|  | United States General Accounting Office  |
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| GAO  | Testimony  |
|  | Before the Subcommittee on National Security,<br>Emerging Threats, and International Relations,<br>Committee on Government Reform, House of<br>Representatives |
| For Release on Delivery<br>Expected at 11:00 a.m. EDT<br>Monday, July 21, 2003 | JOINT STRIKE FIGHTER<br>ACQUISITION  |
|  | Managing Competing<br>Pressures Is Critical to<br>Achieving Program Goals  |
|  | Statement of Katherine V. Schinasi, Director<br>Acquisition and Sourcing Management  |





Highlights of GAO-03-1012T, a testimony before the Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform, House of Representatives

## Why GAO Did This Study

The Joint Strike Fighter (JSF) is a cooperative program between the Department of Defense (DOD) and U.S. allies for developing and producing next generation fighter aircraft to replace aging inventories. As currently planned, the JSF program is DOD's most expensive aircraft program to date, costing an estimated \$200 billion to procure about 2,600 aircraft and related support equipment. Many in DOD consider JSF to be a model for future cooperative programs.

To determine the implications of the JSF international program structure, GAO identified JSF program relationships and expected benefits, and assessed how DOD is managing challenges associated with partner expectations, technology transfer, and recent technical concerns.

### What GAO Recommends

GAO is not making recommendations in this testimony. In a report issued concurrently (GAO-03-775), GAO is recommending that the Secretary of Defense direct the JSF program office to ensure that international supplier planning anticipates and mitigates risks associated with technology transfer and that information concerning the selection and management of suppliers is available, closely monitored, and used to improve program outcomes. In comments on that report, DOD concurred with the recommendations.

#### www.gao.gov/cgi-bin/getrpt?GAO-03-1012T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Katherine V. Schinasi at (202) 512-4841 or schinasik@gao.gov.

# JOINT STRIKE FIGHTER ACQUISITION

## Managing Competing Pressures Is Critical to Achieving Program Goals

### What GAO Found

The JSF program is based on a complex set of relationships among governments and industries from the United States and eight partner countries. The program is expected to benefit the United States by reducing its share of program costs, giving it access to foreign industrial capabilities, and improving interoperability with allied militaries. Partner governments expect to benefit financially and technologically through relationships with U.S. aerospace companies and access to JSF program data.

Yet international participation also presents a number of challenges. Because of their contributions to the program, partners have significant expectations for financial returns, technology transfer, and information sharing. If these expectations are not met, their support for the program could deteriorate. To realize these financial returns, partners expect their industry to win JSF contracts through competition-a departure from cooperative programs, which directly link contract awards to financial contributions. However, recent actions by the prime contractor could indicate a departure from this competitive approach and a return to directed work share. Technology transfer also presents challenges. Transfers of sensitive U.S. military technologies—which are needed to achieve aircraft commonality and interoperability goals-will push the boundaries of U.S. disclosure policy. In addition, a large number of export authorizations are needed to share project information and execute contracts. These authorizations must be submitted and resolved in a timely manner to maintain program schedules and ensure partner industry has the opportunity to compete for subcontracts. Finally, recent technical challenges threaten program costs and possibly partner participation in the program. While partners can choose to share any future program cost increases, they are not required to do so. Therefore, the burden of any future increases may fall almost entirely on the United States. If efforts to meet any of these partner expectations come into conflict with program cost, schedule, and performance goals, the program office will have to make decisions that balance these potentially competing interests within the JSF program.

#### Joint Strike Fighter



Source: JSF Program Office.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here to discuss the Joint Strike Fighter (JSF) international acquisition strategy. DOD views the JSF program as both a model for acquisition reform and an example for the future of international cooperation. We have previously reported to you on how the JSF program is being managed relative to best practices for product development. Central to these best practices is the understanding that attainment of sufficient knowledge at key program junctures results in a low-risk path from design to production.

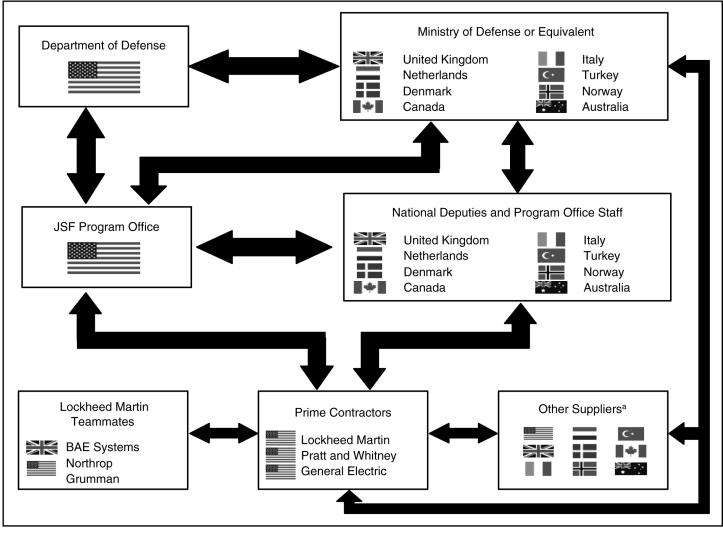
My statement focuses on the structure of the JSF program, the benefits and challenges cooperative development brings to the overall acquisition approach, and the opportunity DOD has to achieve critical program goals. We are also releasing a report today, done at your request, which addresses many of the issues I am discussing in this statement.

Because international participation adds complexity to already challenging acquisition programs, proponents of other DOD acquisition efforts are assessing the potential benefits of using the JSF model and incorporating key elements into their program strategies. Choices made to balance both partner expectations and overall program goals will be critical not only to the success of this program, but potentially for many future cooperative development efforts. DOD and the JSF Program Office need to ensure that sufficient knowledge is available and appropriately used in making these decisions.

## Background

The JSF program is DOD's largest cooperative program. It is structured on a multitiered set of relationships involving both government and industry from the United States and eight allied nations—the United Kingdom, Italy, the Netherlands, Turkey, Denmark, Norway, Canada, and Australia. These relationships are shown in figure 1.

### Figure 1: JSF Program Relationships



Source: GAO analysis of JSF program documents.

<sup>a</sup>Figure does not reflect relationships that the prime contractors may have with nonpartner countries.

|  | The JSF program structure was established through a framework<br>memorandum of understanding (MOU) and individual supplemental<br>MOUs between each of the partner country's defense department or<br>ministry and DOD, negotiating on behalf of the U.S. government. These<br>agreements identify the roles, responsibilities, and expected benefits for<br>all participants. The current negotiated agreement covers only the system<br>development and demonstration phase, and participation now does not<br>guarantee participation in future phases.  |
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|  | The program intends to produce three fighter variants to meet multiservice<br>requirements: conventional flight for the Air Force, short take-off and<br>vertical landing for the Marine Corps, and carrier operations for the Navy.<br>As currently planned, the program will cost about \$200 billion to develop<br>and procure about 2,600 aircraft and related support equipment.   |
|  | In October 2001, DOD awarded Lockheed Martin Aeronautics Company<br>a contract for the system development and demonstration phase. Pratt<br>and Whitney and General Electric were awarded contracts to develop the<br>aircraft engines. This phase is estimated to last about 10 years and cost<br>about \$33 billion; it will involve large, fixed investments in human capital,<br>facilities, and materials. The next significant knowledge point will be a<br>critical design review, currently planned for July 2005. At that time, the<br>aircraft design should be stable and engineering drawings should be<br>available to confirm that the design performs acceptably and can be<br>considered mature.  |
| United States and<br>Partners Expect<br>Significant Benefits | The United States and its partners expect to realize a variety of benefits<br>from cooperation on the JSF program. The United States expects to<br>benefit from partner contributions and potential future aircraft sales;<br>access to partner industrial capabilities; and improved interoperability<br>with partner militaries once the aircraft is fielded. Partner governments<br>expect to benefit financially and obtain an aircraft they could not afford<br>to develop on their own. Partners also expect to benefit from increased<br>access to JSF program data, defined influence over aircraft requirements,<br>and technology transfers to their industries from U.S. aerospace<br>companies. For the partners, industrial return, realized through JSF<br>subcontract awards, is critical for their continued participation in<br>the program. |

## United States Benefits from Financial Contributions and Access to Partner Industry

According to DOD and the program office, through its cooperative agreements, the JSF program contributes to armaments cooperation policy in the following four areas:

- Political/military-expanded foreign relations.
- Economic-decreased JSF program costs from partner contributions.
- Technical-increased access to the best technologies of foreign partners.
- Operational-improved mission capabilities through interoperability with allied systems.

DOD and the JSF Program Office expect to benefit financially from direct partner contributions and through aircraft purchased by partners and other international buyers, which reduces overall unit cost. Foreign countries become program partners at one of three participation levels, based on financial contribution, which the United States uses to defray program costs. For the current system development and demonstration phase, partner governments have committed to provide over \$4.5 billion to the JSF program and are expected to purchase 722 aircraft once the aircraft enters the production phase.<sup>1</sup> According to DOD, foreign military sales to nonpartner countries could include an additional 1,500 to 3,000 aircraft. Expected partner financial contributions and aircraft purchases are detailed in table 1.

<sup>&</sup>lt;sup>1</sup> Israel and Singapore have recently indicated their intention to participate in the program as security cooperation participants, a nonpartner arrangement, that offers limited access to program information, without a program office presence.

|                 | System development and demonstration |  |                           | Production           |                                |
|-----------------|--------------------------------------|--|---------------------------|----------------------|--------------------------------|
| Partner country | Partner<br>level                     | Financial<br>contributions<br>(in millions) <sup>®</sup> | Percentage of total costs | Projected quantities | Percentage of total quantities |
| United Kingdom  | Level I                              | \$2,056  | 6.2                       | 150                  | 4.7                            |
| Italy           | Level II                             | \$1,028  | 3.1                       | 131                  | 4.1                            |
| Netherlands     | Level II                             | \$800  | 2.4                       | 85                   | 2.7                            |
| Turkey          | Level III                            | \$175  | 0.5                       | 100                  | 3.2                            |
| Australia       | Level III                            | \$144  | 0.4                       | 100                  | 3.2                            |
| Norway          | Level III                            | \$122  | 0.4                       | 48                   | 1.5                            |
| Denmark         | Level III                            | \$110  | 0.3                       | 48                   | 1.5                            |
| Canada          | Level III                            | \$100  | 0.3                       | 60                   | 1.9                            |
| Total partner   |                                      | \$4,535  | 13.7 <sup>b</sup>         | 722                  | 22.8                           |
| United States   |                                      | \$28,565   | 86.3                      | 2,443                | 77.2                           |

#### Table 1: JSF Partner Financial Contributions and Estimated Aircraft Purchases

Sources: DOD and JSF program documents and Arms Export Control Act project certifications to Congress.

<sup>a</sup>Chart values do not reflect any nonfinancial contributions from partners.

<sup>b</sup>Percentages do not add due to rounding.

Contributions can be financial or nonfinancial. For example, Turkey's system development and demonstration contribution was all cash. Denmark contributed \$110 million in cash, and also the use of an F-16 aircraft and related support equipment for future JSF flight tests and the use of North Atlantic Treaty Organization command and control assets for a JSF interoperability study, which were valued to be worth an additional \$15 million to the program.

In addition, U.S. industry cooperation with aerospace suppliers in partner countries is expected to benefit the JSF program because of the specific advanced design and manufacturing capabilities available from those suppliers. For example, British industry has a significant presence in the program with BAE Systems as a teammate to Lockheed Martin and Rolls Royce as a major engine subcontractor. In addition, Fokker Aerostructures in the Netherlands is under contract to develop composite flight doors for the JSF airframe.

## Partners Benefit Financially and from Shared Technology and Information

Partner governments expect to benefit financially by leveraging significant U.S. resources and inventory requirements to obtain an advanced tactical aircraft they could not afford to develop on their own. From a government perspective, Level I and II partners have been guaranteed waivers of nonrecurring aircraft costs; Level III partners will be considered for a similar waiver.<sup>2</sup> All partners are also eligible to receive potential levies collected on future foreign military sales of aircraft to nonpartner customers.<sup>3</sup> In addition, and in most cases more importantly, partners have identified industrial return to in-country suppliers as vital to their participation in the program. In a recent study assessing the financial impact of the JSF program on international suppliers, DOD reported that partners could potentially earn between \$5 and \$40 of revenue in return for each dollar contributed to the program.

Through government and industrial participation, partner countries also expect to benefit from the technology transferred from U.S. to partner industry through JSF contract awards. Partners expect that early participation in the JSF program will improve their defense industrial capability through increased access to design, technical, and manufacturing data and through the ability to perform advanced planning for operation and support of the JSF once it is delivered in their respective countries.<sup>4</sup> Involvement in the early phases of the JSF program has provided partners with information on the development of aircraft requirements, program costs and schedules, and logistics concepts. International partners have access to program and technology information through participation on senior-level management decision-making bodies. representation in the JSF Program Office, and involvement on program integrated product teams. Partner program office personnel, regardless of participation level, have equal access to most information. Partner staff can request information from integrated product teams on which they have no membership, as long as the information is not restricted from being released to their countries.

<sup>&</sup>lt;sup>2</sup> The President of the United States may reduce or waive cooperative project nonrecurring costs in accordance with the Arms Export Control Act (22 U.S.C. 2761 and 2767).

<sup>&</sup>lt;sup>3</sup> According to DOD, final disposition of levies and nonrecurring costs for partners will be decided in production phase MOU negotiations.

<sup>&</sup>lt;sup>4</sup> Most partners have been involved in the JSF program since the concept development phase, which began in 1996.

| Program Challenges<br>Force JSF Program<br>to Balance Competing<br>Pressures  | International program participants have significant expectations regarding<br>government and industry return based on their contributions. As such,<br>the JSF Program Office and Lockheed Martin are faced with balancing<br>these expectations against other program goals. Recent actions by<br>Lockheed Martin to address partner concerns could represent a departure<br>from the JSF competitive contracting approach and result in increased<br>program costs. International participation in the program also presents a<br>challenge because the transfer of technologies necessary to achieve DOD's<br>goals for aircraft commonality is expected to far exceed past transfers of<br>advanced military technology. Further, export authorizations for critical<br>suppliers need timely planning, preparation, and disposition to help avoid<br>schedule delays in the program and ensure partners the opportunity to bid<br>for contracts.  |
|---|--|
| Alternate Contracting<br>Approach May be Used to<br>Meet Partner Expectations | DOD and the JSF Program Office have said that the use of competitive<br>contracting is central to meeting partner expectations for industrial<br>return and will assist in controlling program costs. JSF officials use<br>the term "best value" to describe this approach, which is a departure<br>from other cooperative development programs that guarantee<br>pre-determined levels of works based on contribution. <sup>5</sup> Partner<br>representatives generally agree with the JSF competitive approach to<br>contracting, but some emphasize that their industries' ability to win<br>JSF contracts whose total value approaches or exceeds their financial<br>contributions for the JSF system development and demonstration phase<br>is important for their continued involvement in the program. The program<br>office and the prime contractor have a great deal of responsibility for<br>providing a level playing field for JSF competitions, including visibility into<br>the subcontracts. To that end, Lockheed Martin performed assessments for<br>many of the partners to determine the ability of their industries to compete<br>for JSF contracts. The results of these assessments in some cases showed<br>potential return that far exceeded country contribution levels. In some<br>cases, Lockheed Martin then signed agreements with partner governments<br>and suppliers to document the opportunities they would have to bid for<br>JSF contracts, as well as the potential value of those contracts. |

<sup>&</sup>lt;sup>5</sup> This is not necessarily the same as best value under the Federal Acquisition Regulation, which is an acquisition that provides the greatest overall benefit in response to the requirement and can be obtained by using one or a combination of multiple source selection approaches.

DOD and the JSF Program Office have left implementation of the competitive contracting approach to Lockheed Martin whose decisions will therefore largely determine how partner expectations are balanced against program goals. In at least one case, Lockheed Martin has promised an international contractor predetermined work that satisfies a major portion of that country's expected return-on-investment. While disavowing knowledge of the specific contents of any such agreement, DOD was supportive of their use during partner negotiations. DOD officials conceded that the agreements contained in these documents departed from the competitive approach. However, the agreements were necessary to secure political support in some countries, since the U.S. government does not guarantee that the partners will recoup their investment through industry contracts on the JSF program. In addition, Lockheed Martin has recently developed a plan to use "strategic best value sourcing" to supplement its original competitive approach. According to DOD, this plan will allow for a limited number of work packages to be directly awarded to industry in partner countries where contract awards to date have not met expectations. While there are predetermined cost goals under these strategic awards, there are concerns from some partners that this is a departure from the competitive approach and, in fact, a move toward prescribed work share.

Because Lockheed Martin makes the subcontracting decisions, it bears the primary responsibility for managing partner expectations—in addition to duties associated with designing, developing, and producing the aircraft. Lockheed Martin's actions seem to indicate a response to partner concerns about return-on-investment expectations and a desire to ensure continued partner participation. Most partners have a clause in their agreements that allow for withdrawal from this phase of the program if industrial participation is not satisfactory. If a partner decided to leave the program, DOD would be deprived of the additional development funding expected from that partner. Lockheed Martin could be faced with lower than projected international sales, resulting in fewer units sold. At the same time, directed work share often results in less than optimal program results. For example, other coproduction programs such as the F-16 Multinational Fighter, which employ the traditional work share approach, often pay cost premiums in terms of increased manufacturing costs associated with use of foreign suppliers.<sup>6</sup>

<sup>&</sup>lt;sup>6</sup> U.S. General Accounting Office, F-16 Program: Reasonably Competitive Premiums for European Coproduction, GAO/NSIAD-90-181 (Washington, D.C.: May 14, 1990).

### JSF Stretches Disclosure Boundaries

The United States has committed to design, develop, and qualify aircraft for partners that fulfill the JSF operational requirements document and are as common to the U.S. JSF configuration as possible within National Disclosure Policy.<sup>7</sup> DOD and the JSF Program Office must balance partner expectations for commonality against the transfer of U.S. military technology. Decisions in this area will be critical because the extent of technology transfers necessary to achieve program goals will push the boundaries of U.S. disclosure policy for some of the most sensitive U.S. military technology. To address these issues, Lockheed Martin has a contract requirement to conduct a study to develop a partner JSF specification that fulfills commonality goals. Due to issues related to the disclosure review process, the contractor expects to deliver the study to the program office in August 2003, 5 months later than originally planned. According to DOD, the program has requested exceptions from National Disclosure Policy in some cases to achieve aircraft commonality goals and avoid additional development costs. Some DOD officials told us that technology transfer decisions have been influenced by JSF program goals, rather than adjusting program goals to meet current disclosure policy.

DOD, JSF Program Office, and Lockheed Martin officials agreed that technology transfer issues should be resolved as early as possible in order to meet program schedules without placing undue pressure on the release process. The program has taken steps to address potential concerns, including chartering a working group to review how past export decisions apply to the JSF program; identify contentious items in advance; and provide workable resolutions that minimize the impact to the program cost, schedule, or performance. However, partners have expressed concern about the pace of information sharing and decision making related to the JSF support concept. For example, according to several partners, greater access to technical data is needed so that they can plan for and develop a sovereign support infrastructure as expressed in formal exchanges of letters with the United States. The JSF program is conducting trade studies to further define the concept for how the JSF will be maintained and supported worldwide so that it can start to address these issues. According to program officials, this strategy will identify the best approach for maintaining JSF aircraft, and it may include logistics

<sup>&</sup>lt;sup>7</sup> Releasability reviews, such as the low observable/counter low observable review process for stealth technology, are necessary to transfer certain sensitive technologies and related design and manufacturing data to foreign countries and suppliers.

|  | centers in partner countries. Follow-on trade studies would determine the<br>cost of developing additional maintenance locations. The implementation<br>of the global support solution and the options identified in follow-on trade<br>studies will have to be in full compliance with the National Disclosure<br>Policy, or the program will need to request exceptions.  |
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| Export Control Process<br>Presents Challenges for<br>JSF Program | Authorization for export of JSF information to partners and international suppliers also present challenges for the program. In addition to the U.S. government determining the level of disclosure for partners and technology areas, JSF contractors must receive authorization to transfer data and technology through the export control process. Due to the degree of international participation at both a government and an industry level, a large number of export authorizations are necessary to share project information with governments, solicit bids from partner suppliers, and execute contracts. The JSF Program Office and Lockheed Martin told us that there were over 400 export authorizations and amendments granted during the JSF concept demonstration phase, and they expect that the number of export authorizations required for the current phase could exceed 1,000. Lockheed Martin officials told us that an increased level of resources has been required to address licensing and other export concerns for the program.   |
|  | Export authorizations for critical suppliers need to have timely<br>planning, preparation, and disposition to help avoid schedule delays<br>and cost increases in the program. Without proper planning, there could<br>be pressure to expedite reviews and approvals of export authorizations to<br>support program goals and schedules. In addition, advanced identification<br>of potential alternative sources for critical contracts could be an<br>appropriate action to prevent schedule delays in the event of unfavorable<br>approval decisions. Although it is required to do so, Lockheed Martin has<br>not completed a long-term industrial participation plan that provides<br>information on JSF subcontracting. Such a plan could be used to<br>anticipate export authorizations needed for international suppliers and<br>identify potential licensing concerns far enough in advance to avoid<br>program disruption or accelerated licensing reviews. Our work has<br>shown that past cooperative programs have experienced cost and<br>schedule problems as a result of poor planning for licenses. For example,<br>like the JSF, the Army's Medium Extended Air Defense System program<br>involves several sensitive technologies critical to preserving the<br>U.S. military advantage. That program failed to adequately plan for release<br>requirements related to those technologies and saw dramatic increases in |

approval times, which affected contractors' ability to use existing missile technology and pursue the cheapest technical solution.<sup>8</sup>

Timely disposition of export authorizations is also necessary to avoid excluding partner industries from competitions. While Lockheed Martin has stated that no foreign supplier has been excluded from any of its competitions or denied a contract because of fear of export authorization processing times or the conditions that might be placed on an authorization, the company is concerned this could happen. In fact, one partner told us that export license delays have had a negative effect on the participation of its companies because some U.S. subcontractors have been reluctant to take on the added burden of the license process. The U.S. subcontractors must apply for the export authorization on behalf of the foreign supplier, which can add time and expense to their contracts. Further, we were told that some partner companies have been unable to bid due to the time constraints involved in securing an export license.

The JSF program has attempted to address the additional administrative tasks associated with export authorizations by adding resources to help prepare applications and exploring ways to streamline the process. For example, Lockheed Martin received a global project authorization (GPA)—an "umbrella" export authorization that allows Lockheed Martin and other U.S. suppliers on the program to enter into agreements with over 200 partner suppliers to transfer certain technical data-from the Department of State. Approved in October 2002, implementation of the GPA was delayed until March 2003 because of supplier concerns related to liability and compliance requirements. In March 2003, the first GPA implementing agreement between Lockheed Martin and a company in a partner country was submitted and approved in 4 business days. JSF partners have expressed dissatisfaction with the time it has taken to finalize the conditions under which the GPA can be used and disappointment that the authorization may not realize their expectations in terms of reducing the licensing burdens of the program. As currently structured, the GPA does not cover the transfer of any classified information or certain unclassified, export-controlled information in sensitive technology areas such as stealth, radar, and propulsion.

<sup>&</sup>lt;sup>8</sup> U.S. General Accounting Office, *Defense Acquisition: Decision Nears on Medium Extended Air Defense System*, GAO/NSIAD-98-145 (Washington, D.C.: June 9, 1998).

| Technical Concerns<br>Could Affect<br>Program Costs and<br>Partner Participation | The Joint Strike Fighter program, and its implications for acquisition reform and cooperative development, is a good test of whether the desire for better outcomes can outweigh traditional management pressures. In our 2001 review of JSF technical maturity, we employed knowledge standards consistent with best practices and DOD acquisition reforms and found that several technologies critical to meeting requirements were not sufficiently mature. <sup>9</sup> The best practice for such a decision is to have a match between technologies and weapon requirements. At its recent preliminary design review, the JSF program uncovered significant problems with regard to various issues, including aircraft weight, design maturity, and weapons integration. Such problems have historically resulted in increased program costs, longer development schedules, or a reduction in system capabilities. While such actions can negatively affect the U.S. military services, the impact may be more substantial for partners because they have less control over program decisions and less ability to adjust to these changes. This may affect partners' participation in the program in a variety of ways. |
|--|---|
|  | First, the continued affordability of the development program and the<br>final purchase price are important for partners—both of which could be<br>affected by recent technical problems. There is no guarantee that partners<br>will automatically contribute to cost overruns, especially if the increase<br>is attributable to factors outside their control. Therefore, future cost<br>increases in the JSF program may fall almost entirely on the United States<br>because there are no provisions in the negotiated agreements requiring<br>partners to share these increases. Partner representatives indicated<br>that they intend to cooperate with the JSF Program Office and Lockheed<br>Martin in terms of sharing increased program costs when justified.<br>However, some partner officials expressed concern over the tendency of<br>U.S. weapon system requirements to increase over time, which results in<br>greater risk and higher costs. While some partners could fund portions of<br>cost overruns from military budgets if requested, others told us that even if<br>they were willing to support such increases, these decisions would have to<br>be made through their parliamentary process.      |
|  | DOD has not required any of the partners to share cost program<br>increases to date. For example, cost estimates for the system development<br>and demonstration phase have increased on multiple occasions since the   |

<sup>&</sup>lt;sup>9</sup> Joint Strike Fighter Acquisition: Mature Critical Technologies Needed to Reduce Risks, GAO-02-39 (Washington, D.C.: Oct. 19, 2001).

program started in 1996. During that time, the expected cost for this phase went from \$21.2 billion to \$33.1 billion as a result of scope changes and increased knowledge about cost. According to DOD, partners have not been required to share any of these costs because the changes were DOD directed and unrelated to partner actions or requirements. To encourage partners to share costs where appropriate, the United States has said it will consider past cost sharing behavior when negotiating MOUs for future phases of the program. If a partner refuses to share legitimate costs during the system development and demonstration phase, the United States can use future phase negotiations to recoup all or part of those costs. In these instances, the United States could reduce levies from future sales, refuse to waive portions of the nonrecurring cost charges for Level III partners, or in a worst case, choose not to allow further participation in the program. However, DOD officials have not committed to using these mechanisms to encourage cost sharing. Therefore, DOD may be forced to choose between accepting the additional cost burden and asking for additional partner contributions-which could jeopardize partner support for the program.

## Conclusion

The JSF program is not immune to unpredictable cost growth, schedule delays, and other management challenges that have historically plagued DOD's systems acquisition programs. International participation in the program, while providing benefits, makes managing these challenges more difficult and places additional risk on DOD and the prime contractor. While DOD expects international cooperation in systems acquisition to benefit future military coalition engagements, this may come at the expense of U.S. technological and industrial advantages or the overall affordability of the JSF aircraft. Over the next 2 years, DOD will make decisions that critically affect the cost, schedule, and performance of the program. Because Lockheed Martin bears the responsibility for managing partner industrial expectations, it will be forced to balance its ability to meet program milestones and collect program award fees against meeting these expectations—which could be key to securing future sales of the JSF for the company. In turn, DOD must be prepared to assess and mitigate any risks resulting from these contractor decisions as it fulfills national obligations set forth in agreements with partner governments. While some steps have been taken to position the JSF program for success, given its size and importance, additional attention from DOD and the program office would help decrease the risks associated with implementing the international program.

In the report we are releasing today, we recommend that DOD ensure that the JSF Program Office and its prime contractors have sufficient information on international supplier planning to fully anticipate and mitigate risk associated with technology transfer and that information concerning the selection and management of suppliers is available, closely monitored, and used to improve program outcomes. Toward this end, DOD and the JSF Program Office need to maintain a significant knowledge base to enable adequate oversight and control over an acquisition strategy that effectively designs, develops, and produces the aircraft while ensuring that the strategy is carried out to the satisfaction of the U.S. services and the international partners. Tools are in place to provide this oversight and management, but they must be fully utilized to achieve program goals.

DOD concurred with our report recommendations, agreeing to (1) ensure that Lockheed Martin's JSF international industrial plans are continually reviewed for technology control, export control, and risk mitigation issues and (2) work with Lockheed Martin to achieve effective program oversight when it comes to partner expectations and program goals. While we commend this proactive response, we note that DOD did not provide any detail as to the criteria to be employed for reviewing industrial plans. In addition, DOD did not specify how it plans to collect and monitor information in suppliers or elaborate on other steps the JSF Program Office would take to identify and resolve potential conflicts between partner expectations and program goals.

Through decisions made on the Joint Strike Fighter program today, DOD will also influence other acquisition programs like the Missile Defense Agency's suite of land, sea, air, and space defense systems and the Army's Future Combat System. These programs will potentially shape budgetary and strategic military policy for the long term, and as such, need to use every tool available for success. Adopting knowledge-based policies and practices with regard to these critical acquisition programs is an important first step to ensuring that success.

|                                 | Mr. Chairman, that concludes my statement. I will be happy to respond to<br>any questions you or other Members of the Subcommittee may have.  |
|---------------------------------|---|
| Contacts and<br>Acknowledgments | For future questions regarding this testimony, please contact Katherine<br>Schinasi, (202) 512-4841. Individuals making key contributions to this<br>testimony include Tom Denomme, Brian Mullins, and Ron Schwenn. |

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