United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Defense, Committee on Appropriations, House of Representatives

June 1991

COMMUNICATIONS ACQUISITION

Army Needs to Ensure Economy in SINCGARS Radio Procurement

GAO/NSIAD-91-119

GAO

United States
General Accounting Office
Washington, D.C. 20548

National Security and
International Affairs Division

B-244124

June 21, 1991

The Honorable John P. Murtha
Chairman, Subcommittee on Defense
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

This report addresses the Army's acquisition strategy for the Single Channel Ground and Airborne Radio System (SINCGARS) combat net radio. It also discusses the potential quantities of SINCGARS that may be required.

As requested, we plan no further distribution of this report until 10 days after its issue date, unless you publicly announce its contents earlier. At that time, we will send copies to the Secretary of Defense; the Secretaries of the Army, the Navy, and the Air Force; appropriate congressional committees; and other interested parties.

Please contact me on (202) 275-4841 if you or your staff have any questions concerning this report. The major contributors to this report are listed in appendix II.

Sincerely yours,

Louis J. Rodrigues
Director, Command, Control, Communications,
and Intelligence Issues

Executive Summary

Purpose

The Army's Single Channel Ground and Airborne Radio System (SINCGARS) radio acquisition program is expected to cost $3.1 billion through 1998. Because of continuing congressional interest in SINCGARS procurement, GAO reviewed (1) the current SINCGARS acquisition strategy and (2) the Army's progress in reducing SINCGARS radio quantities.

Background

SINCGARS is the Army's new generation of very high frequency, jam-resistant combat net radios that will be used by troops on the ground, in vehicles, and aboard aircraft. As of December 1989, the Army had planned to spend $6.5 billion on the SINCGARS program to field 351,000 ground radios and 14,000 airborne radios by fiscal year 2004. However, because of the changes in the world situation and the resultant threat, the quantity requirements for SINCGARS were reduced in July 1990 to 246,000 ground radios and 10,000 airborne radios for a proposed 22-division force. As of December 1990, the Army expected to spend $3.1 billion on the SINCGARS program to field 141,500 ground radios and 8,500 airborne radios by fiscal year 1998 to first-to-fight forces. The configuration for the remaining 106,000 radios, which represents the balance of the revised quantity requirements, will be determined later.

The radios are produced by ITT Corporation, the initial contractor, and by General Dynamics Corporation (GD), the second-source contractor. The last options (full-rate production) of the current ITT ground and airborne radio contracts were exercised in December 1990 and January 1991, respectively, while the first (low-rate production) of three options of the GD ground radio contract was exercised in March 1991. The Army plans to award a sole-source contract to ITT to prevent a break in ITT's production while GD completes its initial contract. After ITT completes its sole-source contract and GD completes its contract, they will be in competition for additional contracts.

The Army believes that the GD second-source strategy will provide competition for ITT, technology improvements, and an increased capability to meet production and fielding schedules. GD's ground radios are to look and perform like the ITT version, even though their internal parts are different.

Results in Brief

The Army acquisition strategy includes awarding a sole-source contract to ITT to prevent a break in production while GD completes its current contract. Limiting ITT's procurement under the sole-source contract to

the current annual production rate until competition can be achieved could result in savings through competitive pricing.

Reacting to proposed force structure reductions, the Army, in July 1990, reduced the quantity requirements for SINCGARS. Based on continued changes in the world situation and continued easing of East-West tensions, the Army, in February 1991, proposed further reductions in force structure. This change should lead to more reductions in SINCGARS radio quantities.

Further, emerging technologies for future radio development could reduce SINCGARS quantity requirements. The Army concluded in a study that the global positioning capability can be integrated into SINCGARS. This capability will be considered along with other emerging technologies when deciding on the configuration for the remaining 106,000 radios needed to meet current quantity requirements. Given that the Army's dual-source acquisition strategy was based on larger quantity requirements for SINCGARS, further reductions in the requirement could result in a reduced potential for cost savings through dual-sourcing. Further SINCGARS reductions would require the Army to re-evaluate its dual-source acquisition strategy.

Principal Findings

Need to Ensure Economy in Near-Term Procurement

Because one contractor cannot produce the number of SINCGARS ground radios by 1998 that the Army and other services believe are needed, the Army has required a dual-source strategy. According to Army documents, one contractor can only produce 16,500 ground radios per year; however, the Army and the other services need about 24,500 radios per year. To initiate competition, the Army had awarded a second-source contract to GD to produce SINCGARS radios, and plans a competition between ITT and GD in fiscal year 1994. To achieve this strategy, the Army plans to issue a sole-source contract to ITT in February 1992 and an option in February 1993 to keep ITT's SINCGARS production lines operating. This sole-source contract and option could total 33,000 radios or up to 16,500 radios per year. The Army believes it must issue the sole-source contract because production under the current ITT contract would expire before the award of the follow-on competitive contracts to both contractors. While GAO recognizes the rationale for the sole-source contract, GAO believes that limiting procurement of radios under the ITT

sole-source contract to the current annual production rate of 12,000 could provide the Army with the opportunity to later competitively buy more of the best radio at the lowest possible price.

Declining Force Structure and Future Radio Development Could Affect Acquisition Strategy

In early 1990, the Army had proposed streamlining from 28 divisions to 22 divisions in response to the diminished threat triggered by the changes in Eastern Europe. Consequently, in July 1990, the Army reduced the quantity requirements for SINCGARS from 365,000 to 256,000 radios. SINCGARS quantities could be further reduced as the Army continues to evaluate its force structure in light of a February 1991 DOD proposal for an 18-division Army by 1995.

The Army has not clearly formulated its acquisition strategy as it relates to future radio operational and quantity requirements and estimated costs over the procurement cycle. Although the Army approved full-rate production for the ITT ground radio in December 1990, and a full-rate production decision for the GD radio is not scheduled until January 1992, it is already planning for an improved radio. These efforts would require the Army to evaluate the impact on the quantity requirements for SINCGARS.

Recommendations

To obtain the benefits of increased competition between ITT and GD, GAO recommends that the Secretary of Defense direct the Secretary of the Army to limit procurement of ITT radios under the sole-source contract to the current annual production rate of 12,000 radios.

Because of the many changes that could affect the requirements for SINCGARS, GAO also recommends that the Secretary of Defense direct the Secretary of Army to evaluate the impact of these changes on the SINCGARS radio. This evaluation should address how further changes in the force structure, as well as the introduction of new technologies, could impact on the requirements for SINCGARS.

As quantities are reduced, the potential cost savings of dual-sourcing are also reduced. Therefore, if there are further reductions of SINCGARS, GAO recommends that the Secretary of Defense direct the Secretary of the Army to re-evaluate its dual-source acquisition strategy.

Agency Comments and GAO Evaluation

DOD disagreed with the GAO recommendation limiting ITT radio procurement, and believed the GAO recommendations on evaluating quantity requirements and re-evaluating the dual-source acquisition strategy were unnecessary.

GAO's recommendation was changed to limit the ITT quantities of radios to be procured under a sole-source acquisition to the current annual production rate of 12,000. The Department did not believe that GAO provided a compelling cost savings argument for limiting ITT sole-source procurement. GAO believes that it is difficult to forecast what prices may be under the sole-source or competitive contracts. Also, the potential quality of the GD radio is another unknown in any attempt at analysis at this time. However, while there is a potential to save money under competitive contracting, GAO believes that the Army should limit procurement until competition can occur.

The Department stated that the recommendations on evaluating quantity requirements and re-evaluating the dual-source acquisition strategy are unnecessary because of ongoing monitoring actions. GAO believes that, given the uncertainties associated with SINCGARS quantities as stated in the Department's comments, our recommendations place added emphasis on the need for adequate reviews of these areas. GAO will continue to monitor progress toward the implementation of these recommendations.

Contents

Abbreviations

DOD	Department of Defense
GAO	General Accounting Office
GD	General Dynamics Corporation
GPS	Global Positioning System
POMCUS	prepositioned materiel configured to unit sets
SINCGARS	Single Channel Ground and Airborne Radio System

Introduction

The Single Channel Ground and Airborne Radio System (SINCGARS) is the Army's new generation of very high frequency combat radios that will be used by the infantry, armored, artillery, and airborne forces. (See fig. 1.1.) It will be the primary mode of communications within the brigade and will also provide command and control communications for combat support and combat service support units within the division and corps area. SINCGARS radios are smaller, lighter, and more reliable than the Vietnam-era radios they will replace. The radios will incorporate jam-resistant communications through random changes in the frequency. Figure 1.2 illustrates SINCGARS' communication links.

Figure 1.1: SINCGARS Ground Radio

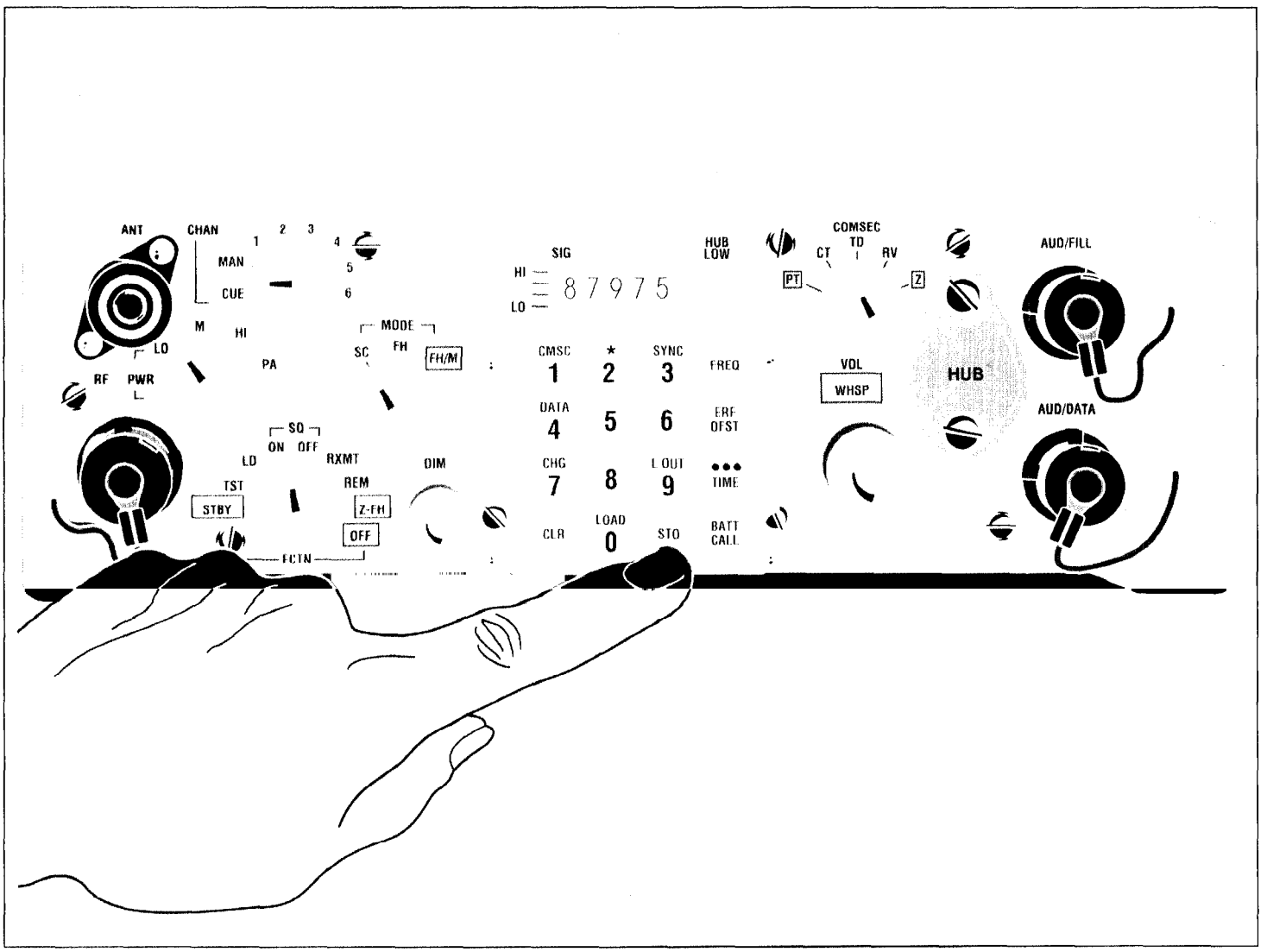
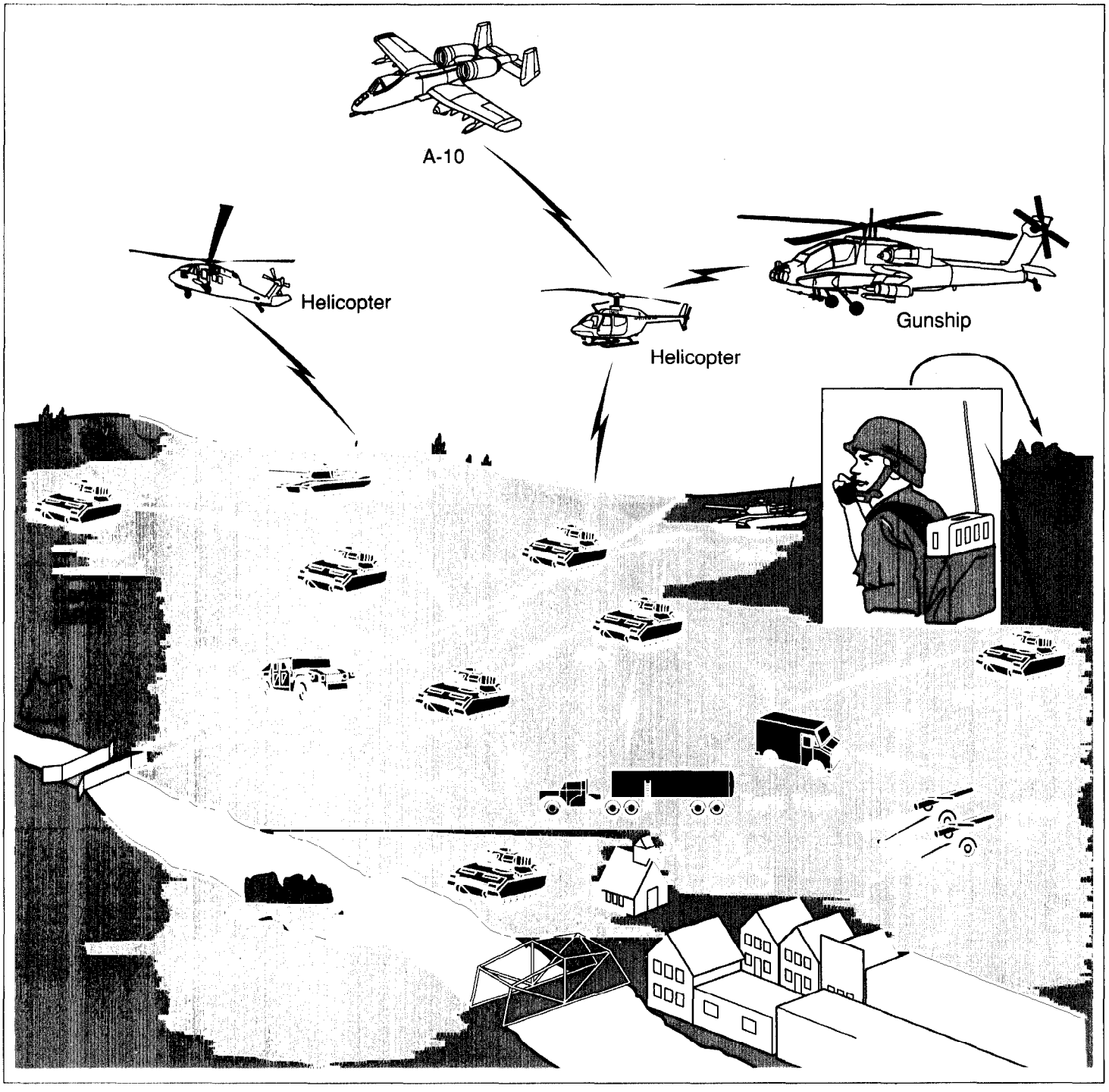


Figure 1.2: Representative SINCGARS' Communication Links on the Battlefield



The Army approved the requirement for the radios in 1974 and awarded production contracts with options to the ITT Corporation for ground radios and airborne radios in 1983 and 1985, respectively. In 1988, the Army awarded General Dynamics Corporation (GD) a second-source production contract for additional ground radios.

The Army's acquisition strategy for a second-source producer is directed toward obtaining competitive pricing, technological improvements, and the additional production capacity required to meet its fielding plan. The GD radios are to look and perform like the ITT version, even though their internal parts are different.

To support a 28-division force, the Army had planned, as of December 1989, to spend $6.5 billion on the SINCGARS program to field 351,000 ground radios and 14,000 airborne radios by fiscal year 2004. Because of the ongoing changes in Eastern Europe and the diminishing threat, the Army had proposed restructuring from a 28-division force to a 22-division force. In line with this restructuring, the Army reduced the SINCGARS quantity requirement to 246,000 ground radios and 10,000 airborne radios in July 1990. As of December 1990, the Army expected to spend about $3.1 billion on the SINCGARS program to field 141,500 ground radios and 8,500 airborne radios by fiscal year 1998 to first-to-fight units. Plans and cost estimates for procuring the remaining 106,000 radios are uncertain. The Army could procure either (1) more of the current SINCGARS radios, (2) improved SINCGARS radios, or (3) new combat net radios.

In addition, the Army plans to procure 38,056 ground radios for other service requirements. These radios are estimated to cost $376.6 million.

The Army has awarded two contracts with options to buy up to 73,100 ground radios and a third contract with options to buy 3,870 airborne radios. The initial ITT ground radio contract with four options is for as many as 44,100 radios. The initial GD contract with three options is for as many as 29,000 ground radios. Currently, ITT is producing at a rate of about 12,000 radios a year and GD is developing its production capability. After the completion of a separate, follow-on, sole-source contract[1] to ITT's initial contract and the completion of GD's initial contract and options, both contractors will enter into competition for additional ground radios under contracts scheduled to be awarded to each contractor in fiscal year 1994. Under the Army's acquisition strategy, both

[1]The follow-on contract and option to ITT could provide up to 33,000 additional ground radios.

contractors would receive follow-on SINCGARS production contracts with quantity split decisions based on a "best value" competition and an evaluation of both contractor's radios.

In December 1990, the Defense Acquisition Board decided to exercise contract options for full-rate production of the ITT ground and airborne radios, and limited-rate initial production of the GD radio. These last options of the initial ITT ground and airborne radio contracts were exercised in December 1990 and January 1991, respectively. The first option of the GD ground radio contract was exercised in March 1991. Follow-on operational test and evaluation of GD radios was rescheduled from March 1991 to August 1991, and the exercise of option two for full-rate production was rescheduled from July 1991 to January 1992. Army officials stated that this change in the operational test date was the result of the lack of available personnel due to the Middle East situation.

Objective, Scope, and Methodology

Our objective was to determine the soundness of the SINCGARS acquisition strategy. In particular, we focused our work on whether the dual-source acquisition strategy remains valid when requirements are being reduced and the progress the Army has made in reducing SINCGARS quantity requirements in accordance with DOD/Army planned force reductions. In addition, we reviewed the potential impact of emerging technologies on SINCGARS quantity requirements.

We reviewed various DOD and Army documents, including acquisition plans, decision papers, test reports, quantity requirements, memorandums, and briefing papers, relating to acquisition strategy, reduction of combat net radios, and SINCGARS program status. We met with officials of DOD and Army organizations. These included the Program Executive Office for Communications Systems and its SINCGARS and Global Positioning System project offices, located at Fort Monmouth, New Jersey; the Department of the Army's Office of the Deputy Chief of Staff for Operations and Plans, Washington, D.C.; U.S. Army Operational Test and Evaluation Command, Alexandria, Virginia; and DOD's Director, Operational Test and Evaluation; and the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence, Washington, D.C.

Our review was performed from February 1990 through March 1991 in accordance with generally accepted government auditing standards. DOD provided written comments on a draft of this report. DOD comments and our responses are contained in appendix I of this report.

SINCGARS Acquisition Strategy and Quantity Requirements

The Army's SINCGARS acquisition strategy is based on two contractors, ITT and GD, manufacturing interoperable SINCGARS radios. In fiscal year 1994, ITT and GD will compete for follow-on production contracts. The Army plans to award a sole-source contract and option to ITT to keep its SINCGARS production lines open until this competition takes place. Awarding a sole-source contract to ITT could result in the Army buying a large number of radios without the benefits of competition. Limiting procurement of ITT radios under the sole-source contract could provide the Army with the opportunity to buy more of the best radio at the lowest possible price.

While SINCGARS quantity requirements have been substantially reduced in response to changing world situations, the quantity of SINCGARS radios needed is still unresolved. For example, the Army needs to address how future force structure changes, as well as the introduction of new technologies, could impact on the quantity requirements for the SINCGARS radio. The dual-source acquisition strategy for SINCGARS was based on large quantity requirements. As quantities are reduced, the potential cost savings of dual-sourcing are also reduced. Further SINCGARS reductions would require the Army to re-evaluate its dual-source acquisition strategy.

Army Plans to Award Sole-Source Contract to ITT to Prevent Break in Production

ITT is scheduled to complete SINCGARS deliveries under its initial contract about 2 years before GD completes its deliveries. The Army plans to award a sole-source contract with one option to ITT to prevent a break in its production line while GD completes its basic contract.

The ITT and GD SINCGARS programs are at different stages of maturity. ITT will complete deliveries under its current contract in May 1993. This is about 23 months before GD is scheduled to complete deliveries under its initial contract. To prevent ITT from having a break in its SINCGARS production, the Army plans to award a sole-source production contract to ITT in fiscal year 1992, with one option to be exercised in fiscal year 1993. According to the Army, this sole-source contract will enable ITT to keep its SINCGARS production lines open, keep its workers employed, and save non-recurring costs associated with restarting production in the future. The sole-source contract will also enable the Army to buy and field SINCGARS radios to its first-to-fight units sooner.

According to the Army's acquisition strategy, the quantity of radios procured under this sole-source contract will be based on a cost and performance comparison of the ITT radio and the current GD-priced option.

Army officials stated that GD's performance data will be based on results from technical and operational testing. These tests are scheduled to be completed between September and October 1991. At the time of ITT's sole-source contract award scheduled for February 1992, GD will have delivered about 275 radios under its initial contract. By the time of the scheduled option exercise under the sole-source contract in February 1993, GD will have delivered about 1,775 radios. In fiscal year 1994, ITT and GD will enter into limited competition for the remaining SINCGARS radio production contracts. Both contractors would receive follow-on SINCGARS production contracts, with quantity split decisions based on a "best value" competition and evaluation of both contractors' radios.

Under the existing contracts, ITT's radios for its last contract option are significantly more expensive than radios under each of the remaining two options of GD's contract. According to Army officials, the Army will have leverage in determining the quantities under sole-source procurement because of the best value competition between ITT's new contract and GD's current priced options. However, at the time of the scheduled ITT new contract award, GD would have delivered radios for about 3 months.

The initial ground radio contracts to ITT and GD, for as many as 73,100 radios, were the result of competitive selection. However, the sole-source procurement to ITT would mean that the Army would be able to buy 33,000 radios (more than 20 percent of the Army's short-term SINCGARS requirement) without competition.

Smaller SINCGARS Quantities Could Affect Acquisition Strategy

The dual-source acquisition strategy for SINCGARS was based on a large quantity of radios. However, the Army has already reduced the original quantity requirements, and further reductions may be possible. Further reductions in these requirements would require the Army to re-evaluate its acquisition strategy.

Army Believes Dual-Source Strategy Still Required

The Army believes that, for several reasons, the dual-source acquisition strategy remains valid. First, SINCGARS quantity requirements exceed the manufacturing capabilities of one contractor. Based on January 1991 data, ITT and GD are expected to deliver about 49,200 SINCGARS ground radios by early 1993. To meet the overall DOD requirement of fielding 179,556 ground radios (141,500 radios to first-to-fight units; and 38,056 radios for other service requirements) by 1998, the contractors must

produce about 24,500 ground radios annually, between 1993 and 1998. According to Army documents, this exceeds the existing maximum economic production rate for one producer (16,500 ground radios annually or 1,375 per month) and the minimum economic production rate for two producers (10,800 x 2 = 21,600 ground radios annually, or 900 x 2 = 1,800 per month). The Army concluded that it was prudent to retain the accelerated fielding rate and have a second source.

Second, the Army approved the SINCGARS operational requirement in 1974. When SINCGARS radios are fielded to the final first-to-fight units in 1998, the requirement will be nearly a quarter century old. According to the Army, relying on one contractor for SINCGARS radios would delay completion of the short-term SINCGARS requirement to fiscal year 2003. According to DOD, delaying SINCGARS procurement will increase the operational and support costs of the old Vietnam-era radios, which will remain in the field longer and have significantly higher operational and support costs than SINCGARS.

Third, the SINCGARS production start-up costs for both contractors are already spent—the financial investment in the facilities has been made. According to the Army, ITT's and GD's facilities are each capable of economically producing up to 16,500 radios per year, plus spares. In addition, according to an Army official, significantly increasing the capacity of one of the plants for a single producer strategy would require considerable nonrecurring investment and a minimum 2-year lead time.

Previous SINCGARS Quantity Reductions Based on Force Structure Changes

In July 1990, the Army reduced SINCGARS quantities from 351,000 ground and 14,000 airborne radios to 246,000 and 10,000, respectively. This was based on force structure and budget reductions developed by the Army in response to the changes in the world situation and resultant threats at that time. This reduction was based on Army plans that may result in an Army consisting of 22 divisions, down from a 28-division force. The larger Army force required 365,000 SINCGARS radios. This quantity total was derived from initial guidance to replace all the current Vietnam-era radios with SINCGARS, including the war reserve and prepositioned materiel configured to unit sets (POMCUS) stocks. The Army plans to field 150,000 SINCGARS radios (141,500 ground; 8,500 airborne) to its first-to-fight units by fiscal year 1998. The remaining requirement of 106,000 radios will be fielded after that date.

According to the Army, the reduction of the threat in Europe has allowed a reduction in the size of the SINCGARS war reserves and POMCUS

quantities. In addition, the Army believes that the decreased likelihood of combat against a sophisticated and numerically superior enemy allows a decrease in the size of the force structure and the establishment of a strategy to field first-to-fight units with SINCGARS.

Further Changes in Force Structure Could Result in an Even Smaller Army and Fewer Radios

While the Army has reduced quantity requirements for active forces, war reserve and POMCUS stocks, the continued easing of tensions between the East and the West and the ongoing force restructuring by the Army may cause further reductions in SINCGARS. These changes could have a significant impact on the structure of the Army. For example, negotiations on European conventional force reductions could impact further on the quantities of radios needed for both the active and reserve forces and POMCUS quantities.

Even though the Army has committed substantial resources to the Middle East as part of Operation Desert Storm, DOD has proposed force reductions below the proposed 22-division force. In February 1991, DOD, in its fiscal year 1992 defense budget, proposed an 18-division Army by 1995. Therefore, the quantity of SINCGARS needed could be further decreased. In addition, the number of SINCGARS radios needed for the first-to-fight units may be reduced with the proposed lower division force structure. In September 1990, the Army Systems Acquisition Review Council had directed the Program Executive Office to monitor SINCGARS quantity requirements to ensure that the dual-source strategy remained justified in light of SINCGARS quantity reductions.

Future Radio Development Could Reduce SINCGARS Quantities

Future radio development could impact on the quantity of SINCGARS radios the Army is procuring. For example, the impact of inserting the Global Positioning System (GPS)[1] or other technologies in SINCGARS is uncertain. Also, although the ITT radio was approved for full-rate production in December 1990 and the GD radio is not scheduled for a full-rate production decision until January 1992, the Army is already planning to procure a follow-on radio. These plans call for fielding the follow-on radio, either a new radio or an enhanced SINCGARS, after the 150,000 SINCGARS radios are fielded to first-to-fight units by 1998.

[1]The GPS, a tri-service program, is a space-based system that will provide continuous worldwide navigation, positioning and timing information to land, sea, air, and space-based users. Integrating GPS into SINCGARS would provide a single radio that can provide communication, navigation, and position location capabilities.

The House Appropriations Committee's fiscal year 1991 report on DOD's appropriations directed the Army to report, by March 1991, on the feasibility of modifying the GD radio with the addition of the GPS. In its March 12, 1991 response, the Army reported that the GPS can be embedded into SINCGARS. The Army indicated that the insertion of the GPS capability into the current SINCGARS production units would require design changes causing significant cost and schedule impacts. The Army stated that adding GPS cannot be viewed alone, but must be looked at with other emerging requirements for a product improvement. The Army added that, once these are known, it will perform a cost/benefit analysis and design trade-off to determine when to integrate new capabilities relative to the need to quickly field SINCGARS.

After the Army fields the 150,000 SINCGARS radios for the first-to-fight units by 1998, it plans to either buy more SINCGARS, product-improve the existing SINCGARS, or develop a new radio. The alternative chosen will be based on emerging requirements. If a new radio or improved SINCGARS radio is selected, it will be issued to the first-to-fight units with the displaced SINCGARS radios being distributed to the remaining forces.

The Army believes that expected threat developments and advances in communications and electronics technology in the 1990's may require the development of a new combat net radio. This future radio is projected to be available during the latter stages of SINCGARS fielding. According to Army officials, the Army has prepared a draft operational and organization plan for a new combat net radio. The operational characteristics for the new radio include performance improvements over SINCGARS, such as multiband capability, reduced size and weight, and greater range. According to Army officials, the draft plan was intended to explore the state of the art with industry. In commenting on our report, DOD stated that it is not clear that the follow-on radio will be a new radio. DOD commented that initial assessments indicate that a rational program of product improvements to SINCGARS may be the most cost- and schedule-effective method of keeping up with requirements.

The Army's response to congressional direction and DOD's comments to our report indicate considerable uncertainty about a follow-on radio. Because of this uncertainty, the Army must decide on the radio it needs to procure—a product-improved SINCGARS or a new radio. It also must decide how its future radio requirements impact on current SINCGARS requirements.

Conclusions

The Army could be buying 33,000 radios under the planned ITT sole-source production contract and option without the benefits of competition. The Army should balance its need to keep the ITT production line open and its objective to expedite fielding of SINCGARS radios with the need to pursue the most cost-effective acquisition strategy. By limiting the quantity under the ITT sole-source contract, the Army could avoid procuring a large quantity of radios without the benefits of competition. The Army could then be in a better position to evaluate the two contractors' products equally in a more competitive environment.

Changes in the world situation have given the Army an opportunity to reduce its SINCGARS quantity requirements. As the Army's force structure evolves into a smaller force, the Army needs to continue evaluating its quantity requirements for SINCGARS. The impact of technological development on future radios must also be considered. As quantities are reduced, the potential cost savings of dual-sourcing are also reduced. Lower quantity requirements would require the Army to evaluate the dual-source acquisition strategy for SINCGARS. If quantities are low enough, a single contract award to one source may be a feasible and a more economical alternative.

Recommendations

To obtain the benefits of increased competition between ITT and GD, we recommend that the Secretary of Defense direct the Secretary of the Army to limit the procurement of ITT radios under the sole-source contract to the current annual production rate of 12,000 radios.

Because of the many changes that could affect the requirements for SINCGARS, we recommend that the Secretary of Defense direct the Secretary of Army to evaluate the impact of these changes on the requirements for the SINCGARS radio. This evaluation should address how further changes in the force structure, as well as the introduction of new technologies, could impact on the requirements for SINCGARS.

If there are further reductions of SINCGARS, we recommend that the Secretary of Defense direct the Secretary of the Army to re-evaluate its dual-source acquisition strategy.

Comments From the Department of Defense

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-3040

May 6, 1991

Mr. Frank C. Conahan
Assistant Comptroller General
National Security & International
Affairs Division
U.S. General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report -- "COMMUNICATIONS ACQUISITION: Army Needs to Ensure Economy in SINCGARS Radio Acquisition," dated April 1, 1991 (GAO code 395131/OSD Case 8649).

See comments 6, 7.

It is the DoD position that recommendations 2 and 3 are unnecessary, since actions have been taken by the Department to address those concerns. A reevaluation of requirements and the dual source acquisition strategy are under review as a result of direction by the Defense Acquisition Board. Furthermore, a majority of other issues identified in the report have been or are in the process of being resolved.

Detailed DoD comments on the report findings and recommendations are provided in the enclosure.

Sincerely,

Duane P. Andrews

Enclosure

GAO DRAFT REPORT - DATED April 1, 1991
(GAO CODE 395131) OSD CASE 8649

"COMMUNICATIONS ACQUISITION: ARMY NEEDS TO ENSURE ECONOMY IN SINCGARS RADIO ACQUISITION"

DEPARTMENT OF DEFENSE COMMENTS

* * * * *

FINDINGS

FINDING A: Single Channel Ground and Airborne Radio System (SINCGARS). The GAO reported that the Single Channel Ground and Airborne Radio is the new generation of very high frequency, jam-resistant Army combat net radios that will be used by troops on the ground, in vehicles, and aboard aircraft. The GAO found that, as of December 1989, the Army planned to spend $6.5 billion on the program to field 351,000 ground radios and 14,000 airborne radios by FY 2004. The GAO further found that, subsequently, in July 1990, the quantity was reduced to 246,000 ground radios and 10,000 airborne radios--for a proposed 22-division force. The GAO noted that the radios are produced by ITT corporation, the initial contractor, and by General Dynamics, the second source contractor. The GAO observed that the Army second source strategy is directed toward obtaining (1) competitive pricing, (2) technological improvements, and (3) the additional production capacity required to meet its fielding plan. The GAO found that follow-on test and evaluation of the General Dynamics radios was rescheduled from March 1991 to July 1991, because of a lack of available personnel due to the Middle East situation. The GAO also found that the exercise of option two for full-rate production was rescheduled from July 1991 to December 1991. (pp. 2-4, pp. 11-15/GAO Draft Report)

Now on p. 2 and pp. 8-12.

DOD RESPONSE: Concur. Except for erroneous dates, the finding is accurate. (The current dates were provided separately.)

See comment 1.

FINDING B: Award of Sole Source Contract to ITT to Prevent Break in Production. The GAO reported that ITT is scheduled to complete deliveries under its initial contract about two years before General Dynamics completes its deliveries of the radio. The GAO found that the Army plans to award a sole source contract to prevent a break in the ITT production line. The GAO allowed that the quantity of ITT radios to be procured will be based on a cost and performance comparison of the ITT radio and the current General Dynamics priced option. The GAO noted that, in FY 1994, the contractors will enter into a limited competition for the remaining radios. The GAO

observed that the sole source procurement would mean that the Army would be able to buy 33,000 radios without competition. The GAO concluded that the Army should balance its need to keep the ITT line open and its objective to expedite fielding of the SINCGARS with the need to pursue the most cost effective acquisition strategy. The GAO also concluded that limiting procurement under the sole source contract to minimum economic production rates until competition is achieved could result in savings through competitive pricing. (p. 4, p. 6, p. 27/GAO Draft Report)

Now on pp. 3-4 and p. 18.

DOD RESPONSE: Nonconcur. All else equal, putting more of a total quantity of an item under dual sourcing is better than less. However, the SINCGARS program has equally compelling considerations that tip the scale in the other direction. These considerations are: the gap between the two contractors prices is narrowing the ITT prices are decreasing while General Dynamics costs are increasing; lower production rates increase prices; and operation and support of the older VRC-12 series radios is more difficult than the SINCGARS radio.

See comment 2.

Lower production rates will increase the operation and support costs of the old AN/VRC-12 radios, which will remain in the field longer at a significantly higher Operation and Support cost than SINCGARS. The actual field Mean Time Before Failure of the SINCGARS radios far surpasses that of the old VRC-12 Series radios. (The GAO report did not present computations in the GAO report to support a reduction in quantity.)

FINDING C: Army Believes Dual Source Strategy Still Required. The GAO reported the Army maintains that, for several reasons, the dual source acquisition strategy remains valid. The GAO explained that, to meet the overall DoD quantity requirements of fielding 179,556 ground radios (141,500 radios to first-to-fight units, and 38,056 radios for other Service requirements), the contractors must produce about 24,500 ground radios annually between FY 1993 and FY 1998. The GAO found that, according to Army documents, that number exceeds the existing maximum economic production rate for one producer (16,500 annually) and the minimum economic rate for two producers (21,600 annually). The GAO also noted that, according to the Army, relying on one contractor would delay completion of the short term requirements until FY 2003, when the new radio could provide performance and reliability enhancements over the current Vietnam era radios. In addition, the GAO observed that startup costs for both contractors are already sunk, while increasing the capacity of one contractor would involve a considerable investment. (pp. 20-21/GAO Draft Report)

Now on pp. 14-15.

DOD RESPONSE: Concur. The GAO accurately reflects the annual procurement quantities planned for production and the need for dual sourcing to meet these quantities.

FINDING D: Quantity Reductions Based on Force Structure Changes. The GAO reported that, according to the Army, the reduction of the threat in Europe has allowed a reduction in the size of the Single Channel Ground and Airborne Radio war reserves and prepositioned quantities. The GAO also found that, because of the reduced threat and lower force structure, the Army now plans to field 141,500 ground and 8,500 airborne radios to its first-to-fight units by FY 1998, with the remaining 106,000 Army radios to be fielded after that date. The GAO observed, however, that restructuring of the Army may cause further reductions in the requirements for the radio. (The GAO cited, as an example, potential impacts from negotiations on European conventional force reductions.) The GAO observed that the DoD has proposed reductions below the 22-division force, with the FY 1992 Defense budget proposing an 18-division Army by FY 1995 and the remaining 106,000 Army radios are to be fielded after that date. The GAO observed, however, that restructuring of the Army may cause further reductions in the requirements for the radio. (The GAO cited, as an example, potential impacts from negotiations on European conventional force reductions.) The GAO observed that the DoD has proposed reductions below the 22-division force, with the FY 1992 Defense budget proposing an 18-division Army by FY 1995 The GAO concluded therefore that the quantity of the SINCGARS radios needed could be further reduced. In addition, the GAO concluded, therefore, that further reductions in the requirement could also result in a reduced potential for cost savings through dual sourcing, given that the dual source acquisition strategy was based on a larger quantity requirement. Finally, the GAO concluded that the Army needs to address the impact of lower quantity requirements on its dual source acquisition strategy, since a single contract may be more economical. (pp. 4-7, p. 17, pp. 22-23, p. 27/GAO Draft Report)

Now on pp. 4, 15, 16, and 18.

DOD RESPONSE: Partially Concur. The draft report correctly states that the Army must continuously reassess yearly production requirements. It fails, however, to address other potential factors influencing yearly production requirements, such as additional Foreign Military Sales and potential increases in other Service requirements to buy SINCGARS rather than develop their own radio. These factors could increase the yearly production requirement for SINCGARS.

See comment 3.

Additionally, the report should reference USD(A) letter of June 8, 1990 letter from the Under Secretary of Defense for Acquisition Subject: "Dual Sourcing in Defense Production." That letter states that the DoD has to review continuously and carefully the basis for maintaining two sources, as well as carefully review the merits of developing more than one source. This is further amplified in Title 10 United States Code Section 2438, "COMPETITIVE ALTERNATIVE SOURCE REQUIREMENT," which establishes the need to approve acquisition strategy plans and to continue to review the

strategy throughout the life of the program. The requirement to review acquisition strategies has been institutionalized in the DoD 5000 series regulations. Further, the SINCGARS program has already been identified by the staff of the Office of the Under Secretary Defense for Acquisition to review that issue; in fact, it was raised as an issue long before the GAO started its review. The Under Secretary Defense for Acquisition Acquisition Decision Memorandum (ADM) of December 18, 1990, identifies it as an issue for review during the next Defense Acquisition Board (DAB) review scheduled for early 1992.

FINDING E: Future Radio Development Could Affect the Requirement for the Single Channel Ground and Airborne Radios. The GAO reported that Army plans call for fielding a follow-on radio, either a new radio or an enhanced version of the SINCGARS, after the first 150,000 radios are fielded to first-to-fight units. In addition, the GAO noted that the House Appropriations Committee has directed the Army to report on the feasibility of integrating an additional capability into the radio--the Global Positioning System--which raises the question of the quantity of radios needed. The GAO noted that, according to Army officials, the Army must decide whether to integrate the Global Positioning System into the present radio or produce a new combat net radio in 1998. The GAO observed that the Army must also decide whether there are other improvements to be made to the SINCGARS and whether such improvements could be made concurrently. The GAO found that, if a new radio or an improved version of the current radio is selected, it will be issued to the first-to-fight units, with the displaced SINCGARS being distributed to the remaining forces. The GAO noted that, according to the Army, expected threat developments and advances in communications electronics technology in the 1990s may require a new radio--and the Army has prepared a draft requirements document. The GAO concluded that emerging technologies and future radio development could further reduce quantity requirements for the SINCGARS. (pp. 4-7, pp. 24-27/GAO Draft Report).

Now on pp. 2-4, and pp. 16-18.

DOD RESPONSE: Partially concur. While it is true that the Army is evaluating emerging requirements, it is not clear that the solution is a new radio. Initial assessments indicate that a rational program of product improvements to the current SINCGARS maybe the most cost and schedule effective method of keeping pace with requirements. In the case of SINCGARS it is not cost effective to put a Global Positioning System (GPS) in every radio. Many of the radios are used as remote relay stations or in command posts where several radios are used together in the network, so that GPS would not be needed on all of the radios. GPS can be embedded into the SINCGARS radio. However, technical feasibility is not the only deciding factor. Of more concern is the proper understanding of the range of new required capabilities. Once these are known the Army will perform a rigorous cost/benefit analysis

See comment 4.

and design trade-off. From this they will determine the proper timing and sequence for embedding new capabilities relative to the need to quickly field SINCGARS.

* * * * *

RECOMMENDATIONS

RECOMMENDATION 1: To obtain the benefits of increased competition, the GAO recommended that the Secretary of Defense direct the Secretary of the Army to limit the procurement of ITT radios under the sole source contract to the yearly minimum economic production rate of 10,800 radios--until such time as ITT and General Dynamics are prepared for competition. (p. 8, p. 28/ GAO Draft Report).

Now on p. 4 and p. 18.

DOD RESPONSE: Nonconcur. Such a constraint could actually increase costs:

See comment 5.

(1) It would severely limit the Army's flexibility in determining the split of FY 1992 and FY 1993 production quantities between ITT and General Dynamics by artificially establishing a maximum quantity ceiling for ITT. This would eliminate the leverage now available by removing the incentive for ITT to offer reduced prices for increased quantities.

(2) It reduces the ITT production rate by 10 percent from that already achieved, resulting in proportional reductions in factory efficiencies and a layoff of skilled manufacturing personnel.

(3) It would delay replacement of the aging AN/VRC-12 radio family, which would significantly increase Operation and Support (O&S) costs as discussed in the comment to Finding A.

RECOMMENDATION 2: Because of the many changes that could affect the requirements for the Single Channel Ground and Airborne Radio System, the GAO recommended that the Secretary of Defense direct the Secretary of the Army to evaluate the impact of the changes on the requirements for the radio. The GAO asserted that such an evaluation should address how further changes in the force structure, as well as the introduction of new technologies, could impact on the requirements. (p. 8, p.28/GAO Draft Report)

Now on p. 4 and p. 18.

DOD RESPONSE: The recommendation is moot. The Army is already on formal record for conducting such an evaluation as a result of the December 14, 1990 Defense Acquisition Board, and is well underway with the processes. Therefore, there is no need for the Secretary of Defense to direct the action, that is already in process and will be completed by the next Defense Acquisition Board review in early 1992.

See comment 6.

Now on p. 4 and p. 18.

See comment 7.

RECOMMENDATION 3: If further reductions in the requirement for the Single Channel Ground and Airborne Radio System take place, the GAO recommended that the Secretary of Defense direct the Secretary of the Army to reevaluate its dual source acquisition strategy. (p. 8, p. 28/GAO Draft Report).

DOD RESPONSE: The recommendation is moot since the DOD is committed to monitor SINCGARS quantity requirements to ensure the dual source strategy remains justified (as stated on page 23 of the GAO report itself). Therefore, there is no need for the Secretary of Defense to direct the action. Additionally, the Under Secretary of Defense for Acquisition has initiated action to monitor all second source contracts within the DOD by his letter of June 8, 1990.

The following are GAO's comments on DOD's letter dated May 6, 1991.

GAO Comments

1.The text of the report has been revised to reflect recent changes in program dates.

2.We did not try to specifically quantify what savings could result from buying more of the Army's requirement for SINCGARS under competition because it is difficult to estimate what the prices could be under sole-source or competitive contracts. Further complicating the estimate methodology is what the results will be from the tests of the GD radio to be completed by October 1991, about 4 months prior to the award of the ITT sole-source contract. For example, if GD successfully passes its SINCGARS tests this year and proves to be a better and less expensive radio, it could provide the Army with an opportunity to buy more of the GD radios under competition. We believe that while there is a potential to buy the best radio at the lowest cost under competitive procurement, the Army should limit sole-source procurement.

With regard to production rates, we changed this recommendation to continue with the current production rate. This should maintain the effectiveness of production achieved so far.

We recognize that some additional support costs may be associated with keeping some AN/VRC-12 radios in service for 2 extra years.[1] The text of the report has been changed to reflect this. However, it is difficult to estimate how much the additional costs would be. For example, given that the Army has already begun to replace these radios with SINCGARS, repair parts support should come out of remaining supplies. Also, if there is a cost for the 2-year period of reduced sole-source procurement, the Army could then increase its procurement of SINCGARS after competition and recover these costs through earlier fielding.

3.We agree that it is possible that Foreign Military Sales and increases in other service requirements could influence yearly production requirements. We would expect that, as part of DOD's implementation of our recommendation, that these factors and their influence on the dual-source acquisition strategy would be evaluated.

[1]With the change in our recommendation to 12,000 SINCGARS per year, the deferred production could be 9,000 (e.g., 2 x 16,500 = 33,000 - 24,000 = 9,000).

We recognize the June 8, 1990 memorandum on dual-sourcing. While it does not specifically address SINCGARS, we believe that the review process described in the memorandum, if completely applied to SINCGARS, is in concert with our recommendation to evaluate the impact of quantity reductions on the dual-source strategy.

Our review of title 10 U.S.C., Section 2438 showed that, while it does call for approval of acquisition strategy plans, it does not contain any specific requirement to continue to review the strategy. Also, we recognize that the requirement to review acquisition strategies is contained in the DOD 5000 series regulations. Because of the many factors that can influence the quantity of SINCGARS radios, as recognized in the DOD comments, We are specifically recommending that additional emphasis be placed on reviewing the SINCGARS acquisition strategy.

We also recognize the thrust of the December 18, 1990, memorandum from the Deputy Under Secretary of Defense for Acquisition. When DOD completes the review we are calling for, it will provide useful acquisition information for the Defense Acquisition Board.

4.The text of the report was revised to reflect DOD comments and the Army's report on the feasibility of integrating GPS into SINCGARS. We agree that there are uncertainties associated with the requirements for a follow-on SINCGARS radio. These uncertainties further support our recommendation, which provides added emphasis to ensure that an adequate evaluation of requirements occurs.

5.Sole-source contracting is authorized to continue in production, contractors that are manufacturing critical items, when there would otherwise be a break in production. We recognize that there may be some reduced flexibility; but, there is nothing in the regulations that allows the use of sole-source contracting to achieve price concessions from contractors. Our recommendation was changed to limit procurement of ITT radios to the current annual production rate of 12,000 radios. This would overcome DOD's concern about a 10-percent drop in the production rate and potential factory inefficiencies and layoffs. The recommendation may cause some delay in replacing existing radios; however, this delay could be overcome by increasing quantities in competition between ITT and GD. (See comment 2.)

6.Given the uncertainties associated with the quantity of SINCGARS to be procured, as recognized in DOD comments, this recommendation provides added emphasis to ensure that an adequate evaluation of requirements

occurs. (See comment 4.) We will continue to monitor the implementation of our recommendation.

7.Given that the total quantities of SINCGARS to be procured is unknown, this recommendation reinforces the need for the Secretary of Defense to ensure a thorough analysis on the requirement for a dual-source acquisition strategy. (See comment 3.) We will continue to monitor the implementation of our recommendation.

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