

GAO

Report to the Chairman, Committee on
Armed Services, House of Representatives

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CONTRACT MAINTENANCE

Improvement Needed in Air Force Management of Interim Contractor Support



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**National Security and
International Affairs Division**

B-248766

August 26, 1992

The Honorable Les Aspin
Chairman, Committee on Armed Services
House of Representatives

Dear Mr. Chairman:

Your Committee's May 1991 report on the fiscal years 1992 and 1993 Defense Authorization Act expressed concerns about increasing interim contractor support (ICS) costs and related management and funding problems. As you requested, we evaluated the Air Force's ICS program and costs to (1) identify factors contributing to ICS costs, (2) examine Air Force ICS planning and management for selected weapon systems, and (3) assess Air Force and Department of Defense (DOD) initiatives to improve ICS management and limit costs.

Background

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The Air Force, like the Army and the Navy, supplements its in-house maintenance capability through contractor support, either for a temporary period or for the life of a system, equipment, or component. Temporary support, known as interim contractor support, is used when the Air Force has made the decision to eventually maintain the material in-house—that is, in government facilities with government personnel. Thus, ICS is temporary maintenance and logistics support that a contractor provides until the items can be supported at operating bases and maintenance depots by government personnel. Air Force ICS program costs, including contractor management costs, repairs, and materials, are currently funded in the operation and maintenance appropriation. Contractor-provided items such as reparable spares that may be used to support ICS repairs are not funded through the Air Force ICS program.

Department of Defense Instruction 5000.2 and Air Force Regulation 800-21 provide policy on interim contractor support. According to the Air Force regulation, ICS use is justified for Air Force systems when (1) the system or support equipment design is not stable and the Air Force does not want to invest in support resources when requirements are uncertain and subject to change or (2) the in-house support resources (such as spares, support equipment, technical data, and trained repair personnel) are not available when support is first required. Not having in-house support resources might occur when the production and deployment schedules did not allow enough lead time to develop and acquire the resources. Both DOD and Air Force policies require that ICS be planned well

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in advance and kept to a minimum, both in total cost and in the period of time a system requires contractor support.

The System Program Director is responsible for planning and managing the ICS program, including identifying and obtaining the initial logistical resources to ensure that a system is both supported and supportable when fielded. Officials should consider mission requirements, costs, current maintenance work loads, and existing capabilities in deciding whether the new system should be supported by operating bases and maintenance depots or by contractors.

In a 1983 hearing before the House Committee on Appropriations, Subcommittee on Defense, members criticized the Air Force for increasing ICS costs and the length of time some systems required this temporary support. Several contributing factors were cited, including (1) poor up-front planning, (2) trade-offs and deferrals of support resources to cover cost increases in other parts of the program, (3) program managers not having direct control over some support elements, and (4) managers not being held accountable for the impacts of their decisions on long-term support requirements. Cost studies at that time indicated that repairing items in-house was cheaper than noncompetitive procurement of repair services from the prime contractor or the original equipment manufacturer.

The Air Force agreed that ICS was being programmed for longer periods than in the past. Air Force officials cited the increasing emphasis on concurrent development and production and on compressed fielding schedules that resulted in a need to support items before the designs were stable and the in-house resources obtained. These officials promised improvements in planning and managing ICS.

Results in Brief

Despite congressional criticism in 1983, Air Force ICS costs have continued to increase each year, more than tripling between fiscal years 1985 and 1992 to an estimated \$328 million. The B-1B program has received almost one-half of total Air Force ICS funding over this period (\$811 million of \$1.64 billion). Although Air Force officials project fewer funding requirements in the future, this projection depends on there being sufficient funding to transition remaining B-1B systems to in-house support, no new systems being started, and no additional ICS requirements added for existing programs. These assumptions are optimistic and are not likely to be achieved. However, improved acquisition support planning

could better assure that ICS is only used when appropriate, cost-effective, and timely.

Conditions identified in 1983 that increase costs and prolong the time ICS is required are still apparent today. For example, poor support planning, concurrent development and production, deferred acquisition of support resources, and budget cuts in support items contributed to the B-1B's difficulties and delays in achieving in-house maintenance capability. The B-1B will eventually require 17 years or more of ICS at costs much greater than initially estimated. On the other hand, while planning for in-house work loads at the depot level has lagged, C-17 officials have done a credible job in directing the transition to an in-house capability at the operating base level by planning early, funding support equipment and spares, and encouraging the contractor to provide an early in-house capability.

ICS can be an effective tool to minimize facility investment until system design is stable and firm support requirements are established. However, a failure to obtain a timely transition from ICS capability when eventual government repair is planned can increase long-term support costs and impair readiness. Recent Air Force initiatives to improve ICS planning and management have merit, but additional efforts can be initiated to ensure that ICS use is appropriate and that in-house capability is attained in an economical and timely manner.

Factors Contributing to Increased ICS Costs

Despite congressional criticism and Air Force efforts to make reductions, annual ICS costs have continued to steadily increase to the current year. Figure 1 shows the Air Force ICS obligations, in total, from fiscal year 1985—the first budget year following the 1983 hearings—to the present. (The amounts for fiscal year 1992 are the current estimates.) The amounts include only costs allocated under the ICS program and do not include the acquisition of other material required to support the ICS effort, such as initial spares and support equipment.

Figure 1: Total U.S. Air Force Interim Contractor Support Costs From 1985 Through 1992

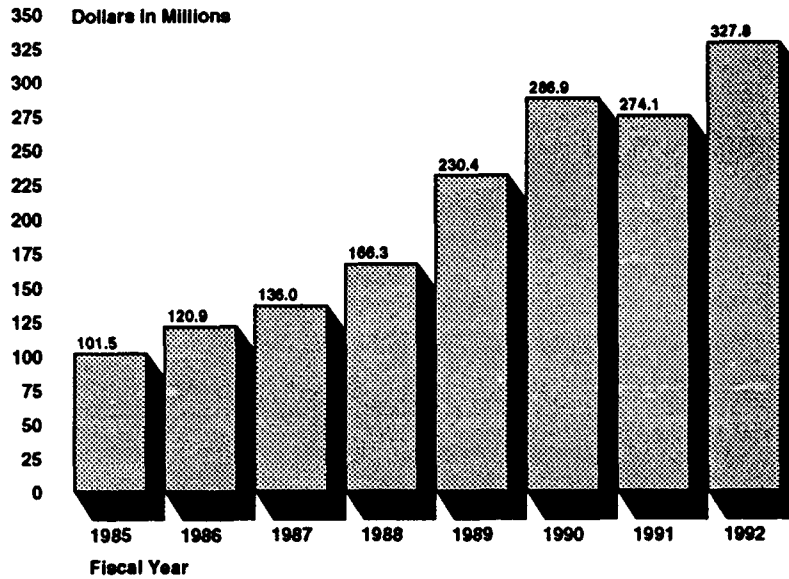


Table 1 shows individual ICS obligations over the same period for selected weapon systems.

Table 1: U.S. Air Force Interim Contractor Support Costs for Selected Systems

Dollars in millions

	Fiscal year							
	1985	1986	1987	1988	1989	1990	1991	1992
B-1B	43.0	53.8	79.0	104.5	122.4	166.8	138.6	102.9
B-52	3.0	12.3	13.0	11.4	20.1	12.4	25.7	9.9
F-15	1.6	1.5	3.9	4.7	15.3	23.9	33.1	29.6
F-16	19.2	23.6	9.5	5.2	6.0	6.5	8.9	8.5
F-111	8.9	5.8	9.1	4.1	17.8	16.1	3.2	10.2
B-2	0	0	0	0	0	11.3	6.5	51.5
C-17	0	0	0	0	0	3.2	.2	10.0

We identified the following key factors related to ICS cost increases.

- The B-1B has experienced developmental problems and delays transitioning to in-house maintenance, including difficulties in obtaining funding for support resources.

- Continuing major equipment enhancements and modifications for the F-15, B-52, F-16, and F-111 and other aircraft prolonged ICS for these systems.
- New systems, including the B-2 and C-17, resulted in the initiation of what would appear to be long-term ICS.
- The number of weapon systems and projects receiving ICS funding more than quintupled from 12 in fiscal year 1985 to 69 in fiscal year 1991. According to Air Force Logistics Command officials, ICS policy was liberalized in 1987 to facilitate access to funds for non-major and lower cost programs, such as individual equipment items and modifications for the Special Operations Forces.
- The defense buildup beginning in 1981 contributed to the increase in demand for ICS funding as new systems were fielded.
- The predominance of concurrency in the weapon system acquisition process, wherein systems were produced before they were completely developed and tested, resulted in the planning and acquisition of logistics support resources generally lagging further behind the fielding of the weapon system.

Air Force officials now project a gradual decline in annual ICS requirements to less than \$200 million by fiscal year 1997. This decline, however, depends on (1) sufficient funding to transition remaining B-1B systems to in-house support, (2) no new systems started, and (3) no additional requirements for current programs. For many reasons this projection is optimistic. For example, B-1B program officials currently estimate ICS funding requirements for the defensive avionics system to be about \$123 million for fiscal years 1994 through 1997 while Air Force budget projections include only about \$33 million for that same period. Also, out-year projections for ongoing ICS programs have been conservative, increasing significantly as the year of execution approached. One official noted that as a rule of thumb ICS programs typically cost twice as much and/or last twice as long as originally estimated.

On the other hand, opportunities to reduce future ICS should be enhanced by recent international events such as the breakup of the former Soviet Union and subsequent initiation of demilitarization initiatives in former Soviet states. The need to produce new systems quickly is now less urgent than in the past, since the United States no longer faces a global adversary able to field large quantities of advanced weapons. As a result, DOD can take more time before moving new weapons into production and fielding—concentrating on research and development, operational testing, and more cost-effective support planning.

Finally, the "fly before buy" concept—wherein prototypes of a weapon are built and adequately tested before systems are fielded—has been endorsed in basic DOD acquisition regulations and by the Packard Commission, the Defense Management Review, and us. Increased application of this concept can promote better integration of logistics support planning with operational fielding, greatly reducing the number of times when production and deployment schedules dictate fielding systems without allowing adequate time to develop and acquire the spares, support equipment, and technical data needed to establish timely and cost-effective in-house support capability. However, while there may be less concurrency—and potentially less ICS—in the future, there is little evidence to indicate that ICS costs for those systems currently in development and production will be significantly reduced.

Problems and Successes in Planning and Managing Current ICS Programs

We reviewed three of the largest ICS programs—B-1B, C-17, and F-15—and found that problems similar to those cited in 1983 contributed to increased ICS costs and prolonged reliance upon ICS. These problems included lack of planning, low priority for support needs, concurrent development and production efforts and/or compressed fielding schedules, and budget reductions in support resources. Total ICS costs and the period of time ICS will be needed increased on all three programs compared to original estimates. For the C-17, we found that officials appeared to be planning and contracting for the early transition to an in-house capability at the base but not the depot level.

In a series of reports¹ on the B-1B, we identified inadequate support plans and delays in acquiring support resources as factors contributing to readiness and supportability problems and a prolonged costly reliance upon ICS. We reported that concurrent development and production phases resulted in support decisions being made before a logistics support analysis was completed and before sufficient data were available. A requirement to stay within the cost ceiling also led the Air Force to exclude depot support costs from the baseline and defer the acquisition of support resources. Continuing problems and delays in developing and acquiring support elements, exacerbated by DOD funding reductions and congressional withholding of funds, further prolonged reliance upon ICS for the B-1B program.

¹Strategic Bombers: Logistics Decisions Impede B-1B Readiness and Supportability (GAO/NSIAD-89-129, May 19, 1989). This report cites other related GAO reports.

What had been estimated in 1983 as a 5-year \$355 million effort has grown into a \$1.57 billion requirement expected to last 17 years or more. (Amounts are expressed in constant fiscal year 1992 dollars.) In addition, Air Force officials investigating a 1988 accident on a B-1B undergoing maintenance at the Oklahoma City Air Logistics Center attributed the accident, in part, to inadequately trained workers and lack of verified repair instructions—both critical elements to an effective in-house repair capability.

The major ICS efforts on the F-15 involve support for the E-model, a new radar, and improvements to the C- and D-models. ICS funding for improvements on the F-15 began in 1985 and on the F-15E in 1987; both efforts are expected to continue until 1998. Program officials cited the degree of concurrency, the compressed schedule for fielding, and the delays in achieving a stable design as reasons for extending ICS requirements. Officials also said that Office of the Secretary of Defense budget reductions in fiscal years 1990 and 1991 extended the ICS effort another 3 years. Program officials decided to take the unspecified cut in support budgets, thereby deferring the acquisition of support equipment. The last F-15E is expected to be delivered in 1993, but a full depot maintenance in-house capability is not expected to be achieved before 1998.

Our review of the C-17 program determined that progress has been made toward achieving the capability to maintain this aircraft at operating bases with a minimum of ICS. C-17 officials began planning for the in-house maintenance capability at operating bases early in the development program, employing a "support by capability" concept to tie specific contractor actions to the fielding schedule. The Air Force and the prime contractor, Douglas Aircraft Company, negotiated priced options on the full scale engineering development contract. Contract provisions and prices were structured to motivate the contractor to provide the in-house base level support capability when required. The contractor must deliver the spares, support equipment, and verified technical orders for the Air Force to assume some maintenance responsibilities upon start up of the initial operating squadron and achieve the full planned maintenance capability at the operating base a year later or the contractor is liable for any additional base level ICS costs. The contractor began setting up repair vendor networks, procuring spares and repair parts, and developing base support plans in 1988. Current C-17 program planning documents indicate the program is on target to enable the Air Force to begin base maintenance operations in December 1992 at the initial operating location and take over

the full work load by December 1993. While slippage in delivery has occurred and may delay fielding, the base level support planning appears to be on target with the planned fielding date.

In contrast, planning and acquiring the resources needed for transitioning the C-17 to an in-house depot maintenance capability have not been as intensive or as successful, and they will result in a prolonged reliance on depot level ICS. Program officials deferred actions on depot planning, waiting until the production phase was underway to identify specific support equipment, technical orders, training, and facilities that would be needed to establish in-house depot support capability.

Only recently have C-17 program officials made concerted efforts to bring structure to the depot effort and to specify support elements in contracts. They developed the depot transition plan in 1990 and directed the prime contractor to prioritize major components and subsystems based on repair costs and failure rates, identify the support resources needed, and submit contract change proposals to transition from contract to in-house maintenance on an item-by-item basis with delivery due dates. However, Air Force maintenance officials identified items they could begin repairing at a depot almost immediately if the required depot resources were in place.

Depot level ICS originally was expected for 3 years after start up of the initial operating squadron. Program officials now project ICS will last at least 8 years (through 1999) and cost about \$355 million. Program officials cited reductions in the total number of C-17s to be procured, decreased annual deliveries, contractor design delays, and congressional budget cuts in ICS and investment spares as contributing to the extended period of time that ICS will be required. They delayed depot activations for an additional 2 years because of a delay in the fielding schedule and because the decreased amount of repairs expected from fewer delivered aircraft would make it uneconomical to begin depot support as planned.

In addition, the high degree of concurrency in the C-17 program increases the risk of unforeseen changes further extending ICS. Production began in 1988 before the first ground and flight tests were conducted, and testing will continue into 1994. The baseline configured aircraft, which was used to design and develop the peculiar support equipment and other support resources, is expected to be delivered in December 1992, with an initial operating capability date in September 1994.

Air Force Initiatives to Better Manage and Limit ICS Costs

Citing the B-1B experience as symptomatic of ICS problems that had gone on too long, an Air Force team assembled in late 1990 to study the ICS program and recommend improvements. The team identified problems and underlying causes similar to those cited during the 1983 hearing, including poor and uncoordinated planning, split in management and funding authority between acquisition and support officials, emphasis on fielding systems early, and lack of accountability. In March 1991, the team presented Air Force management with a set of recommendations to improve planning and management processes and to realign program authority and funding for initial support elements under the program manager's direct control. These recommendations are highlighted in table 2 along with a brief comment on their current status.

Table 2: Air Force Team ICS Recommendations and Status

Recommendation	Status
Transfer ICS funds from operation and maintenance to procurement accounts.	Funds transferred in fiscal year 1992/1993 amended defense budget. Congressional approval of the transfer is uncertain.
Provide initial spares funds/ obligational authority to program managers.	Funds allocated to programs in fiscal year 1993. Stock fund obligation authority is scheduled to be provided in fiscal year 1994.
Provide initial common support funds to program manager.	Funds scheduled to be moved to program lines by October 1995. Automated system to compute requirements is in development.
Implement integrated logistics support by subsystem.	Interim guidance was provided in March 1992. formal guidance is currently being developed.
Approve policy and update guidance for single acquisition manager for initial support.	Air Force acquisition policy letter issued in June 1991. Air Force regulations being revised.
Add support milestones and signature requirements for support officials to acquisition program baselines.	Proposed Air Force guidance will require identification of support milestones in the baselines.
Include depot support requirements in operational requirements document.	Regulation being revised.
Provide for joint program manager and system program manager comments in the Defense Acquisition Executive Summary.	Concept rejected. System program manager comments said to be more appropriately included in Acquisition Executive Monthly Review.

The first—and primary—recommendation made by the ICS team involves the transfer of program funding from the operation and maintenance appropriation to the appropriate procurement accounts. The Office of the Secretary of Defense, in Program Budget Decision 721 (dated Dec. 9, 1991), approved this action and directed all three military departments to

transfer ICS funding. The fiscal year 1993 defense budget reflects the transfers and identifies ICS operating and maintenance costs to their individual weapon system procurement line items. The transfers included \$274.1 million for the Air Force, \$118.2 million for the Navy, and \$27.4 million for the Army. Officials believe passage of the budget without comment would constitute congressional approval of the transfers.

DOD officials believe that funding ICS in individual procurement line items will improve management by aligning resources with the program manager's authority and responsibility and will also better reflect the total cost of acquiring a new weapon system. The program manager would have increased flexibility on the use of funds and a more stable program because procurement funds are available for obligation for 3 years, while operation and maintenance funds are available for only 1 year.

However, there are also arguments against the transfer of ICS from the operation and maintenance appropriation to the procurement appropriation. For example, some see a negative side to providing program managers more funding and more flexibility—noting that program managers could use the additional funding for other program priorities and continue to defer the acquisition of support resources. This funding realignment would also make it more difficult to track total ICS and total maintenance costs and would reduce DOD's flexibility in managing the operation and maintenance appropriation, since ICS funds have been used as an "emergency cushion" for funding unforeseen changes and new operational requirements. Finally, some question the appropriateness of funding recurring annual maintenance costs with procurement dollars.

Air Force officials believe effective implementation of the other ICS team recommendations as well as related initiatives should ameliorate arguments against transferring the funds. For example, adopting the logistics support by subsystem approach—similar to C-17 contract efforts—is expected to improve transition efforts by better coordinating the acquisition of support resources with delivery due dates. Adding support milestones to the acquisition program baseline and holding the program director accountable for missed support dates are also expected to help ensure that support requirements receive appropriate priority and are not unwisely deferred. Finally, the Air Force believes the formation of the Air Force Materiel Command and its cradle-to-grave integrated weapon system management approach, centralizing life-cycle program management in a single office, should also improve the coordination of acquisition and logistics functions and concerns.

Our review indicated that taken as a whole the Air Force recommendations address many of the problems that in the past have resulted in prolonging and increasing ICS use. They are also consistent with DOD policies empowering the single manager for acquisition, with recent streamlining and improvement efforts such as the Packard Commission and the Carlucci initiatives, and with the Air Force Materiel Command's plans for life-cycle management of weapon systems. The Air Force recommendations are also in line with congressional and our calls for more accurate information on the full cost of acquiring a system. While Congress recently supported the Army's Total Package Fielding program, a similar approach to identify and fund initial support elements in procurement budgets to better reflect total acquisition costs, it is uncertain whether it will approve the transfer of ICS funds from the operation and maintenance appropriation to the procurement appropriation.

However, the ICS team recommendations do not represent new ideas. While problems and solutions were mentioned in the previously cited 1983 hearings, improvement initiatives in the past have not proven successful. Effective implementation and commitment are necessary if the most recent recommendations are to be successful. Moreover, additional actions and safeguards are necessary to provide continued visibility of ICS costs and proper oversight if ICS funding is moved from the operation and maintenance appropriation to the procurement appropriation.

For example, continuing to separately identify ICS costs within each weapon system line item appears to be a practical way to maintain oversight of ICS. Some Air Force officials said they do not believe the Air Force will separately identify ICS on a weapon system basis, while others noted that such visibility is needed. We believe that continuing to identify ICS and other initial support costs as elements of the weapon system line item would be useful in highlighting overall problems in developing and acquiring logistic support and in providing oversight and tracking of ICS and other support costs.

Another Air Force team recommendation would add required in-house support dates and milestones to the approved program baseline schedule to help ensure that support is properly considered throughout the acquisition process. However, specific exit criteria for assessing how well support needs have been met—which is important to assist decision-makers in deciding whether to proceed to the next acquisition phase—are not yet available. Air Force officials are currently developing

supportability exit criteria for review and approval by acquisition executives.

Additionally, we believe ICS management could be improved by the development of policy guidance regarding how long ICS should continue for specific weapons, equipment, or components. Since ICS is intended to be temporary, it appears reasonable to establish some limitations for how long this condition can be prolonged. Under the proposed new concept of funding ICS with procurement funds, there are even stronger arguments for limiting the length of time during which procurement appropriations should be used to fund these operational costs. As early as the 1983 congressional hearings, there were discussions regarding what period of time is appropriate for continuing ICS. At that time, the then Commander of the Air Force Logistics Command suggested 4 to 5 years as an optimum period of time for continuing ICS on a new system. If long-term contractor support is required, there are more cost-effective contracting approaches than those used for ICS. For example, contractor logistics support is an approach designed for life-cycle support by a contractor.

We did not review the process used to analyze logistics requirements and determine whether to repair items in-house or by a permanent contractor logistics support effort. However, Air Force officials noted that comprehensive cost studies that should be considered in the process of making decisions about the source of required maintenance activities are rarely done. If done properly, cost comparisons and periodic reassessments of the support location decision would help ensure the appropriateness and cost-effectiveness of a chosen maintenance concept. For programs with extended reliance on ICS, a reassessment of the cost-effectiveness of acquiring in-house support capability might determine that contractor support should be continued for the life of the system. In those instances, extended contractor maintenance should no longer be categorized as ICS but rather should become contractor logistics support and be funded by the operation and maintenance appropriation.

Alternatively, by reexamining support requirements and capabilities and reprioritizing in-house activation schedules, the Air Force could identify items that can be transitioned sooner to in-house repair. Items repaired under ICS contracts that are similar to items currently being repaired in in-house depots, items with high repair costs, and those with high failure rates might be good candidates. Logistics Command officials noted that it is usually cheaper to repair items in-house rather than by a contractor.

Matters for Congressional Consideration

To improve ICS planning and management and at the same time retain proper oversight and visibility of ICS funding, Congress may wish to approve the transfer of ICS funding from the operation and maintenance appropriation to the procurement appropriation and the realignment of initial support elements to the weapon system line items. However, to assure adequate visibility of these operational costs and timely transition to operation and maintenance funding, Congress may also want to require the Office of the Secretary of Defense to continue separately identifying ICS and other initial support costs in budgets, explain the reason ICS funding is requested for each weapon system, and specify the period of time it is scheduled to be needed.

Recommendations

To better ensure that support needs are fully considered during acquisition and to limit the amount of time ICS is needed, we recommend that the Secretary of Defense (1) program and budget sufficient funding to ensure that the needed in-house repair capability at bases and depots is established to meet planned in-house support dates and (2) revise DODI 5000.2 to require each weapon system's acquisition program baseline to include support capability dates for each level of planned maintenance. These dates should serve as the basis against which to assess the adequacy of support planning as well as the development and procurement of the logistics resources required to establish in-house repair capability.

We also recommend that the Secretary of Defense require the Secretary of the Air Force and other service secretaries as appropriate to (1) clarify policy guidance to specify the reasons and guidelines for use of ICS, including goals for the amount of time ICS should reasonably be required; (2) ensure that proper emphasis is given to planning and developing depot resources concurrent with planning efforts for the operating bases; (3) develop and refine supportability exit criteria and critical support tasks for use in milestone decisions and program reviews; (4) review current ICS work loads to identify tasks that could be transitioned to in-house support more quickly; and (5) reevaluate the logistics support concept decision during the ICS period if significant changes occur in a program that could impact the cost-effectiveness of the selected logistics support concept decision (such as changes in procurement quantities and costs, failure rates, industrial base considerations, and weapon system basing concepts).

Agency Comments

We did not obtain agency comments that were fully coordinated within DOD. However, we did discuss a draft of this report with DOD and Air Force program officials who generally agreed with our findings, conclusions, and recommendations. They acknowledged that more care must be taken to safeguard against temporary fielding support being inappropriately prolonged, but they felt they needed some flexibility in establishing reasonable goals for completing ICS activities. They also indicated that congressional decisions to withhold support funding for an entire program because of problems in one subsystem contributed to the Air Force's extended reliance on ICS for components that otherwise could be transitioned. For example, they noted that withholding all B-1B logistics support because of problems in one critical system is continuing to delay the transition of B-1B components from ICS to in-house depot maintenance.

A detailed discussion of our scope and methodology is contained in appendix I.

As agreed with your office, we plan no further distribution of this report until 7 days from the issue date, unless you publicly announce its contents earlier. At that time we will send copies to the Secretaries of the Air Force, Army, Navy, and Defense and to other congressional committees. We will also make copies available to others upon request.

Please contact me at (202) 275-4268 if you or your staff have any questions regarding this report. Major contributors are listed in appendix II.

Sincerely yours,



Nancy R. Kingsbury
Director
Air Force Issues

Scope and Methodology

We conducted our review from October 1991 to June 1992 in accordance with generally accepted government auditing standards. To determine ICS costs funded by the operation and maintenance appropriation and projected requirements, we obtained historical cost information, programming documents, and budget submissions. We summarized project funding summaries and tabulated relative cost impacts. We discussed changes in funding policies and procedures with Air Force and Office of the Secretary of Defense officials.

To evaluate current efforts to plan and manage ICS programs, we selected the B-1B and the F-15 systems partly because of the size of their past and projected efforts. Also, Air Force officials cited the B-1B as exemplifying many of the ICS problems they are trying to correct. The C-17 is a major system soon to be fielded that is expected to incur significant future ICS costs. Command officials said that C-17 program officials were trying to implement innovative and effective ICS planning and management techniques. We did not evaluate the C-17 program office's methodology for computing investment spares to be used to support the ICS program.

Because the Air Force was completing a comprehensive improvement effort, we focused on determining the reasons, the status of implementation, and the expected results of this effort. We compared the improvement initiatives with various documented problems to identify potential gaps in the Air Force's efforts and to identify areas that have not been adequately addressed. We related these efforts to Department of Defense policies, streamlining initiatives, past improvement efforts such as the Packard Commission and the Carlucci initiatives, and congressional and our interests in more fully accounting for the total costs of system acquisition.

We visited or received information from Air Force Headquarters, Washington, D.C.; Headquarters, Air Force Logistics Command, Aeronautical Systems Division Headquarters, and the C-17 and F-15E System Program Offices, all located at Wright-Patterson Air Force Base, Ohio; the B-1B System Program Management Division at Oklahoma City Air Logistics Center, Oklahoma; the F-15C/D System Program Management Division at Warner Robins Air Logistics Center, Georgia; C-17 support office, DOD contract office, and Douglas Aircraft Company, Long Beach, California; and Hughes Aircraft Company, Long Beach, California.

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