

112671

BY THE COMPTROLLER GENERAL

# Report To The Congress

OF THE UNITED STATES

## Equitable Cost Sharing Questioned On NATO's Airborne Early Warning And Control Program

The willingness of the United States to

- make extraordinary cost concessions,
- accept caveats to a Multilateral Memorandum of Understanding which could result in either program reductions or additional program cost increases being absorbed by the United States, and
- agree to separate projects as compensation for program participation,

*raise serious questions as to whether equitable cost sharing on NATO's Airborne Early Warning and Control (AEW&C) program is being achieved.*

Also, this situation brings into question how much the United States will pay to complete the program and how far it should go unilaterally to ensure the program's success.



112671



01132

ID-80-47  
JULY 1, 1980

Single copies of GAO reports are available free of charge. Requests (except by Members of Congress) for additional quantities should be accompanied by payment of \$1.00 per copy. (Do not send cash).

Requests for free single copies should be sent to:

U.S. General Accounting Office  
Distribution Section, Room 1518  
441 G Street, NW  
Washington, DC 20548

Requests for multiple copies should be sent with checks or money orders to:

U.S. General Accounting Office  
Distribution Section  
P.O. Box 1020  
Washington, DC 20013

Checks or money orders should be made payable to the U.S. General Accounting Office.

To expedite placing your order, call (202) 275-6241.  
When ordering by phone or mail, use the report number and date in the lower right corner of the front cover.

GAO reports are now available on microfiche. If such copies will meet your needs, be sure to specify that you want microfiche copies.



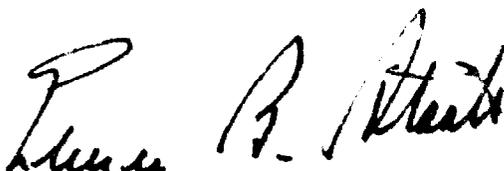
COMPTROLLER GENERAL OF THE UNITED STATES  
WASHINGTON, D.C. 20548

B-163058

To the President of the Senate and the  
Speaker of the House of Representatives

This is our report on the status of the North Atlantic Treaty Organization's Airborne Early Warning and Control program and the extent of U.S. participation in the program.

We are sending copies of this report to the Director, Office of Management and Budget; the Secretary of State; the Secretary of Defense; the Secretary of the Air Force; and the appropriate congressional committees.

  
Comptroller General  
of the United States



D I G E S T

A \$1.8 billion airborne early warning and control program funded by the North Atlantic Treaty Organization (NATO) has been placed on a cooperative basis wherein the costs will be shared by participating countries. If the program, consisting of 18 aircraft, modification of selected ground sites and associated base facilities is a success, it will demonstrate NATO's determination and ability to cooperate in the interests of a common defense.

The high cost of the aircraft acquisition was a major barrier to NATO agreeing to purchase them. The United States has made some unique financial concessions to the other NATO nations in order to obtain broad participation in the program. However, the multinational effort is important to NATO and undoubtedly furthers U.S. security assistance goals.

Under the terms of a Multilateral Memorandum of Understanding, the United States will pay about 42 percent of the acquisition costs and the recurring operations and support costs of the program. Based on the Memorandum, the United States has agreed to pay \$769 million (June 1977 dollars) of total acquisition costs (see p. 11). However, it has waived about \$300 million in additional charges, bringing its measurable contributions to approximately \$1 billion. (See pp. 11-14.)

The United Kingdom is contributing 11 NIMROD aircraft. Because the United Kingdom has not furnished the United States with NIMROD cost data, GAO cannot accurately compute the U.S. percentage of the total aircraft acquisition cost. However, Department of Defense (DOD) estimates that when the equivalent cost of the NIMROD is included, the U.S. share of the program is not expected to exceed 33 percent.

The U.S. Air Force has yet to negotiate successfully an aircraft production contract predicated upon the Memorandum acquisition figure. The prime contractor's not-to-exceed estimate is approximately \$147 million over the Memorandum figure. This was based upon preliminary planning and budgetary data despite warnings by Air Force program managers that the estimate was for planning purposes only and could be revised as a result of contractor follow-on proposals or changes in U.S. Government policy. (See pp. 20 and 21.) Other factors affecting the successful negotiation of a production contract or otherwise contributing to potential funding shortfalls are:

- non-participation by Belgium or other nations (see p. 21);
- expenses associated with NIMROD interoperability (see pp. 21 and 22);
- termination of the planned sale of aircraft to Iran (see p. 21);
- failure of participants to pay an agreed fair share of inflation on the base year costs (see p. 22); and
- any reduction in the Air Force aircraft buy. (See p. 23.)

The program currently faces substantial potential funding shortfalls. The United States could be faced with absorbing these costs due to the language of the basic agreement. In negotiating the agreement, DOD acquiesced to caveats placed in the Memorandum by several countries which in essence qualify their program commitments. Most nations' caveats expressed in the form of reservations to the Memorandum relate to financial issues, force employment issues, or the need for national approval. The most common reservation expressed is refusal to pay more than their stated fair share (plus inflation) of all acquisition, operations, and support costs.

Some areas of program cost growth or funding shortfall may be resolved by program modification and national priorities may lead to amendments by some of the members. Realistically, however, the United States may ultimately choose to shoulder the bulk of added program costs or funding shortfall, especially when considering DOD's positive attitude shown toward demands made by NATO members thus far and the major role in burdensharing the United States has played in past alliance efforts.

A factor which could affect the successful completion of the program is the linkage of several separate offset arrangements to the NATO aircraft program. In correspondence with the U.S. Government, the Minister of Defense of the Federal Republic of Germany has stated that delays, reduction in purchase order value or especially cancellation of such projects as the U.S. procurement of the Federal Republic of Germany's nontactical vehicles and the European telephone system would greatly affect continued Federal Republic of Germany participation in the NATO Airborne Early Warning and Control program. (See pp. 19 and 20.)

The willingness of the United States to (1) make extraordinary cost concessions, (2) accept caveats to the Memorandum which could result in either program reduction or the United States absorbing additional program cost increases, and (3) agree to separate projects as compensation for program participation raises serious questions as to whether equitable cost sharing on the NATO program is being achieved. Also, this situation brings into question how much the United States will pay to complete the program and how far it should go unilaterally to ensure the program's success. GAO believes that the United States has not put great enough emphasis on obtaining commitments from participating NATO allies to equitably share in any program cost increases over and above the amounts provided for in the basic agreement. (See ch. 3.)

## MATTERS FOR CONSIDERATION BY THE CONGRESS

Because the NATO aircraft purchase is complex and does not follow normal sales and procurement procedures and because the possibility exists that DOD may have to go to the Congress for additional funds if potential program cost growth or funding shortfalls materialize, the Congress may wish to require a full reporting from DOD on the status of the overall NATO program. The Congress might consider requiring DOD to identify:

- any conditions or caveats placed upon the aircraft purchase by participating countries;
- total U.S. program costs including waivers and other identifiable concessions;
- unresolved program issues; and
- any potential funding shortfall with an explanation on how the shortfall is expected to be absorbed.

## AGENCY COMMENTS AND GAO EVALUATION

The Department of State reviewed the draft report and offered no comment. DOD, while taking no substantive exceptions to the information in the draft report, did not totally agree with GAO's analyses and conclusions. The basic concern centered on the fact that DOD does not consider the U.S. share of the NATO program inequitable.

DOD is justifying the 42-percent share of the acquisition costs and the recurring operations and support costs for the NATO Airborne Early Warning and Control program which the United States, under the terms of the Memorandum, has agreed to pay. Clearly, GAO does not take issue with the 42-percent share; but, GAO does take issue about the number of concessions granted or agreed to, by the United States which either have substantially increased or may substantially increase the U.S. contribution. (See p. 27.)

Another point stressed by DOD was that DOD does not anticipate increasing the U.S. program share unless all other governments do the same. As discussed in chapter 3, the signatories having reservations, including Canada and the Federal Republic of Germany, stipulated that their program contributions (about 53 percent of program costs) would, under no circumstances, exceed Memorandum estimates. Of the other nations that signed the Memorandum, the United States is the largest contributor with a 42-percent share, while the other four nations are contributing about 2.6 percent of acquisition costs. Belgium, which did not sign the Memorandum, had an estimated contribution of 2.7 percent. Obviously, if the signatories having reservations remain adamant, any funding shortfall will have to be resolved either through program cutbacks or increases in the contributions of the other participants of which the United States is the largest. (See pp. 28.)

DOD also emphasized that other governments are also waiving costs on a reciprocal basis as called for in the Memorandum. DOD could not provide GAO with any amounts of such waivers or how much could be anticipated. Indeed it appears that any services provided by other participants on a reciprocal basis will be minimal when compared with those provided by the United States. Such disparity exists because the services mentioned in the Memorandum are related primarily to the aircraft acquisition which constitutes about 84 percent of the cost estimates. (See p. 29.)



# C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	USAF audit efforts	1
	Scope of review	2
2	PROGRAM STATUS	5
	Status of the program	6
	Acquisition phase	6
	Operations and support phase	8
3	COSTS ASSOCIATED WITH THE NATO AWACS PROGRAM	9
	NATO AWACS program costs	9
	National cost shares	10
	Acquisition shares	10
	Operations and support shares	11
	Waivers and concessions	11
	Cost waivers	12
	Research and Development (R&D)	12
	Asset use and rental charges	13
	Administrative charges	13
	Other waivers	14
	Economic benefits	14
	U.S. economic benefits	19
	Offsets outside the NATO AEW&C program	19
	Potential funding shortfalls	20
	Negotiating the price of the AWACS production contract	20
	Annual funding requirements	22
	Other possible adverse impacts on the program costs	22
4	EQUITABLE COST SHARING--IS IT BEING ACHIEVED IN THE NATO AWACS PROGRAM?	24
	Factors affecting cost sharing	25
	Conclusion	25
	Matters for consideration by the Congress	26
5	AGENCY COMMENTS AND OUR EVALUATION	27

APPENDIX

I	Organizational Chart--AWACS Acquisition Management Functions	30
II	Letter dated March 25, 1980, from the Assistant Secretary of Defense for International Security Affairs	31

ABBREVIATIONS

AEW&C	Airborne Early Warning and Control
AWACS	Airborne Warning and Control System
DOD	Department of Defense
DSARC	Defense Systems Acquisition Review Council
FMS	Foreign Military Sales
FRG	Federal Republic of Germany
GAO	General Accounting Office
IC	industrial collaboration
JTIDS	Joint Tactical Information Distribution System
MMOU	Multilateral Memorandum of Understanding
MOB	Main Operating Base
NADGE	NATO Air Defense Ground Environment
NAPMA	NATO AEW&C Program Management Agency
NAPMO	NATO AEW&C Program Management Organization
NATO	North Atlantic Treaty Organization
O&S	Operations and Support
P&B	Planning and Budgetary
R&D	Research and Development
SPO	Systems Program Office
USAF	U.S. Air Force

## CHAPTER 1

### INTRODUCTION

Early in 1970, the North Atlantic Treaty Organization (NATO) decided to go ahead with the Airborne Early Warning and Control (AEW&C) program to ensure its capability to detect low-flying aircraft and missiles which could evade ground-based radar. In 1975, NATO selected the Boeing Aerospace Company's (Boeing) Airborne Warning and Control System (AWACS) aircraft to meet the low-level threat. The AWACS consists of an advanced pulse-Doppler radar mounted on a Boeing 707 airframe, together with data processing, communications and other mission-related equipment. Capable of flying above 30,000 feet, it can provide coverage to ground level of all airborne targets for hundreds of miles from its position, even deep into the territory of possible adversaries, thereby precluding a possibility of a no warning attack. In 1976 the first program proposal was submitted for 32 AWACS which was subsequently reduced to 27 AWACS.

In March 1977 the United Kingdom advised NATO that its contribution to the airborne portion of the program would be in the form of 11 NIMROD Airborne Early Warning aircraft. Subsequently, a NATO decision was made to establish a force of 18 AWACS aircraft and 11 NIMROD aircraft. As a result, the agreed-to program includes: 18 AWACS aircraft which are to be standardized with U.S. Air Force (USAF) AWACS aircraft; and modification to the existing NATO air defense ground environment and associated base facilities, as well as the NIMROD aircraft.

Responsibility for the overall management of all aspects of the acquisition and initial support phases rests with the General Manager of the NATO AEW&C Program Management Agency (NAPMA). However, the major elements of AWACS aircraft acquisition will be procured under an arrangement wherein the United States acts as an agent for the NATO AEW&C Program Management Organization (NAPMO) in conducting negotiations with the contractors and executing the normal acquisition management functions.

#### USAF AUDIT EFFORTS

At the time of our review, the USAF Audit Agency was conducting a survey of the AWACS program. As a result of the survey and after discussion with us, the Audit Agency decided to perform an audit of the AWACS during the October 1979 through July 1980 period (3.9 direct staff years have been allocated to the review).

The audit will cover selected aspects of the activation and deployment of the AWACS. Some elements of the AWACS program which will be reviewed are:

- Logistics support plans and procedures and maintenance concepts involving interim contractor support and establishment of depot-level repair capability.
- AWACS Systems Program Office policies and procedures to manage selected aspects of the NATO AWACS acquisition agreement.
- Commingling and reallocation of assets between U.S. and NATO programs.
- Enhancement of plans and programs.
- Financial management.
- Training.

#### SCOPE OF REVIEW

During this review, we were provided various briefings on the NATO AEW&C program, researched published reports, interviewed Department of Defense (DOD), State, and USAF officials at the headquarters and field levels, discussed program issues with the U.S. prime contractor, and examined various documents and records made available to us.

We completed the portion of the review concerning the events leading up to the NATO procurement of the AWACS and the status of the aircraft acquisition. However, little information was available on the status of the other program elements, including acquisition of ground environment and base facilities and planning for the operations and support of the AWACS. The apparent reason for this is that the overall management of the NATO AEW&C program is vested in NAPMA. We attempted to discuss the overall status of the program with a number of U.S. contractor and Government officials. Generally, we were advised that NAPMA would be the source for details relative to the status of the program elements beyond those dealing with AWACS aircraft acquisition.

We asked DOD to arrange a meeting with appropriate officials in NAPMA. The General Manager, NAPMA, refused to meet with us or to respond in writing to questions relative to the status of the NATO AEW&C program.

In our request to meet with NAPMA officials, we emphasized that the objective of the review was not to examine and audit the administrative and operational accounts of NAPMA, but rather to obtain needed information on the overall status and management of the program. Again this covered such areas as facilities, ground environment equipment, and planning for the operation and support of the AWACS. Also, we stated that information was needed on the AWACS' interoperability with the NIMROD.

The following is the NAPMA General Manager's rationale for not meeting with us.

"The International Board of Auditors for NATO is chartered by the North Atlantic Council to review the NAPMA and is not in favor of allowing NAPMA to be reviewed by agencies of the participating governments. They invite national agencies instead to concentrate on their own contractual efforts in support of the NATO program.

"The General Manager is concerned with the potential difficulties that could arise as a result of a review by high-level legislative agencies of the member nations. The program is encountering unfavorable commentary in certain European parliamentary bodies, particularly concerning cost and offset purchases by the US. Injecting yet another parameter to the argument would only help opponents of the program.

"The General Manager is also concerned with the potential disruption that could result if a number of participating governments attempted to review the program on a recurring basis."

The U.S. Mission to NATO generally agreed with their position. The U.S. Mission's point of view is:

"\* \* \* although we support GAO reviews of the U.S. participation in international organizations in principle, we are unaware of substantive precedent for the GAO to review an international organization such as the NAPMA, which is multinationally funded and envisions multinational ownership of the program's assets. We have no substantive basis for challenging the General Manager's views, in particular considering the charter of the International Board of Auditors (SUB A SUPRA). In addition, we see potential risk in establishing

a precedent for national review of multinational programs. Any nation wishing to back out of an unpopular program, or advance the position of a competitive program, might well use a precedent to further their own objectives at the expense of the alliance."

DOD did attempt to bring us into contact with responsible U.S. officials who had knowledge of the various NATO AEW&C program elements. The officials contacted were quite cooperative and presented the U.S. position on the overall program. Nevertheless, they lacked the data to fully inform and enable us to make objective evaluations of the program status.

In accordance with section XVII of the Multilateral Memorandum of Understanding (MMOU), we recognize that with the exception of all contracts and subcontracts placed within U.S. industries, other aspects of the NATO AEW&C program are outside of our audit authority. Nevertheless, with our understanding of NAPMA procedures and operations as well as the status of the overall program, we could provide a more meaningful report to the Congress. Our report is limited to (1) U.S. participation in the aircraft acquisition phase of the program and (2) information obtained from responsible U.S. officials on the other program elements. Also, the report does not examine all the complex issues associated with the program, such as military requirements and operation competence. We believe these issues are germane to program progress and outcome.

## CHAPTER 2

### PROGRAM STATUS

The MMOU, the basic document which defines the scope of the NATO AEW&C program, was signed by all NATO Defense Ministers in December 1978 except for Iceland and Belgium. Iceland does not participate in NATO military programs. Belgium, which had a transitional government at the time the MMOU was signed, recently reached a decision whereby it would not participate in the aircraft acquisition phase of the program, but would participate in the other program elements. France, which was not involved in program negotiations, and which is a non-military member of NATO, declined to join the program as a subscriber.

The MMOU records the basic national understandings on aircraft numbers, modification to the ground environment and facilities, aircraft configuration, acquisition costs, operations and support costs, cost sharing, procurement schedule, management, ownership, basing, industrial collaboration, financial management, technical information exchange rights and protection, quality assurance and audit, and other government services. Major considerations relative to certain key provisions of the MMOU are discussed throughout this report.

Responsibility for day-to-day management of the NATO AEW&C program is assigned to the General Manager of NAPMA which is located in Brunssum, the Netherlands. The General Manager, NAPMA, is responsive to guidance from a Board of Directors, which together with NAPMA constitutes NAPMO. The Board of Directors consists of a chairman and a member from each participating nation.

The second principal document, the NAPMO charter, established NAPMO as an integral part of NATO partaking of its juridical entity and possessing the necessary authority to conduct the appropriate activities to achieve overall program objectives. This document was approved unanimously by the NATO Foreign Ministers on December 8, 1978. An organizational chart of the principal management offices involved in this program within NATO and the U.S. Government is included in appendix I.

The third principal document in this program is an Acquisition Agreement between the U.S. Government and the NAPMA. It represents the Foreign Military Sales (FMS) letter of offer and acceptance and provides for the sale to

NAPMA of defense articles and services, among which are the services of the United States as agent for the aircraft acquisition contracts. The Acquisition Agreement defines the responsibilities and authority of the U.S. Government to act as NATO's agent in the procurement of the airborne component of the program (AWACS) from U.S. contractors.

The United States, acting as an agent for NATO, conducts negotiations with contractors and executes the day-to-day management functions through the USAF AWACS Systems Program Office (SPO) at Bedford, Massachusetts. However, the contract is between the prime contractor and NAPMA, and it is a direct purchase. Minor exceptions to the agency concept are planned for a few portions of the aircraft element. These exceptions entail procurement of U.S. common replenishment spares and training for which U.S. FMS procedures are either more practical or more economical.

Procurement of the goods and services needed to modify the ground environment facilities are being made by direct contract between NAPMA and the contractor. Base facilities other than aircraft-associated equipment, which is being procured through the U.S./NAPMA acquisition agreement, are being procured by relevant nations on behalf of NAPMA.

#### STATUS OF THE PROGRAM

The following summarizes the various parts of the program and their status.

##### Acquisition phase

The acquisition phase includes four elements: aircraft development and procurement; ground environment modifications; base facilities construction; and administration.

##### Aircraft acquisition

This program aspect is comprised of the development and production of 18 U.S./NATO standard configuration AWACS together with supporting ground equipment, initial spares, war-readiness material, initial crew training, and technical support and data. The aircraft acquisition is currently the most advanced aspect of the NATO AEW&C program. The aircraft acquisition agreement between NAPMA and the USAF was signed in April of 1979. Boeing, the prime contractor for the AWACS, expects to definitize its production contract with the NAPMA

within a April-September 1980 timeframe, with deliveries of NATO AWACS aircraft to Europe to begin in February 1982. We were unable to determine the status of the United Kingdom's NIMROD development and production program.

#### Ground environment modifications

The modification of 52 ground environment sites were planned in order to be compatible with the NATO AEW&C aircraft. This included the development, production, and installations of modifications and equipment for AEW&C interfaces in control-capable sites of the existing NATO Air Defense Ground Environment (NADGE) system, and UKADGE (the British system), national support facilities and the NATO program facility, including site surveys and necessary construction work. Preliminary plans have also been made for possible installation of interfaces at French sites. NATO is presently considering a program revision calling for a reduction in the number of modified ground environment sites from 52 to 43 (or less), in an attempt to stay within budget limitations, while meeting revised operational requirements.

Work is progressing on the ground environment modification with the prime contractor performing under an "advance agreement" with NAPMA. USAF, which will not act as agent for this aspect of the program, anticipates NAPMA will define its contract with the prime contractor by mid-1980.

#### Base facilities construction

Modification and installation of equipment to support AEW&C operations from the main operating base (MOB) located at Geilenkirchen in the Federal Republic of Germany (FRG); forward operating bases in Greece, Italy, and Turkey; and a forward operating location in Norway will be contracted for and managed by NAPMA. Limited construction-related work of the needed modifications has started at the MOB. Due to the limitations placed on our review as described in chapter 1, we were unable to verify the reasonableness of any cost associated with base facilities.

#### Administration

Administration of NAPMA to manage the development and acquisition activities through transition to operational control has been established and located at Brunssum.

## Operations and support phase

The overall program includes plans and funding for aircraft; operational and technical support personnel; augmented and follow-on spares, petroleum, oil and lubricants; specialized maintenance and depot services; and follow-on training.

The MMOU is primarily confined to the acquisition phase of the program, although it defines principles for Operations and Support (O&S), including long-term funding arrangements. USAF officials expressed concerns that the operations and support estimate as set forth in the MMOU is seriously understated. Also, there are serious differences as to what type of costs should be reimbursed to participating nations. (See ch. 3 for further discussion.) A separate agreement is required by the MMOU to more precisely define the long-term O&S arrangements.

Once the force has been acquired, with initial operating capabilities scheduled for the early 1980s, it will be owned by NATO and manned by all participating countries, under the operational command and control of the three major NATO commanders (The Supreme Allied Commander, Europe; The Supreme Allied Commander, Atlantic; and Commander in Chief, Channel) through the Supreme Allied Commander, Europe, as executive agent.

### CHAPTER 3

#### COSTS ASSOCIATED WITH

#### THE NATO AWACS PROGRAM

Although proposed funding for NATO AWACS is a small percentage of the total amount NATO members are planning to spend for air defense during the next 5 years, the purchase of the 18 AWACS nevertheless represents the alliance's largest single commonly funded endeavor.

#### NATO AWACS PROGRAM COSTS

The total acquisition cost estimated at the close of 1978 as \$1.826 billion (June 1977 dollars) for the most part was programed for actual aircraft acquisition. The acquisition cost and those costs for the support and maintenance of the system have varied commensurate with changes in configuration, numbers, and underlying assumptions. Also in the MMOU are estimates of the ground environment interface costs which represent those items required to modify the existing air defense ground environment systems to make them interoperable with the AWACS and base facilities costs associated with modifications, buildings, and facilities to house and support the AWACS at the main operating base located at Geilenkirchen, FRG, and peripheral bases.

Although the cost estimates are merely an estimate of program costs, they are important in that they represent a ceiling on the contribution of seven of the program participants. The signatories having reservations, including Canada and the FRG, stipulated that their program contribution (about 53 percent of program costs) would, under no circumstances, exceed MMOU estimates. Obviously, if the signatories with reservations remain adamant, any funding shortfall will have to be resolved either through program cutbacks or increases in the contributions of remaining program participants of which the United States, at 42 percent, is the largest. The Acquisition Agreement between the United States and NAPMO for purchase of the aircraft was signed in April of 1979 and adheres to the original purchase estimate of the MMOU. USAF officials have indicated, therefore, that there is little room in this budget to accommodate cost increases.

National cost shares

Principal among the terms and conditions of each nation's participation, as set forth in the MMOU, are the national cost shares.

<u>Nation</u>	<u>Acquisition shares</u> (percent)	<u>Annual stable year</u> <u>operations and support shares</u> (percent)
Belgium	2.74	3.39
Canada	9.78	9.43
Denmark	1.67	2.00
Germany	30.72	28.14
Greece	.66	.62
Italy	5.59	7.27
Luxembourg	.09	.11
Netherlands	3.29	3.75
Norway	1.36	1.46
Portugal	.08	.70
Turkey	.84	1.60
United Kingdom	1.06	
United States	a/ 42.12	41.53
	<u>100</u>	<u>100</u>

a/ DOD estimates that when the equivalent cost of the NIMROD is included, the U.S. share is not expected to exceed 33 percent. The other percentage shares, with the exception of the United Kingdom's, would be reduced correspondingly.

Acquisition shares

The acquisition shares were determined by the application of three formulas:

- The NATO infrastructure budget formula was used to allocate among nations the cost of modifying the air defense ground environment and refurbishing base facilities. This formula is ordinarily used for allocating cost shares in commonly funded NATO infrastructure programs.

--The NATO civil budget was used to allocate the costs of program administration among the nations.

--A special formula was devised to allocate the costs of the AWACS aircraft. The formula was based on the relative Gross Domestic Product of participating nations, but modified to account for the economic benefits and investment costs of industrial collaboration in Germany and Canada and to account for the U.S. investment in AWACS research and development.

As a result, the three producing nations will share approximately \$1.508 billion (82.62 percent) of the \$1.826 billion acquisition cost (June 1977 dollars). The U.S. share will be \$769 million (June 1977 dollars).

#### Operations and support shares

The O&S cost shares for each nation were determined by averaging its acquisition share percentage with its NATO military budget share percentage. The O&S costs for the NATO AWACS force are estimated to be \$98.9 million a year. In addition, annual ground environment costs are expected to increase by \$6 million as a result of Airborne Early Warning interface. This cost will not be borne by the AWACS budget but by existing O&S budgets for the NADGE systems.

The MOB will require extensive upgrading and repair. Originally estimated to cost approximately \$50 million, certain program officials now believe that these necessary base modifications may cost substantially more than that amount. They also believe, however, that the FRG, as host country and the sole nation receiving the economic benefits of the MOB, may be willing to assume these excess costs despite their MMOU stipulations. We were unable to verify this statement; however, under the terms of the MMOU, host countries are to provide "wherever possible" necessary support for those NATO AWACS forces located within their national territories.

#### WAIVERS AND CONCESSIONS

The United States and its NATO allies have been considering deployment of the AWACS since 1975, but monetary and configuration questions prevented final commitment to the program until 1978. The United States, believing the NATO/AWACS deployment to be in both its own and NATO's best interest, has, during that period and afterward in accordance with stated U.S. policy toward NATO, agreed to numerous concessions (including

cost waivers, reciprocal purchases, and coproduction) to facilitate the common procurement. In our opinion, many of these concessions should be considered with the U.S. direct and equitable share in determining the total U.S. contribution to the NATO AEW&C program.

#### Cost waivers

Under the FMS program, DOD procedures call for charging purchasers with all its direct and indirect costs. Although some of these costs applicable to NATO AWACS could be waived in the interest of NATO standardization, the allies opted to remove the major portion of the sale from the FMS process, in part to avoid otherwise non-waivable charges.

The Congress, in the DOD Supplemental Appropriation Authorization Act of 1979 (P.L. 96-29), granted the Secretary of Defense the authority to waive reimbursement for the following functions performed by U.S. personnel other than those employed at the USAF AWACS program office in fiscal year 1979: auditing, quality assurance, codification, inspection, contract administration, acceptance testing, certification services, planning, programing and management services, and any surcharge for administrative services otherwise chargeable. The DOD Authorization Act, 1980 (P.L. 96-107) granted similar waiver authority for fiscal year 1980. These charges total approximately \$44 million.

DOD stressed that other participating nations have agreed to provide free of charge, on a reciprocal basis, such services as set forth above. However, DOD could not provide us with any amount of such services or how much could be anticipated.

#### Research and development (R&D)

DOD directives call for purchaser reimbursement of its non-recurring costs associated with the R&D and production of major defense equipment offered for sale to foreign governments and international organizations. The 18 NATO AWACS units' original R&D cost was \$432 million.<sup>1/</sup> This figure was waived before any Planning and Budgetary (P&B) data was compiled, and a flat 4-percent R&D recoupment charge (\$53.44 million) substituted.<sup>2/</sup> This was subsequently waived prior to submission of final P&B price data, the United States thus

---

<sup>1/</sup>Based upon a \$24.01 million/unit R&D charge placed upon the AWACS to Iran.

<sup>2/</sup>In accordance with DOD Directive 2140.2 (Jan. 23, 1974).

foregoing direct recoupment of any aircraft costs. The United States will indirectly recoup \$218 million through revision of its basic cost share, but is nevertheless waiving collection of the remaining \$214 million R&D surcharge.

The present NATO AWACS configuration envisions utilization of the Joint Tactical Information Distribution System (JTIDS) as an electronic countermeasure resistant communications system. The United States has also waived NATO's full R&D charge of \$19.4 million 1/ for this system, for total American R&D waivers of \$233.6 million.

The Arms Export Control Act provides that DOD may waive or reduce charges for nonrecurring R&D and production costs if the sale would significantly advance U.S. interests in NATO standardization. Although the legislative history of the act does not explain what is meant by the term "significantly advance," the AWACS deployment is without a doubt a major step toward this goal.

#### Asset use and rental charges

Foreign military sales of defense articles, which involve the use of U.S. Government-owned facilities, are ordinarily priced to include a 4-percent assets use charge. Such sales which involve the use of Government-owned tooling are likewise priced to include a charge for rental of the Government equipment. Both charges, amounting to \$17.7 million (\$2.7 million assets use, \$15 million rental) would have been applicable to a NATO AWACS FMS transfer, but have been waived, under the present direct purchase and Acquisition Agreement arrangement.

#### Administrative charges

DOD guidelines specify a surcharge of 3 percent to be added to the cost of contractual services, new procurements, or material from stock to be provided under FMS. The United States has waived the full NATO AWACS administrative surcharge of \$10 million pursuant to the statutory authority in Public Law 96-29 and 96-107. The administrative surcharge had been set at \$48.9 million prior to the decision to change the AWACS program from FMS to direct sales.

---

1/\$1.08 million/aircraft x 18 aircraft.

Other waivers

In addition to the items listed above, the United States has waived additional charges in the amount of \$34.5 million. A summary list of NATO AWACS cost waivers, as compiled by the USAF, follows:

NATO AWACS PROGRAM  
Cost Waivers

(in millions of June 1977 dollars)

<u>Waived by DOD</u>	<u>Amount</u>
Full R&D recoupment	\$ 214.18
JTIDS R&D recoupment	19.38
Asset use charge	2.71
Rental charge	<u>15.00</u>
	\$ <u>251.27</u>
<u>Waived by DOD under special authority from the Congress</u>	
3-percent FMS administrative surcharge	\$ 10.18 (est.)
Quality assurance	3.50
Audit charge	.13
Travel (non-SPO)	2.25
Contract administration service	7.56
Acquisition services	<u>21.06</u>
	\$ <u>44.68</u>
Total waivers	\$ <u>295.95</u>

Economic benefits

A major objective of NATO AEW&C program planners has been to cushion the program's cost impact by maximizing its return of economic benefits to participating Euro-Canadian nations. These economic benefits may be divided into three broad categories: industrial benefits, industrial compensation, and non-industrial benefits. Although industrial benefits flowing from the AWACS production and purchase are incorporated into the MMOU and therefore quantifiable, other benefits are difficult to measure.

## Industrial benefits

These benefits, comprising both industrial collaboration and offset, are defined in general as the work performed by the industry in the countries of participating governments, which benefit those countries either economically in the employment of national manpower, or technologically in the transfer of knowledge of the system, or both.

Industrial collaboration (IC) refers to work which can be defined by industrial contracts or subcontracts for development and production of NATO AEW&C program elements produced by industry of program participants other than the United States.

Industrial offsets, also defined by contract, but pertaining to cases wherein it is not deemed economical to seek new, non-U.S. sources, consist of the U.S. contractor's commitment to purchase non-AWACS items from Euro-Canadian sources.

The major IC element of the program is associated with the development or production of equipment and software for the AWACS aircraft. In the fall of 1974, the USAF asked Boeing, as prime contractor, to draw up a list of potential Euro-Canadian manufacturers for industrial collaboration. By basing such collaboration upon a specific manufacturer's ability to produce a particular component, program planners hoped to avoid problems encountered by earlier collaborative efforts which attempted to place production contracts with co-producers equal to a certain amount of a weapon system's procurement value.<sup>1/</sup>

In 1975 Boeing submitted its bidders list to Ministries of Defense for review and approval. Although national governments were, therefore, notified of potential collaboration participants, Boeing officials stressed to us that it alone was responsible for determining contract awards.

---

<sup>1/</sup>See GAO report titled "A New Approach Is Needed For Weapon Systems Coproduction Programs Between the United States and Its Allies" (PSAD-79-24, Apr. 12, 1979).

With changes in configuration and number of production units, the estimated amount of IC content for the aircraft component has varied substantially between Boeing's initial 1976 proposal and the 1978 figures incorporated into the MMOU. Cost inefficiencies associated with concurrent production of identical items in different countries result in a cost penalty or "premium." Differing labor practices, the requirement for duplicate tooling, and the lack of economies of scale in the NATO AEW&C program all contribute to these higher costs. Industrial collaboration estimates are shown below:

Industrial Collaboration Estimates

	<u>Content</u>	<u>Premium</u> (millions)
April 1976 (32 units)	\$439	\$203 (76 \$s)
October 1976 (27 units)	351	160 (76 \$s)
October 1977 (18 units)	374	148 (77 \$s)
February 1978 (18 units)	317	93 (77 \$s)
December 1978 (18 units)	293	-- (77 \$s) <u>a/</u>

a/Figure unavailable.

Industrial Collaboration  
NATO AWACS Aircraft Components  
Selected Sources

<u>Component</u>	<u>Producer</u>
Installation and Checkout Communications Equipment/ Interface Adaptor Unit	Dornier (FRG)
Radar Components	AEG Telefunken (FRG)
Mechanical Special Test Equipment/ Aerospace Ground Equipment	AEG Telefunken (FRG)
Electrical Special Test Equipment/ Aerospace Ground Equipment	Dornier (FRG)
Processor Components	Diehl (FRG)
Display Subsystems	Standard Electric Lorenz (FRG)
Antenna Drive	Siemens (FRG)
Software Support	Liebherr (FRG)
On Board Testing, Monitoring and Maintenance	ESG (FRG)
Engine Nacelles	Litton of Canada (CAN)
	Fleet Industries (CAN)

Industrial benefits will also be provided for countries participating in the acquisition of the ground environment interface modifications program. Unlike the aircraft component, however, the modification program will be based on a "not-less-than" percentage formula. Program objectives call for U.S., U.K., and FRG industries to receive orders for amounts at least equivalent to 24.1 percent, 12.0 percent, and 23.3 percent of the contract price, respectively.

As far as is practicable, any industrial benefits arising from the NATO AWACS program other than those expressly stated in the MMOU will be distributed between the participating governments regarding their contributions toward acquisition costs of the program components. Where it is impossible, for any reason, to allocate industrial benefits in such a manner, the NAPMO Board of Directors will determine the acceptability of any variant or less equitable distribution of benefits on the basis of NAPMA recommendations. The Board's decisions will be final.

#### Industrial compensation

This benefit refers to bilateral agreements as a result of the program, but outside its management, to provide access to U.S. Government defense contracts for industries in participating nations. The United States has offered to continue supporting development of bilateral memoranda of understanding with participating nations which would result in waivers to the "Buy-American Act" <sup>1/</sup> provisions for defense-oriented contracts, until such time as contracts have been obtained offsetting the proportionate share of nation's contributions to AWACS procurement spent on the United States. Nations' industries would be required to compete for this business, generally against U.S. firms, but the competition would not be subject to the act's provisions which provide an advantage to U.S. bidders. The United States and the FRG entered into such an agreement in November 1978. Many other such agreements with NATO members have also been signed.

---

<sup>1/</sup>The act (41 U.S.C. 10a-10d) requires generally that any Federal agency acquiring materials for public use within the United States, purchase only domestic products, if present in sufficient and reasonable commercial quantities.

### Non-industrial and other benefits

These benefits include funds which would be counted in balance-of-payment considerations but should not necessarily be directly associated with industrial participation as well as less tangible benefits, such as technology transfer and employment opportunities. They also include benefits arising from non-aircraft elements of the AEW package.

Boeing has identified \$5.3 million in costs associated with maintaining a field office in Europe to work with NAPMA in managing their AEW program activities. This estimate was made upon the assumption that the field office would be located in Brussels, Belgium. With the decision to base NAPMA in Brunssum, in the Netherlands, this figure may be subject to some revision. The location of the field office is viewed as a non-industrial benefit to the host country, since it would entail expenditures for office rentals, secretarial and administrative support, as well as salaries in the host country rather than industrial contracts to host country firms. Boeing also identified \$25.6 million in expenditures associated with resident management teams at IC sub-contractor facilities in Canada and Germany. While this is viewed as another non-industrial benefit, these costs are related to IC activity and therefore contribute to calculation of the IC premium.

Official estimated costs for renovating and establishing adequate AWACS basing facilities include approximately \$49 million for the MOB and \$21 million for peripheral bases. These amounts would bring additional IC benefits to host countries.

DOD has made no attempt to quantify less tangible benefits such as employment, balance-of-payments, potential for future business and technology transfer. Contractor officials believe, however, that technology transfer, at least in the aircraft elements, will be minimal because most technology incorporated in the system is already well known and the most innovative AWACS components will not be co-produced.

## U.S. economic benefits

As contrasted to the economic benefits accruing to the participating Euro-Canadian nations, DOD estimates that of the total program acquisition cost, about \$700 million will be returned to the United States from other participating nations as direct benefits to the U.S. economy. DOD further believes that taking into account the total program, including the U.S. contribution thereto, the return to the U.S. economy will be about \$1.35 billion (June 1977 dollars).

## Offsets outside the NATO AEW&C program

In addition to various concessions the United States made, certain countries have sought special offsets or considerations outside the program in return for initial commitments. For example, in one instance, a country asked the United States to finance up to \$50 million in any given year for its share because of possible budgetary problems.

DOD and State officials maintain these types of considerations always arise in negotiations of this kind and that the United States has not agreed to any separate offsets in connection with the NATO AEW&C program except for industrial compensation as discussed on pages 15 and 16. We found, however, that U.S. allies do see program linkages regardless of the U.S. position that separate arrangements do not exist officially. For example, an August 1979 letter from FRG's Minister of Defense to the U.S. Secretary of Defense revealed the FRG Parliament's concern about the present development of compensation projects bilaterally agreed upon. The letter added that a freeze of the FRG AEW&C share for 1980 was possible. The projects primarily specified were the U.S. procurement of FRG non-tactical vehicles, the European Telephone System, 1/ and introduction of the Roland Weapon System into the U.S. Army. Also, the letter implied other unidentified agreed-to projects may exist. FRG's Minister stated that delays, reductions in purchase order value, or especially cancellations of these projects would greatly affect a continued FRG participation in the AEW&C program. Also reiterated was the FRG's strict reservation toward payment of any cost increases in the AEW&C program.

---

1/The purchase of equipment and installation services to upgrade the U.S. Army's European Telephone System.

In a September 1979 response, the Secretary of Defense acknowledged the bilateral projects pointing out that the: (1) United States has already awarded contracts worth about \$10 million for FRG non-tactical vehicles, with plans for additional contract awards worth more than \$40 million through 1981 (the United States is fully committed to meeting the full procurement goal of \$100 million by the end of 1985); (2) U.S. 1980 budget includes first-year funding for the European Telephone System valued at \$99.5 million with a target start before December 1979; and (3) United States intends to introduce Roland units into the U.S. Army.

We identified a fourth project linked to the NATO AEW&C program by the FRG involving the U.S. purchase of a license to manufacture the German 120mm gun for the Army's XM-1 tank. This project has a potential economic value of \$72.6 million. Although each of these projects may conceivably stand on its own merit, we believe it is very clear they are fully tied to the NATO AEW&C program.

#### POTENTIAL FUNDING SHORTFALLS

Program officials continually stressed that there is very little leeway in the budget to accommodate cost increases and that certain of our NATO allies have made it clear they will not increase their contributions. Should such increases occur, the United States could be placed in the position of either agreeing to program cutbacks or unilaterally assuming these costs although the MMOU itself places the United States under no legal obligations to do so.

#### Negotiating the price of the AWACS production contract

A foreign government, considering the purchase of a U.S. weapon system, ordinarily requests price data from the United States under the FMS procedures authorized by the Arms Export Control Act. As a first step, the U.S. armed forces branch which would oversee the transfer prepares a P&B estimate. This report is intended for P&B purposes only and is designed to be sufficiently accurate to serve the planning purposes of the particular sales case, but is normally not as fully developed or widely coordinated as the later more detailed estimates. In short, the P&B will give the prospective purchaser a approximate cost figure. NATO requested, and the USAF supplied, such an estimate for the purchase of 18 standard configuration AWACS units. The USAF emphasized to NATO that the estimate was for planning purposes only and could be revised as a result of contractor follow-on proposals or changes in U.S. Government policy. Nevertheless,

the allies used this data in developing cost figures for the MMOU. The decision to base participating countries' contributions on this estimate became critically important when several signatories stipulated that they would not increase their contributions above the MMOU figures. These decisions placed the USAF in the position of managing a program with little flexibility in meeting unforeseen cost increases.

Boeing's "not-to-exceed" estimate for the cost of aircraft acquisition is approximately \$147 million in excess of MMOU budgeted figures. This potential cost increase resulted from a number of factors which include NATO requests for additions to the original configuration plus a Boeing request for \$16 million to cover any unforeseen contingencies arising from the unique "agency" (rather than standard FMS) nature of this transfer. The SPO is negotiating with Boeing in an attempt to reconcile these figures, but admits that complete reconciliation is unlikely.

A great deal of negotiating room was lost with the cancellation of the former government of Iran's intent to purchase an AWACS force. The NATO AWACS P&B cost figures were derived under the assumption that Iran would purchase 7 AWACS and necessary support. The new Iranian Government canceled that program. Since the unit price of each plane increases as the total number of production units decreases the total NATO AWACS purchase cost has risen by, in the USAF's estimation, \$34 million. The USAF believes the program can absorb this additional cost but it will be more difficult to negotiate a price for the production contract within the budgeted amount.

Belgium's contribution will not include aircraft acquisition. The cost-sharing ratios in the MMOU presume full national participation. However, Belgium has stated that its contribution to the NATO AEW&C program would be limited to ground environment and base facilities; to NAPMA administrative costs; and to operation and support costs of the force. This results in a funding shortfall of \$34 million in 1977 dollars.

In recognition of this shortfall and to provide a management contingency should the final negotiated price of the aircraft production contract exceed the available funding, NAPMA, with input from the nations, developed a prioritized list of contract items that might be deleted, deferred or reduced in scope. This list was considered by the NAPMO Board of Directors in a February 1980 meeting, and the NAPMA General Manager was authorized to implement certain options to the extent of the funding shortfall resulting from the current Belgian position.

## Annual funding requirements

The FRG and several smaller share participants have "back loaded" their annual funding requirements into the latter acquisition program years because domestic budgetary constraints prevent them from supplying their full shares during the early program years. For example, the FRG has agreed to pay 69 percent of its total contribution during the final 4 years (1982-1985) of the acquisition program. To offset this funding shortfall during the early program years, the United States has agreed to supply 77 percent of its total acquisition contribution through 1981 (first 4 years) and 95 percent of its total acquisition contribution through 1982 (first 5 years).

There is a problem of adequate inflation coverage with respect to the staggered payment schedule even though all participants originally agreed to pay a fair share of inflation costs. Turkey, one of the participants which agreed to meet its funding requirements in the latter program years, now has stated it will not pay any inflation costs. According to USAF, this results in a funding shortfall of \$6 million. As in the case of the Belgian decision not to participate in the aircraft acquisition, the NAPMA General Manager has been authorized to implement certain options to the extent of the funding shortfall resulting from Turkey's decision not to pay any inflation costs.

Also NAPMA has yet to agree with the FRG upon a formula to adjust the FRG contribution to offset the effects of inflation. At issue is whether inflation payments ought to be based on each participant's annual contribution expressed in June 1977 dollars or based on each participant's percentage share. Obviously agreement needs to be reached to allocate cost adjustments due to inflation because not all participants are providing proportionate contributions toward program acquisition costs on the same payment schedule. Due to the lack of such agreement, according to USAF, the FRG has been paying its annual shares without any inflationary adjustment. The USAF estimates that the adjustment amounted to approximately \$10 million as of February 1980.

## Other possible adverse impacts on the program costs

NIMROD, although a vital and integral part of the program, is virtually an unknown entity. DOD explained that the British have not been forthcoming in terms of details on NIMROD status. Neither DOD, the Air Force's SPO, nor Boeing, therefore, could provide detailed information as to the status of NIMROD. This

raises a question as to how NIMROD and AWACS will become interoperable as pledged without closer communication among the parties. However, according to USAF officials, both the AWACS and NIMROD are being developed with common message standards which are defined and coordinated through international organizations. Also, we were told that the NIMROD has experienced program delays and cost growth and that the Air Force staff and appropriate British officials are now having semiformal meetings on NIMROD/AWACS interoperability.

Another potential adjustment in program costs or program scope could arise if any member drops out in the future or if Belgium's position holds firm not to join the aircraft acquisition element of the program. Still another and more recent possible impact on program costs is the position taken by FRG and several other participants that they should be reimbursed from the program O&S budget, for military personnel they contribute to and for indirect training costs.

If approved, reimbursement will significantly increase the O&S budget to cover personnel costs and support costs as well as the additional cost of administering the reimbursement procedure (for which no procedures or resources are available). None of these costs were included in the estimated O&S budget contained in the MMOU.

Not all potential funding shortfalls have international origins. The SPO admits that the United States and NAPMA may have miscalculated initial acquisition costs by \$50 million or more. Nor are all cash flow problems the result of unforeseen cutbacks in funds, or increased costs. Boeing's estimated billing profile for calendar year 1980 exceeds the funding profile by \$84 million. This money is included in the overall acquisition budget, but is not included in the calendar year 1980 portion of that budget. The SPO is currently negotiating with Boeing in an attempt to resolve the pricing problem. In addition a cut-back in the USAF AWACS buy below the 34 programmed, though not below the 28 already operational or in procurement, could raise the purchase costs of the 18 NATO units.

## CHAPTER 4

### EQUITABLE COST SHARING--

#### IS IT BEING ACHIEVED IN THE

#### NATO AWACS PROGRAM?

Although the defense improvements for NATO may be significant, our study of the progress of this program to date raises a question as to whether equitable cost sharing is being achieved. As discussed in earlier chapters, (1) the U.S. direct and indirect program contribution is well beyond the stated share set at 42 percent, and (2) the program currently faces substantial potential funding shortfalls. The potential for program cost growth is a reality and new forms of increases are sure to arise as the program progresses. Some areas of program cost growth may be resolved by program modification and national priorities may alter some of the members' reservations. Realistically, however, the United States may ultimately choose to shoulder the bulk of added program costs, especially when considering DOD's positive attitude shown toward demands made by NATO members thus far and the major role in burdensharing the United States has played in past alliance efforts.

The positive attitude shown by the United States is not a recent phenomenon in the program. For example, a responsible DOD official testifying before the Senate Armed Services Committee on March 6, 1975, during the then recent Defense Systems Acquisition Review Council (DSARC) deliberations, said that

" \* \* \*it became obvious that if the United States wanted to preserve an incentive for our allies to bear a majority cost of the AWACS forces--and without incurring a break in the AWACS production line--the United States would have to 'stretch' the USAF production program."

The official further said the DSARC concluded that,

" \* \* \*the USAF production program for the fiscal year 1975 and fiscal year 1976 procurement should be changed from a rate of one aircraft per month to a rate of one aircraft every two months."

This became a fact.

This report, for the most part, concentrates on the cost aspects of the NATO AEW&C program. Nevertheless, we recognize that the multinational program is important to NATO. As stressed by DOD, it acts to strengthen the perception both of NATO's collective resolve and its competency as a partnership to assert a common political will. Undoubtedly, the sale, as such, furthers U.S. security assistance goals.

#### FACTORS AFFECTING COST SHARING

The NATO AEW&C program constitutes an unprecedented and highly complex effort for all NATO members. It is very difficult to satisfy 13 governments in a single venture. However, our review to date indicates that national priorities may be taking precedent over NATO needs. The NATO allies want the AEW&C program; however, it appears that a prime motivation to their participating is the economic benefits to be derived from the program. This is evidenced by the extensive concessions and compensation programs involved in the program plus the refusal by some allies to share in any cost increases in the program to date.

Coincidentally there appears to be a prevailing attitude among the program participants that the United States will bail out the program if it gets into trouble although the United States is not legally obligated to do so. This attitude is also germane in that Boeing informed us that termination liability is unfunded and, therefore, their most serious concern. The Congress has authorized DOD to assume the contingent liability for the U.S. share of the unfunded liability for fiscal years 1979 and 1980. If the program were terminated, Boeing would depend only on promises for its cost recovery. Boeing maintains that this is a major program problem from its standpoint.

#### CONCLUSION

Cost sharing among NATO members has been a sensitive issue for many years. Greater attention has been given to this issue in recent years due to the alliance's efforts to improve their defensive capabilities to offset the buildup of Warsaw Pact forces. The NATO AEW&C program derives support through an agreement among alliance members to collectively participate in a cost-sharing arrangement for the acquisition of the aircraft and for operations and support activities. An essential element to be examined in collective or common funded programs such as this is whether equitable and reasonable cost sharing occurs between alliance members.

The willingness of the United States to (1) make extraordinary concessions, (2) agree to separate projects as compensation for program participation, and (3) accept an agreement provision which could result in either program reductions or in the United States absorbing additional program cost increases, raises serious questions as to whether equitable cost sharing on the NATO AEW&C program is being achieved. Also, this situation brings into question how much the United States will pay to complete the program and how far it should go unilaterally to ensure the program's success.

Implementation of this project will provide benefits to all the NATO allies. However, we believe that the United States has not put great enough emphasis on obtaining commitments from participating NATO allies to equitably share in any program cost increases over and above the amounts provided for in the basic agreement.

The need for more interdependence and collective actions to solve project problems is critical not only for the NATO AEW&C program but throughout any similar future projects undertaken by the alliance. The prospect for such future projects is rated high by DOD. For example, DOD informed us that the next similar transfer to NATO may involve the U.S. Army's PATRIOT missile system and may utilize some of the methodology employed in the AWACS transfer. The PATRIOT is expected to reach the acquisition agreement and MMOU stage in late 1980. The lessons learned from the AWACS and other transfers in the past will pave the way for future endeavors.

MATTERS FOR CONSIDERATION  
BY THE CONGRESS

Because (1) the NATO AWACS purchase is complex and does not follow normal sales and procurement procedures and (2) the possibility exists that DOD may have to go to the Congress for additional funds if potential program cost growth or funding shortfalls materialize, the Congress may wish to require a full reporting from DOD on the status of the overall NATO AEW&C program. The Congress might consider requiring DOD to identify

- any conditions or caveats placed upon the AWACS purchase by participating countries; total U.S. program costs including waivers and other identifiable concessions;
- unresolved program issues; and
- any potential funding shortfall with an explanation on how the shortfall is expected to be absorbed.

## CHAPTER 5

### AGENCY COMMENTS AND OUR EVALUATION

On February 25, March 3 and 6, 1980, we met with cognizant USAF and DOD personnel to obtain their views on our draft report. While taking no substantive exception to the information contained in the draft report, they did not totally agree with our analyses and conclusions. Various proposed changes to the draft report were discussed. We considered the proposed changes and, for the most part, reflect them in this final report. The major concerns of USAF and DOD were set forth in a March 25, 1980, letter which is included as appendix II. The Department of State offered no comments on the draft report.

In commenting on our draft report, DOD said:

"The DOD, of course, does not share your implied major conclusion that the US share is inequitable. The cost sharing formula for this program, like all NATO cost sharing formulae, was negotiated on the equally relevant bases of ability to pay (measured by relative economic strength) and economic benefits received. Thus, for example, the US percentage share of the NATO infrastructure budget is nowhere near our relative economic strength in the Alliance (somewhat over half of the aggregate gross domestic product of infrastructure contributors) because most of the military installations and their attendant economic benefits are in Europe. For NATO AWACS, most of the economic benefits--something over 70 percent of them in the acquisition phase of the program--accrue to the US. Our cost share reflects this fact, although it was adjusted downward considerably during financial negotiations to account for our previous investment in AWACS R&D."

DOD is justifying the 42-percent share of the acquisition costs and the recurring O&S costs for the NATO AEW&C program which the United States, under the terms of the MMOU, has agreed to pay. Clearly, we do not take issue with the 42 percent share; but, we do take issue about the number of concessions granted or agreed to, by the United States which either have substantially increased or may substantially increase the U.S. contribution.

DOD also commented:

"In several instances, the report cites the fact that a number of other participating governments set a limit to the level of their respective contributions while the US did not. The report then goes on to question whether this state of affairs means that the US will unilaterally increase its cost share to cover real cost growth, but does not logically ask whether the other governments that signed the MMOU without specifically a funding limit will do likewise. We do not anticipate increasing our share unless all other governments do the same, and have so testified to the Congress. It is more likely that the program will be reduced slightly to remain within the funding levels outlined in the MMOU. Indeed, steps along these lines are already being taken."

The NAPMA General Manager has been authorized to implement certain options to the extent of the funding shortfalls resulting from the Belgian decision not to participate in the aircraft acquisition (\$34 million) and the Turkey decision not to pay any inflation costs (\$6 million). How successful he is in making up the funding shortfall remains to be seen. In fact, certain program officials have informed us that the NATO AEW&C program is a very austere program and, therefore, it would be difficult to cut back on costs within the 18 AWACS acquisition phase. This is exemplified by the difficulty in negotiating an affordable production contract.

As discussed in chapter 3, the signatories with reservations, including Canada and the FRG, stipulated that their program contributions (about 53 percent of program costs) would, under no circumstances, exceed MMOU estimates. Of the other nations that signed the MMOU, the United States is the largest contributor with a 42-percent share, while the other four nations are contributing about 2.6 percent of acquisition costs. Belgium, which did not sign the MMOU, had an estimated contribution of 2.7 percent. Obviously, if the signatories having reservations remain adamant, any funding shortfall will have to be resolved either through program cutbacks or increases in the contributions of the other participants of which the United States is the largest. Presently, it appears that every effort will be made to maintain an 18 AWACS acquisition program; therefore, demands for increased contributions are not unlikely if additional funding shortfalls occur.

DOD also commented:

"The report calculates the US' 'real' cost share by noting the cost of services and charges waived for the acquisition effort. Other governments are also waiving otherwise chargeable costs on a reciprocal basis, as called for in the MMOU. Consequently, their real cost shares are also higher than those set out in the MMOU."

DOD could not provide us with any amounts of such waivers or how much could be anticipated. Indeed it appears that any services (as set forth in the MMOU) provided by other participants on a reciprocal basis will be minimal when compared with those provided by the United States. Such disparity exists because the services mentioned are related primarily to the aircraft acquisition which constitutes about 84 percent of the MMOU cost estimates.

DOD further stated:

"It is true that NIMROD costs are not available to us, but the NIMROD force of 11 aircraft will cost at least \$500+ million notional value ascribed to it by NATO authorities in the package proposal. The relative US share of the composite program thus is less than 33 percent."

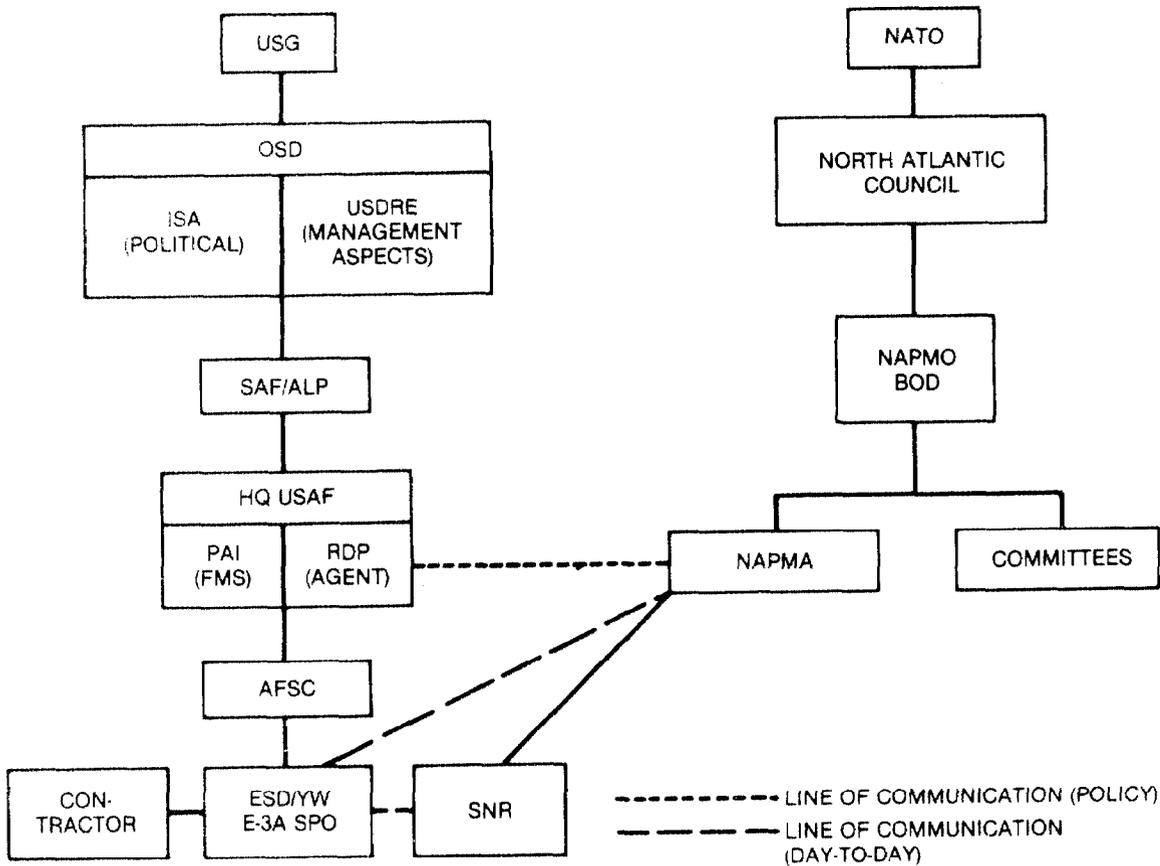
This DOD estimate has been reflected in the report on page 10.

Finally, DOD said:

"The discussion of potential funding shortfalls as they are related to the contractor's current price proposal (page 21 of the draft report) is incomplete and therefore misleading. It also incorrectly identifies the impact of Iran's cancellation of its E-3A [AWACS] program as an event that gives rise to a second potential funding shortfall in the NATO program. I understand that the Air staff has provided your staff with an explanation of the difference between MMOU cost estimates and the contractor's current price proposal."

This section has been revised. (See pp. 20 and 21.)

**AWACS ACQUISITION MANAGEMENT FUNCTIONS  
IN THE NATO AEW&C PROGRAM**



KEY

USG — United States Government  
 OSD — Office of the Secretary of Defense  
 ISA — International Security Affairs  
 USDRE — Undersecretary of Defense for  
 Research and Engineering  
 SAF/ALP — Deputy Assistant Secretary of the  
 AF/Programming and Acquisition  
 PAI — Directorate of International  
 Program Evaluation

FMS — Foreign Military Sales  
 RDP — Director of Development and  
 Acquisition  
 AFSC — AF Systems Command  
 ESD — Electronics Systems Division  
 SNR — Senior NATO Representative  
 BOD — Board of Directors



INTERNATIONAL  
SECURITY AFFAIRS

ASSISTANT SECRETARY OF DEFENSE  
WASHINGTON, D.C. 20304

25 MAR 1980

In reply refer to:  
I-03402/80

Mr. J. Kenneth Fasick  
Director, International Division  
US General Accounting Office  
Room 4804  
411 G Street, NW  
Washington, DC 20548

Dear Mr. Fasick:

This is in response to your request for DoD comments on a draft GAO report entitled, "Equitable Cost Sharing--Is It Being Achieved in the NATO AWACS Program?"

While we do not totally agree with your analyses and conclusions, we take no substantive exception to the information contained in the draft report; indeed, the bulk of this information has already been provided to the Congress by DoD witnesses. See, for example, pp 472-92 of "Hearings Before a Subcommittee of the Committee on Appropriations, US House of Representatives, 95th Congress, 2nd Session, Part 5" and pp 291-92, 466, 1176-78 of "Hearings Before the Committee on Armed Services, US Senate, 96th Congress, 1st Session."

My staff has, I understand, discussed changes to the draft with your staff. I illuminate several major points here for the record that, if incorporated, would add balance and perspective to your report.

- The DoD, of course, does not share your implied major conclusion that the US share is inequitable. The cost sharing formula for this program, like all NATO cost sharing formulae, was negotiated on the equally relevant bases of ability to pay (measured by relative economic strength) and economic benefits received. Thus, for example, the US percentage share of the NATO infrastructure budget is nowhere near our relative economic strength in the Alliance (somewhat over half of the aggregate gross domestic product of infrastructure contributors) because most of the military installations and their attendant economic benefits are in Europe. For NATO AWACS, most of the economic benefits--something over 70 percent of them in the acquisition phase of the program--accrue to the US. Our cost share reflects this fact, although it was adjusted downward considerably during financial negotiations to account for our previous investment in AWACS R&D.

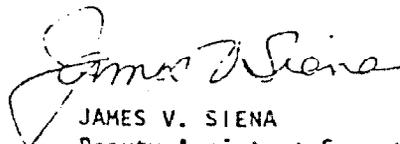
- In several instances, the report cites the fact that a number of other participating governments set a limit to the level of their respective contributions while the US did not. The report then goes on to question whether this state of affairs means that the US will unilaterally increase its cost share to cover real cost growth, but does not logically ask whether the other governments that signed the MMOU without specifying a funding limit will do likewise. We do not anticipate increasing our share unless all other governments do the same, and have so testified to the Congress. It is more likely that the program will be reduced slightly to remain within the funding levels outlined in the MMOU. Indeed, steps along these lines are already being taken.

- The report calculates the US' "real" cost share by noting the cost of services and charges waived for the acquisition effort. Other governments are also waiving otherwise chargeable costs on a reciprocal basis, as called for in the MMOU. Consequently, their real cost shares are also higher than those set out in the MMOU.

- It is true that NIMROD costs are not available to us, but the NIMROD force of 11 aircraft will cost at least the \$500+ million notional value ascribed to it by NATO authorities in the package proposal. The relative US share of the composite program thus is less than 33 percent.

- The discussion of potential funding shortfalls as they are related to the contractor's current price proposal (page 21 of the draft report) is incomplete and therefore misleading. It also incorrectly identifies the impact of Iran's cancellation of its E-3A program as an event that gives rise to a second potential funding shortfall in the NATO program. I understand that the Air Staff has provided your staff with an explanation of the difference between MMOU cost estimates and the contractor's current price proposal.

We have also performed a security review of the draft report as you requested. You are authorized to release the DoD classified information to appropriate Executive agencies and committees and authorized persons in the Congress. [See GAO note.]



JAMES V. SIENA  
Deputy Assistant Secretary  
European and NATO Affairs

GAO note: DOD classified information has been deleted from the report.

(463660)



**AN EQUAL OPPORTUNITY EMPLOYER**

**UNITED STATES  
GENERAL ACCOUNTING OFFICE  
WASHINGTON, D.C. 20548**

**OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE, \$300**

**POSTAGE AND FEES PAID  
U. S. GENERAL ACCOUNTING OFFICE**



**THIRD CLASS**