants, corporate executives, and seven companies.⁶ According to Wall Street Journal reporter Andy Pasztor, more than 90 companies and individuals were convicted of felonies, including eight of the military's fifteen largest suppliers, all of whom admitted to having violated the law.⁷

Most recently, a Singapore-based company was accused of an audacious bribery scheme to defraud the U.S. Department of Defense into overpaying at least \$20 million for supplies and services. Allegedly, Navy officers ordered ships steered toward ports where the company had an office. The firm then submitted bills that were padded or that included services never rendered, according to the indictments. The personnel involved allegedly engaged in a conspiracy to commit bribery. As part of the conspiracy, a senior Navy officer allegedly sent the contractor information that the Navy had classified as "Confidential," including schedules reflecting the movements of Navy ships months in advance. This officer had also operated as an advocate within the Navy for the company's interests, urging decisions about port visits and contractor usage that were designed to benefit the company. In return, the company provided the officer with paid

travel, luxury hotel stays and prostitution services.⁸

The U.S. Army has also experienced its share of contractor fraud. According to federal officials, one company obtained contracts with the Army Corps of Engineers to provide technology-related work and services. Starting in 2007, several company individuals began directing orders for technology work to a sub-contractor. The chief technology officer for the subcontractor then submitted fraudulently inflated quotes for work; the prime contractor then passed along those bills to the Army Corps. The contracting officers and company officials referred to the inflated work as “overhead,” which was then paid out to the individuals originally ordering the work. In total, the unidentified company fraudulently inflated its invoices by about \$20 million. For their help in the scam, the contracting officers received millions of dollars in kickbacks, flat screen televisions, luxury cars for themselves and their relatives, as well as high-end watches and liquor.⁹

The U.S. Air Force, too, has suffered from major procurement scandals. In the early 2000s, in an attempt by the Air Force to acquire new in-flight refueling tanker aircraft, senior Air Force and Boeing officials were convicted of procurement integrity violations and sentenced to prison for allegedly sharing procurement and competition-sensitive information.¹⁰ At the same time, Boeing had been barred from government satellite launch activities because of procurement integrity violations stemming from the theft of rocket technical data from Lockheed Martin, their main competitor.

All of the above represent brazen acts that were both illegal and unethical, fueled largely by desire for personal gain. They are examples of the dangers involved when large sums of money are at stake involving contracts for weapons or services related to

weapons. These are highly visible deviations from ethical behavior. Let us now turn to the process of weapon acquisition itself, and see where along the way the process can go wrong and facilitate or produce the behavior described above.

III. Where can it go wrong?

In the weapons acquisition business, we recognize that there are three basic processes, each of which must operate properly for a well-designed and well-executed system of acquisition. They are:

- 1) the requirements process (embodied in the Joint Chiefs of Staff, Joint Capabilities Integration Development System) in which the senior warfighter leadership convinces itself a weapon is needed;
- 2) the financial process embodied in the DOD Planning, Programming, Budgeting, and Execution System (PPBES); and
- 3) the program management process embodied in DOD Regulation 5000.1.

These processes operate simultaneously and interact in multiple and complex ways, but each also has its own vulnerabilities. In the requirements area, we will discuss some potential issues as they relate to the very early phase of concept development in which the most basic decisions about the system are made. In the financial area, where budgets are developed but not yet enacted, we will discuss such potential ethical issues as realism in cost-estimating and lack of skepticism in reviewing and accepting contractor bids.

In the program management area, there are numerous points involving technology, testing, contracts, and financial rigor, at which ethical decision making by a program manager may be crucial. Weapon system acquisition professionals generally

think about the development and production of a weapon in terms of a so-called acquisition life cycle. Current thinking divides the life cycle into five phases, each separated by a decision milestone. First, of course, is the refining of the basic concept: what is it we are trying to accomplish, what problem are we attempting to solve, or need are we trying to address – and how do we propose to meet this need through the design and development of a proposed new system? The second phase involves technological development: what new technologies must we develop and deploy to meet the identified need? Thereupon follows the third phase of “System Development & Demonstration,” in which engineers and defense contractors design, build, and extensively test prototypes of the new system and demonstrate their capacities to address the identified need.

Assuming successful design and testing of the prototype, the next (fourth) phase of the acquisitions cycle is to gear up for full-scale production and initial deployment of the new system to the client military services. And, assuming the production phase proceeds as planned, the cycle ends with the fifth and final phase, in which the new system is put to broad use, maintained, repaired, modified as needed, and otherwise supported in its normal military use. It is important to recognize that there is a detailed ongoing assessment process in each of the phases, determining the degree of progress, cost-effectiveness, and overall satisfaction with the process, which can (in principle) be revised or terminated at the crucial “decision milestone” separating each distinct phase of the acquisitions cycle. Finally, while it is not the goal of this chapter to further explain the details or nuances of the acquisition business in its entirety, it is worthwhile to understand what goes on in the different phases to understand where ethical challenges may arise.

III.1 Moral Hazards in Concept Development and Refinement

Very early in the life of a weapon system, the developers (systems commands and contractors) begin working closely with users (soldiers, sailors, airmen, or marines) in an attempt to determine what the war fighter needs to be successful in his mission.

Decisions made during this phase determine the basic type and functionality of a system and have a very big influence on its ultimate cost and schedule. While on the surface concept development sounds innocuous enough, there are, in fact, many opportunities in the formative life of a weapon system for ethical challenges and questionable behavior.

A question that needs to be asked early in, and even before, the concept development phase is: why are we considering the system in the first place? In most cases, the answers are clear and the systems are justified. Nonetheless, we must ask. Can the mission not be accomplished without the system, or is mission performance of our current system or systems in the face of new threats merely degraded? Would a change in operational concepts or tactics, techniques, and procedures preclude the need to buy an entire new system? Is the threat real, or is it only estimated and, if real, is it a case of increased adversary capability along with stated intent, or only increased adversary capability?

Since a company's existence may depend on winning or re-winning a contract, the contractor may actually try to convince the user they need a new system. One only has to attend one of the many military-themed conferences or symposia to find legions of contractors exhibiting their systems and proposed systems to understand the relationship between the military and the defense industry in the military decision process. And we

not only need to be concerned about the military, but Congress as well. Congressional influence, and the influence of corporations on Congress, is well known.¹¹ To continue to employ people in a particular State or Congressional District, a contractor needs to stay in business. To stay in business, contractors need to make a profit. To make a profit they have to sell things, and defense contractors sell weapons. So we might be led to wonder: are the weapons we buy a result of contractors pushing them, or warfighters demanding them or, more likely, some of both? Are the contractors exaggerating the threat? Are the government program managers doing likewise?

At the present moment, for example, military planners in the U.S. are attempting to assess prospects for cyber warfare and cyber weapons. Thomas Rid, writing in *Foreign Policy* on the topic, contends that cyber war is “still more hype than hazard.”¹² In many respects, rhetoric about cyber catastrophe resembles threat inflation we saw before the Iraq War. Deliberately overstating (or understating) the threat—even for the well-intentioned reasons of advocacy—can raise questions of ethics and professionalism. As Brito and Watkins suggest,¹³ the run-up to the war with Iraq in 2003 makes clear what can happen when a threat is misconstrued. In short, candor and tempered rhetoric are called for. They also point out that Washington teems with people who have a vested interest in conflating and inflating threats to our security.

A good example of a program in which the need was questionable, but the Service demanded a new system, is the new Air Force tanker aircraft. In the late 1990s, the market was declining for commercial airliners, and in the early 2000s, Boeing had lost the competition for the next generation fighter. The commercial airlines were in distress

due to the attack on 9/11/2001, and the Air Force was in the midst of buying and funding the C-17 transport plane, the F-35 fighter and the F-22 fighter. The Air Force had never indicated in any requirements process that they needed a new tanker, but then they tried to make the case that the current tanker was insufficient -- and that a sole source contract to Boeing was the only alternative. Numerous studies, to include those from the RAND Corporation and the Defense Science Board, however, indicated otherwise. The Air Force's appeal stalled until 2008, when Congress finally approved a competitive acquisition. This case was fraught with attempts to circumvent appropriations law, violations of procurement integrity laws, and improper competitive contract design and administration. Ultimately, both government and contractor executives served prison sentences as a result.

In addition to all of these corporate, political, and institutional issues, we find moral hazards on the level of personal and professional interests of those involved in acquisitions. Becoming an experienced and successful first-rate program manager is a difficult and career-long process. Promotion opportunities to senior ranks are far more limited than they are in the combat sectors of the military. A government program manager may be deeply invested in a particular program and view the success of that program as important to his or her promotion. Deliberate or not, this might influence the government manager's belief that a program is desirable or needed, and thus cloud what might otherwise be good judgment. While this is not the same as blatantly "unethical" behavior, it demands, at the very least, mature ethical judgment.

In sum, the ethical caveats at the concept development stage of acquisitions are these. Before we commit to hugely expensive new systems, we should be certain that

there is a real threat and that the motivations of both warfighters and their supporting industry are understood. There is a real possibility in this phase that insufficient skepticism by the government and excessive salesmanship by industry may lead to the procurement of unnecessary systems. Warfighter senior leaders should be sensitive to this classic “guns and butter” question: before we commit treasure to weapons, we should be absolutely sure of their need, lest other important priorities go unfunded. This is the perennial ethical dilemma at the core of defense acquisitions.

III.2 Moral Hazards in Technology Development

Once a decision has been made that a new weapons or defense system is needed and a determination is made of what types of system and technology are called for, that technology is to be matured to the point that a system prototype can actually be built and demonstrated. It is in the assessment of technology maturity that both government and contractor program managers must maintain objectivity and not allow extraneous pressures to drive poor judgment. Very often, contractors and their government counterparts will try to push a program into the next system development phase before the technology is ready. Sometimes this is based on a legitimate, but poor, assessment of technology readiness, but is often driven by schedule (and budget) pressure.

Entering the next phase of weapons procurement before the requisite technology has been adequately developed is known as “concurrency.” Concurrency is almost always a bad and expensive decision. Why, then, do program managers frequently engage in it? Perhaps they truly believe the technology’s success is just around the corner, perhaps the contractor assures them technology success is just around the corner,

perhaps it is a desire not to delay the schedule the program manager originally agreed to, as that could be taken as a sign of failure. Improperly motivated decisions at this point could be construed as unethical.

An excellent example of a program attempting to exceed the limits of technology – and failing at great cost -- is the Advanced Medium Range Air-to-Air Missile (AMRAAM). This was a case in which there was a well-documented need based on improvements in enemy air-to-air missile technology. However, the service (Air Force) and its contractors chose to implement a technology known to be immature (in this case, advance integrated circuits) too early into a production system. This program was also marked by excessive optimism on the part of industry and government program managers in regard to schedule, plus highly unrealistic contractor budget estimates – in the face of independent estimates to the contrary. Was all of this merely technological *hubris*, or was it motivated by other crass, and perhaps unethical, instincts?

Similar problems of concurrency occurred in both the F22 and F35 fighters, for which technologies such as advanced flight software and unique propulsion systems were designed into production systems, and production contracts were signed before demonstrating sufficient technological maturity – with resulting dramatic cost overruns. The Spaced Based Infrared (SBIRS) satellite system is another good example of the service prematurely committing to a production system: in this case, true advanced infrared detector technology maturity was wrongly assessed. More importantly, in this case the program managers demonstrated excessive optimism by allowing somewhat unchecked growth to requirements for the system, which could not be met by the technology.

These very expensive mistakes can occur legitimately, simply for reasons of misunderstanding the complexity and uncertainty of the required technology. It is just as, or even more likely, however, that the frequent occurrence of mistakes like this should be attributed to *hubris*, or else to an unwillingness to consider reality in the face of budgetary, and perhaps leadership pressures. In either case, the examples above resulted in staggering costs to the taxpayers and lengthy delays in delivery of the systems to the warfighters. While not the flagrant ethical scandals discussed earlier, the avoidable outcomes in these cases render them scandalous in their own right.

III.3 Moral Hazards in System Development and Demonstration

This is the phase of a new system's development during which, after the required technology development has been completed, major acquisition contracts are signed and the contractors are busily completing design and testing of their systems. It is at this phase, where a program is actually designated as a program, and where, as a result, the largest sums of money begin to flow.

If there is a competition, government managers must be extra scrupulous in designing the terms of the competition, and exceptionally diligent in watching for attempts by contractors to influence the outcome. It is here that lobbyists and contractor representatives have often resorted to bribery and other patently illegal and unethical behavior. During an arms-contract bidding competition, alternatively, contractors often provide bids -- hoping to win -- which are exceedingly optimistic and assume perfect

success. Perfect success, however, is never a realistic assumption, especially if there are lingering questions of technical maturity from the previous phase.

Government program managers need to treat optimistic bids with healthy skepticism. Unfortunately, even when presented with credible cost estimates by seasoned government estimators, government program managers too often opt to believe the contractor. While the managers are doing nothing overtly “wrong”, this is perhaps an ethical error of omission. Once awarded, a contractor must successfully complete this phase and the successful bidder must convince the government that they indeed have a good system before a production decision is approved.

At the end of this phase the all-important test phase begins. First, developmental testing is conducted to insure the contractor has met contract requirements, and then operational testing is done to insure that a system, even if it meets contract requirements, is suitable for use in the field. This is an extremely important time in the life of a system, and contractor payment is on the line if the system fails to meet contract requirements. A lot of money will have already been spent and government program managers are reluctant to admit if there has been a failure. There are several opportunities here for unethical behavior.

What often happens is that when a program begins running behind schedule or over budget, one of the first things to be cut is testing. While this is purely a management decision, it can have really bad (and, in isolated cases, disastrous or potentially fatal) consequences. It is only through a thorough program of testing that the government can know if a complex system really works under combat conditions, and whether it is really worth the cost. Undermining that certainty is at least stupid, if not unethical. There have

been cases where contractors have been caught (and prosecuted) for actually cheating on these tests. In one instance, a company was fined for falsifying test data on its cruise missiles and fighter jets. In another, a company paid in a civil settlement for false testing, in addition to paying for repairs to the system in question.¹⁴

After developmental testing is complete, the system is turned over to the war-fighting units for operational testing to determine if the system, regardless of whether it functioned according to contract specifications, can actually be used in combat conditions. Contractors and program managers have little or no involvement in this phase, but the pressure to pass Operational Test and Evaluation and move on to production is enormous.

III.4 Moral Hazards in Production and Deployment

By the time a program has reached a point where a production decision is required, there is no turning back if the user has a legitimate need for the system. Large sums have already been invested. Presumably, testing has been successful and the decision to proceed is sound. The contractor is then responsible for delivering the system at the cost agreed, often on a fixed price contract. It is a fairly standard practice for a contractor bid to minimize costs on the first items with an eye to making more of their profit in upgrades and engineering changes later on, particularly in programs which are expected to last a long time and where large numbers of systems will be built.

While this is a business decision and it is not inherently unethical, government and military program managers need to understand and perhaps more closely moderate this behavior. Obviously, if the company can cut or reduce costs in production, it is to

their profit advantage. But this creates the incentive for contractors to cut corners on quality, to use illegitimate and unapproved material and part substitution, to overcharge, to cross-charge to more expensive contracts, to engage in defective pricing, to excessively reduce the workforce, and so on. Pietragallo gives a concise description of the various ways in which a contractor may attempt to defraud the government in this phase.¹⁵ The number of cases of contractor fraud in this phase of the life cycle is significant, and indeed, most major defense contractors have at one time or another been caught and prosecuted for engaging in fraudulent behavior at this crucial state. As an example of this, at a jet-engine plant, one contractor paid the government millions to settle five civil lawsuits alleging contractor fraud involving the alteration of daily labor vouchers to inflate its billings.¹⁶

III.5 Moral Hazards in Operations and Support

In this phase, the weapon system is now finally in the hands of the warfighter and is likely to be in service for many years. The unfortunate problem here is that after a new weapon is designed and fielded, the contractors and acquisition professionals want to move on to the next exciting new thing. This is as it should be, since expensive science and engineering talent is being retained to develop new technologies and design new systems. It is unfortunate, but true, that the business of logistics and maintenance does not pay as well as research, development, and acquisition. For weapons acquisition, contractors make relatively larger sums of money over relatively shorter periods of time. The operations phase and lower paying logistics and maintenance activities of a system may last several decades.

One way, however, in which contractors can and do make additional profit during the operations phase is through the sale of spare parts and the provision of upgrades to the fielded systems. These can be quite lucrative. The B52, for example, has been in service since the 1950s and remains a formidable system due to extensive upgrades. It is estimated that the F-35 fighter's total cost, once operations are included with development and production, will approach one trillion dollars. Ethical challenges in the operational phase occur in the area of insuring quality of spare and replacement parts and in assessing the need for expensive upgrades.

The corresponding temptations and pitfalls are not qualitatively different from those already discussed for earlier phases in the acquisitions lifecycle. However, the soundness, quality and safety of the final product placed in the hands of the soldier constitute the ultimate test of the ethics of the process. Since the health of the soldier (not to mention the success of the war effort) depend upon the quality and safety of the final product, ethical misconduct that affects operations and support seems most egregious, and should be dealt with most harshly. Indeed, during the American Civil War, Congress considered passing a law that would allow the death penalty in cases where a contractor was found guilty of committing a fraud against the government through which a soldier was bodily injured, as for instance in the sale of unsound provisions.¹⁷ This may seem exceedingly harsh in the present-day imagination, but it is an understandable sentiment in wanting to protect our forces from unnecessary harm.

IV. Conclusion

The stakes in defense acquisitions are hard to overstate. Weapons are, and have always been, important both to the provision of military security, and to the economic health of many nations, including the U.S. Defense industries are a major factor in the economy of many nations, and can prove to be a major drain on their resources.

Weapons are a type of product whose manufacture, however, does not directly result in improving the lives of the majority of a country's citizens. So it should be with great care that the decision to purchase weapons is made, and it should be with great care that the process of building and delivering a weapons system is accomplished.

Cases of illegal or unethical behavior directly involving the production and sale of arms are numerous. They have occurred throughout history, and infect not only the United States, but all countries where weapons are bought or sold, and where there are fortunes to be made as a result. Companies that make weapons, especially those companies for which weapons are the only product or are the main products, sometimes owe their very existence to the continued sale of arms and the resulting flow of funds. Where weapons are developed and sold, money – and lots of it - becomes a driving force behind unethical behavior. It was so in the past, and it continues to be so in the present. I have tried to show the nodes in the weapons acquisition process where there are opportunities for ethical misconduct. Some of these are quite subtle, including threat inflation in requirements development, and ill-informed or deliberately over-optimistic cost-estimating. Others are more obvious: impropriety in contracting, bribery and influence-peddling, contract fraud, the falsification of crucial test results, and so forth.

We can also conclude from this chapter that two distinct categories of ethical lapse lurk within the defense industry itself. First are acts of commission: the “scandals”

enumerated in Section III exemplify deliberate acts of such illegal or unethical behavior. A second category contains acts of omission. In much the same way that negligence, while not an act of commission, can nonetheless be considered criminal behavior, acts of omission in the weapon procurement business could be considered unethical. These may not involve any direct transgression, but they can be just as significant. There may be a lack of due diligence or an imperceptible slackening of supervision. Furthermore, I have described several junctures in the acquisition process where financial gain itself is not the driving issue, but the desire for success, reputation or promotion yields an ethical omission. These can be especially hard to identify, since their cause seems benign. There may be a fervent, vested, and enthusiastic hope for a project's success. There might just be a tiny bit more optimism than is warranted. But in the acquisitions process, and particularly for the project manager, these have ethical weight.

The weapons acquisition process is well-designed and clearly understood, albeit enormously, and perhaps necessarily, bureaucratic. There are many opportunities in this sometimes lengthy and often contentious process for ethical lapses, but also opportunities for good ethical judgment. From rational, well-supported decisions to buy weapons, to truthful assessments of technological maturity, to realism in cost-estimating, to adequate testing, proper construction and billing practices, all the way to continued support of the warfighter in the field, there are numerous points in the life of a weapon system where both contractor and government managers must be vigilant about ethics.

NOTES

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⁴ Marshall Barron Clinard, "Sociologists and American Criminology," *Journal of Criminal Law and Criminology* 41, no. 5 (January-February 1951): 549-577.
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