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### **Contracting in Noncompetitive Environments: Experiences of Contracting Officers**

October 14, 2020

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**Naval Postgraduate School**

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## **Abstract**

In this report, we review and discuss survey findings collected from contracting personnel operating in sole-source environments. We surveyed a small group of Air Force contracting personnel at the F-22 program office to understand their views on contracting. Our findings suggest that Air Force contracting personnel know that sellers in noncompetitive relationships have more leverage and power than the buyer. Indeed, 90% of respondents feel that they operate at a negotiating disadvantage in sole-source contracts. Arming the contracting personnel with certified cost and pricing data does not improve leverage, according to the majority of them. Rather, the contracting personnel identify two constraints in their qualitative responses. First, the sole-source environment itself contributes to the problem. Second, many respondents feel that they operate at an informational disadvantage compared to their private counterparts. This suggests that specific training on contracts would be more valuable than general training on business acumen. We also compare these responses to a recent survey of contracting personnel at the Air Force Space and Missile Systems Center.



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Disclaimer: The views represented in this report are those of the authors and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



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# Table of Contents

Introduction .....	1
Background .....	5
Survey Methodology.....	7
Results .....	9
Discussion.....	15
Conclusion and Recommendations.....	17
References.....	19



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# Introduction

Noncompetitive spending in the Department of Defense (DoD) is large. Per the DoD competition scorecard for Quarter 3 of Fiscal Year (FY) 2018, non-competed dollars accounted for 63% of total dollars by the Air Force and 65% by the Navy.<sup>1</sup> A majority of Navy and Air Force dollars are, thus, obligated in noncompetitive settings where few large firms dominate. Understanding the views of government contracting personnel on working in such noncompetitive markets is critical to DoD acquisition programs. Our paper offers insights by surveying a small number of military and civilian Air Force contracting personnel at the F-22 program office. The majority of the F-22 program office contract actions are awarded in sole-source environments. We also compare these results with surveys of contracting personnel at the Air Force Space and Missile Systems Center conducted by Adame and Markling (2018). Similar to the F-22 program office, sole-source contracts predominate space contracting.

Section 843 of the 2018 National Defense Authorization Act (NDAA, 2017) tasked the under secretary of defense for acquisition and sustainment to assess if there are any “gaps in knowledge of industry operations, industry motivation and business acumen in the acquisition workforce” (NDAA, 2017) and how such gaps, if any, can be closed with training and development. To that end, Congress asked the under secretary to submit a report on the knowledge of “industry operations, industry motivation and business acumen” necessary for each acquisition position and how non-DAU sources (industry and other universities) can be used to improve training (NDAA, 2017). In response, RAND prepared a report drawing on interviews of subject-matter experts in the DoD and industry and published sources (Werber et al., 2019). However, the report was unable to speak to the views of acquisition personnel because the RAND researchers did not have the time to survey them.

Our project takes a step in addressing this gap. We survey Air Force contracting personnel at the F-22 program office on their experience with sole-source contracting,

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<sup>1</sup> Calculated from Department of Defense (2018).



which accounts for a large share of the Air Force budget. We hope that our small survey, among others, will help identify gaps in training, if any, that may help acquisition personnel better negotiate contracts and determine “a fair and reasonable” price in these sole-source settings (Federal Acquisition Regulation [FAR] 15.404-1, 2019). We also contrast our results with another recent survey of contracting personnel and look for common themes, if any exist, among these two sole-source environments that can help improve the acquisition process.

The NDAA (NDAA, 2017) explicitly called for such analyses. By explicitly targeting business acumen, industry operation, and motivation, Congress wants trained acquisition personnel to understand the business of firms. In particular, how do firms price, cut costs, negotiate with buyers and suppliers, and respond to market conditions? A solid foundation in these concepts is likely to help DoD acquisition personnel secure more favorable terms when they buy goods and services. However, these concepts are not uniformly defined in the DoD, as noted in the RAND report (Werber et al., 2019). Moreover, contracting for common support services, such as waste disposal, is different than contracting for a major weapons system. A general understanding of firm behavior may be useful in both contracting scenarios, but acquisition personnel for a major weapons system need to understand the background and motivations of the big defense firms operating in their field. Identifying gaps in knowledge thus requires differentiating between general business learning versus more specific learning tailored to the experience and career path of acquisition personnel.

Our results support this point. In our survey, the majority of Air Force contracting officers know that sellers in noncompetitive (i.e., sole-source) relationships have more leverage and power than the buyer. Indeed, 90% of respondents feel that they operate at a negotiating disadvantage in sole-source contracts. Giving the contracting officers certified cost and pricing data does not help, according to the majority of them. Rather, they identify two constraints in their qualitative responses. First, the sole-source environment itself contributes to the problem. Second, many respondents feel they operate at an informational disadvantage compared to their industry counterparts.



Respondents in our study are familiar with the basic constraints of buying in noncompetitive markets. They mention an inability to negotiate prices and the associated power asymmetry between them and the sole-source contractor. However, many respondents point to specific information gaps. One respondent mentions that defense-focused firms have more nuanced goals, such as maximizing revenues that are perhaps not as clearly related to models of profit-maximization. Other respondents say they do not have information on subcontract terms. And still others say that their industry counterparts work on these programs for decades and are familiar with the ins and outs of the contract in ways that government acquisition personnel are not. These responses suggest more specialized training on the contracts themselves and the firm involved is more valuable.

We also find differences between individuals with 7 or fewer years of contracting experience compared to those with more experience. Less-experienced individuals are unfamiliar with issues of nonconformance and consideration in sole-source contracts. Consideration in contracts is the idea that both parties benefit from entering into a contract. Given these issues, these differences are perhaps unsurprising, because resolving nonconformance involves many steps and can take time.

Adame and Markling (2018) note similar issues in their survey of contracting personnel at the Air Force Space and Missile Systems Center. Although their personnel are unfamiliar with formal theories of power asymmetry in noncompetitive environments, they understand the practical issues correctly—as evidenced by answering scenario-based questions on operating in these environments. Indeed, industry contracting practitioners are also unfamiliar with formal theories but understand the practical implications. However, industry practitioners can better leverage their negotiating skills because there are incentivized to do so in their jobs.

Our survey focuses on a small population of 57 government contracting personnel at the F-22 program office. That, combined with our low response rate of 28%, makes us cautious in drawing strong conclusions. That said, our findings are perhaps unsurprising, and we offer a few tentative recommendations for training acquisition personnel in noncompetitive procurements. Clearly, an individual contracting



officer cannot change the market in which they operate. However, the DoD can give them more information on the contract itself—a short readable summary of the contract that highlights any incentives, outlines due dates and changes, and gives a brief history of the negotiations leading to the final contract, including the main players involved. Such details are often included in the “after action report” of seasoned contracting personnel, but the DoD should make them a standard practice. Moreover, the DoD should give more technical and economic information on the particular contract, which would strengthen the contracting officer’s negotiating position. On a related note, the DoD may also want to develop in-depth profiles of the principal firms operating in these markets. Finally, we recommend a larger survey of government contracting personnel across multiple commands to better understand and inform the training of acquisition personnel.



## Background

We review the RAND report here that motivates our survey. RAND researchers (Werber et al., 2019) undertook their study in response to Section 843 of the 2018 NDAA. On behalf of the DoD, their report assesses the current state of training in “industry operations, industry motivation and business acumen” (NDAA, 2017) in the acquisition workforce, documents gaps in that training, and offers recommendations—in particular, on the role of non-DAU sources. Their assessment relies on interviews of subject-matter experts in the DoD and industry, published competencies for acquisition personnel, and related literature.

The findings of the RAND report first highlight that there are no consistent definitions of the terms *industry operations*, *industry motivation*, and *business acumen* in the competency models associated with different acquisition career fields. Moreover, the competency models themselves are not uniform across career fields. Although the RAND researchers constructed a working definition of these terms, it was difficult to identify which career fields in particular needed knowledge of these terms. However, the report finds that most acquisition career fields need to know these terms, and related issues with career fields in contracting require more knowledge than science and technology management, for example.

Although the acquisition workforce uses both internal sources (e.g., Defense Acquisition University [DAU] and Naval Postgraduate School [NPS]) and external sources (e.g., commercial training companies and civilian colleges and universities) for training and education, the report was unable to identify precise gaps. This is perhaps due to the study relying on interviews with subject matter experts as opposed to conducting surveys of acquisition personnel.

To address gaps in Section 843 areas of “industry operations, industry motivation and business acumen” (NDAA, 2017), the RAND report first recommends that the DoD decide what level of knowledge of these areas is required for each career field. Then it recommends that the DoD measure the required knowledge of these terms among acquisition personnel. This would enable the DoD to precisely identify gaps, if any, in



this knowledge. It also recommends better tracking of training by personnel throughout their career (Werber et al., 2019). This would allow for stronger assessments of training and development programs in the acquisition workforce.

Our survey addresses an important gap in this study by surveying Air Force contracting personnel on their knowledge of contracting in noncompetitive environments. Our findings suggest that most Air Force contracting personnel have a basic understanding of industry operations in their field. However, our findings also indicate that the surveyed personnel need more specific knowledge on contracts, subcontract terms, and contract history.





## Survey Methodology

To understand the views of Air Force personnel on sole-source contracting, we surveyed 57 individuals in the F-22 system program office at Wright-Patterson Air Force Base, OH, and Hill Air Force Base, UT. Of these 57, five are Air Force officers, and 52 are Air Force civilians. After receiving the necessary approval from the Air Force Survey Organization, an administrator emailed a link to the online survey, using the NPS-approved LimeSurvey web-based survey system. The survey was open from December 6, 2019, to December 31, 2019. It was a voluntary and anonymous survey. We did not ask for or collect any personally identifiable information. Moreover, we added the following statement in the beginning: “Your participation in this survey is strictly voluntary. If you choose to participate you can change your mind at any time and withdraw from the survey. You will not be penalized in any way or lose any benefits to which you would otherwise be entitled if you choose not to participate in this survey or to withdraw.” This was to ensure respondents felt comfortable sharing their feedback without fear of retaliation.

Our survey consisted of two parts. In Part 1, respondents were asked seven demographic and background questions, while in Part 2, respondents were asked about their experience in noncompetitive contracting. Furthermore, respondents were asked whether they feel that they are at a disadvantage in such settings. If they do feel that they are operating at a disadvantage, respondents were asked to identify factors that contributed to that disadvantage. We also asked about respondents’ experience with nonconformance and consideration in noncompetitive contracts. The complete survey is available upon request.

Despite multiple email reminders, our response rate was only 28% (16 individuals) and dropped to 23% (13 individuals) with complete responses. December is a busy time with year-end deadlines and holidays. This perhaps reduced the number of respondents. Given the small number of respondents, we view the survey results as more qualitative evidence and hope that future surveys with larger populations can provide more insight into the issues raised by the F-22 Air Force personnel.



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## Results

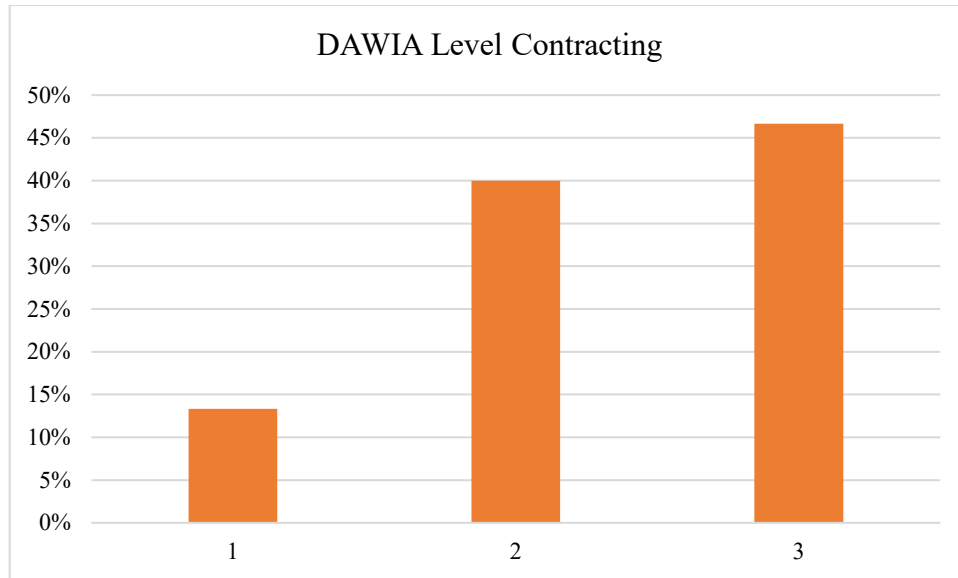
We first describe the background characteristics of the respondents. Unfortunately, 5 of the 16 responses were incomplete. We summarize the responses below for everyone that responded to a question. Of our 16 respondents, three identified as Air Force officers and 10 as Air Force civilians. Another three chose not to respond. This translates into a higher response rate of 60% among the Air Force officers, compared to 19% among Air Force civilians. Our survey population included five Air Force officers, of which three responded, while 10 out of 52 civilians responded. In terms of gender, men accounted for 69% of responses, compared to 31% women.

Among the military responses, two respondents are of ranks O-1 to O-3, while one is of rank O-4 to O-6. Among civilians, a majority of the responses (60%) are at GS-13 and GS-14 grade, compared to GS-12. Figures 1 and 2 summarize the professional background of the respondents. Almost 80% have more than 4 years of contracting experience with the federal government, and 50% have more than 8 years of experience. This suggests that our survey responses reflect the views of both entry-level and advanced acquisition personnel. Most respondents (85%) also have a Defense Acquisition Workforce Improvement Act (DAWIA) certification of Level 2 or 3.



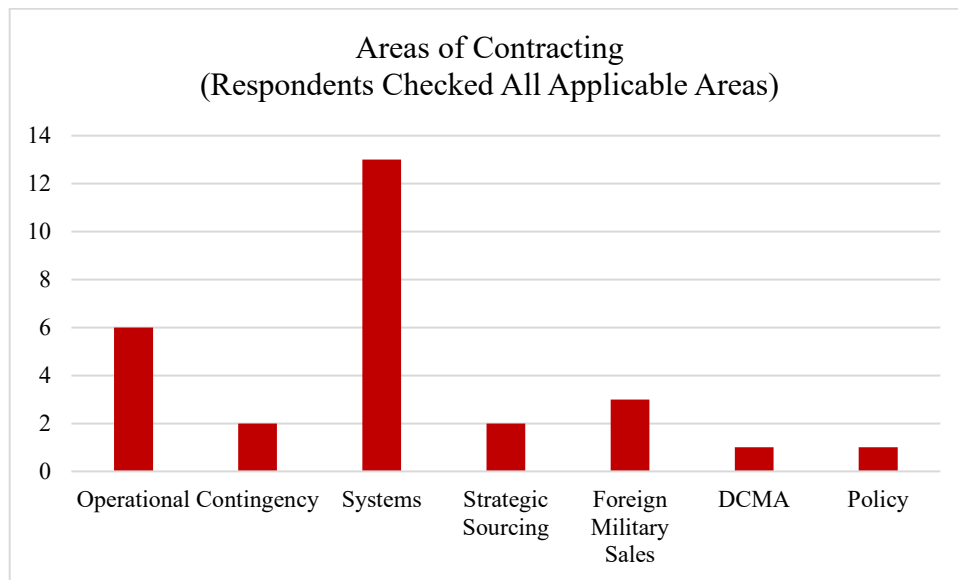
**Figure 1. Years of Contracting Experience**





**Figure 2. DAWIA Level Contracting**

As shown in Figure 3, our respondents have experience in multiple contracting areas with the majority in weapons systems acquisition followed by operational contracting.



**Figure 3. Areas of Contracting**

We turn next to our experience questions on noncompetitive acquisitions. Given our focus on the F-22 program office, it is unsurprising that 67% of our respondents



have been involved (currently or in the past) in noncompetitive relationships with incumbent contractors. These would be sole-source contracts. Of the 11 individuals (67%) who responded yes, all but one (90%) feel that they are at a negotiating disadvantage with the contractor in this setting. Arming them with certified cost and pricing data does not change their views. Of the group that feels they are at a negotiating disadvantage, 90% continue to feel at a disadvantage even with certified cost and pricing information.

Such a lopsided response naturally leads to the question of why contracting personnel feel at a disadvantage in noncompetitive settings. Their qualitative responses fit into two categories. First, they feel disadvantaged because private contractors leverage the sole-source environment. Some responses mention the negotiation/power asymmetry of not being “able to walk away and either not purchase the item at all or to purchase it elsewhere.” Others mention the inability to negotiate lower prices because the sellers leverage their sole-source position.

This explanation is perhaps unsurprising. We know from economic theories of firm behavior the difference between markets with a lot of sellers (i.e., competitive markets) and one seller (i.e., monopolies). Prices are lower in competitive markets because buyers can choose from different sellers. Moreover, buyers can switch from one seller to another if they are unsatisfied with the product or price. This leads to lower prices for goods traded in competitive markets. However, the military does not often operate in competitive markets. They buy custom products designed and built to their specific needs. Private firms also order custom products in many industries, where dual sourcing is a common response to diversify risk across multiple suppliers and reduce cost. Klotz and Chatterjee (1995) use a theoretical model to show that dual sourcing can reduce costs in a setting where firms face learning and entry costs, common to most DoD acquisitions. An empirical study confirms the advantages of dual sourcing. Using a unique, though small, dataset of 14 tactile missile contracts between 1975 and 1995, Lyon (2006) shows that dual sourcing was undertaken to improve quality, not reduce cost per se, but still led to lower procurement costs.

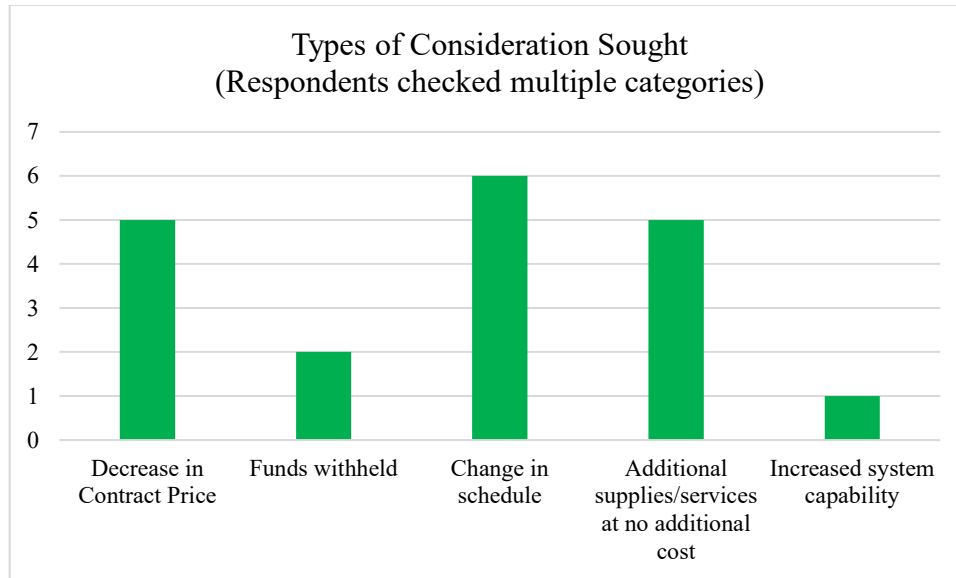


Other qualitative responses fall under the second category of government contracting personnel operating under an informational disadvantage compared to their industry counterparts. For example, a respondent mentioned that the “Program Office is not trained or knowledgeable on their requirements.” Another respondent mentioned that they (i.e., government contracting personnel) do not have a “very deep understanding” of “true cost” or the government’s “negotiated price.” In yet another variant, a respondent described the difficulty in obtaining certified cost or pricing data from subcontractors. Many respondents mentioned that the Truth in Negotiations Act (TINA) certification does not include data on the terms between contractors and their subcontractors. While sole-source contracts make these information barriers worse, it seems that the Air Force should demand more data from their contractors and then disseminate it widely within the DoD acquisition community.

Fifty percent of respondents that used incentive contracts, such as cost plus award fee (CPAF) or cost plus incentive fee (CPIF), felt that such contracts better incentivized necessary performance among contractors. However, the other 50% of respondents disagreed, describing some problems with incentive-style contracts. One respondent mentioned that contractors are not motivated by fees; rather, their business model works around “cash flow” and “quarterly earnings.” Another respondent noted that contractors seem to pursue a revenue maximization strategy over profit maximization. Most incentive contracts assume that firms seek to maximize profits by cutting costs. However, these responses suggest that these firms have goals that the government does not consider in the negotiation process.

Our final experience questions centered on nonconforming supplies. Fifty percent of respondents had experience with contractor nonconformance. Though 50% nonconformance is high, it is difficult to interpret without more information on nonconformance in other DoD and industry contracts. Of those that experienced nonconformance, 88% said that consideration was sought based on their highest dollar value contracts. Figure 4 describes the type of consideration sought—with change in schedule being the most common, followed by a decrease in price and more additional supplies.





**Figure 4. Types of Consideration Sought**

When consideration was sought for nonconformance, 57% of respondents said consideration was recovered. This seems low, but again it is hard to interpret the data without more information on the specific contract and dispute. In cases where consideration was recovered, 75% of respondents felt the consideration was fair. However, in cases where consideration was not sought, the respondents again noted power asymmetry problems with sole-source contracts.

Comparing the survey responses across different groups can offer more insight into these overall findings. However, we are cautious in analyzing responses by group because of the small number of respondents in some groups. That said, we can use experience to bin individuals into two almost-equal-sized groups. This exercise offers qualitative evidence on differences between those with more and less contracting experience.

Among respondents reporting their years of contracting experience, we binned six individuals (46%) as those with less experience, ranging from 1 to 7 years. We binned the other seven individuals (54%) as those with more experience, ranging from 8 to 25 years. Both groups have similar exposure to noncompetitive acquisitions. For example, all but one respondent in each group responded yes to the question on whether they had any experience with sole-source contracting. While both groups had



similar backgrounds in sole-source contracting, respondents with more experience felt that they were at a negotiating disadvantage in larger numbers compared to those respondents with less experience. Four of those with less experience responded that they were at a disadvantage, compared to six of seven of those with more experience. Interestingly, respondents with more experience saw less value in certified cost and pricing data compared to those with less experience. However, both groups mentioned power asymmetry and informational barriers as obstacles to effective negotiating in sole-source environments.

In response to nonconformance, respondents with more experience are more likely to run into nonconformance issues (six out of seven) compared to those respondents with less experience (two out of six). However, more contracting experience also translates into seeing consideration being sought for nonconformance (five out of six individuals) and consideration being recovered (four out of six individuals). None of the respondents with less experience recalled consideration being recovered for their highest dollar value contract. These responses may just be a function of time, as nonconformance complaints and considerations can take time to resolve. While some resolve in days, others drag on for multiple years.





## Discussion

Next, we compare these findings with Adame and Markling (2018), who surveyed Air Force contracting personnel at the Space and Missile Systems Center in Los Angeles. Their focus was not on the experience of contracting personnel. Rather, their survey asked individuals whether they were familiar with theories of power asymmetry and resources in noncompetitive environments. They also surveyed a small group of civilian private-sector contractors in multiple industries as a comparison.

Unlike our survey, their responses were concentrated among individuals with less than 10 years of contracting experience. Another difference was that a majority of their respondents were civilians—unlike the F-22 survey, where a majority were military officers. Despite the differences in demographics, both surveys suggest that contracting personnel understand the implications of power imbalance theories in sole-source environments. In their survey, 67% and 62% of individuals correctly answered scenario-based questions testing their understanding of power-dependence and resource dependency theories. That said, 60% of respondents had no understanding of the Joint Capabilities Integration and Development System (JCIDS). Given the importance of JCIDS to the acquisition process, this suggests an important gap. This can be addressed by specific training and then testing of personnel on the JCIDS process. This is similar in spirit to ensuring that contracting personnel are well versed in the details of the contracts they manage and oversee.

Adame and Markling (2018) also surveyed individuals across multiple industries who work in contracting. Such respondents noted that they actively try to diversify their supplier base, build long-term relationships with their suppliers, and evaluate their make-or-buy decisions every year. Although these respondents performed similar to their military counterparts in the scenario-based and theory questions, their open-ended responses suggest that profits drive most, if not all, of their actions and decisions. Unlike their private-sector counterparts, military contracting personnel do not face the same incentives or have the necessary tools.



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## Conclusion and Recommendations

We surveyed a small population of Air Force contracting personnel at the F-22 system program office at Wright–Patterson Air Force Base, OH and Hill Air Force Base, UT. Our response rate was 28%, or 16 respondents, with higher responses among military personnel compared to civilians. Given our small population at one program office and the low response rate, we are cautious about extrapolating to the larger government contracting population. That said, our findings likely confirm the perspective of many contracting professionals working in government acquisition. With these caveats in mind, we want to offer tentative recommendations based on our survey.

We recommend that the Air Force undertake a large survey in scope and population. In scope, the survey should include (a) basic business and economic questions on noncompetitive markets and (b) specific questions on the contracts associated with each program office. Based on our survey responses, most contracting personnel are perhaps familiar with basic business concepts but do not have the requisite specialty knowledge. If that is the case, a larger survey could help identify those gaps and then give the necessary information. Moreover, the survey should target multiple program offices, or at least those involved in the five largest dollar programs.

Apart from surveys, we also recommend a detailed study on dual sourcing. This is not a new recommendation. Rather, dual sourcing has been extensively discussed in the operations academic literature and among DoD decision-makers. However, we suggest research that takes one product—such as missiles in the Lyon (2006) article—and follows its design and manufacturing history for the DoD to assess the potential for dual sourcing. Such exercises may exist, and we are perhaps unaware of them. If they do exist, we should consider disseminating them widely so that decision-makers are aware if there are precedents for dual sourcing in their specific domain and how to incorporate them.



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