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Report to the Chairman and Ranking
Minority Member, Subcommittee on
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U.S. Senate

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NATO

Progress Toward More
Mobile and
Deployable Forces



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GAO

Accountability * Integrity * Reliability

Contents

Letter	3
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Appendixes		
	Appendix I: Fieldwork Observations, by Country	24
	Appendix II: Characteristics of Transport and In-flight Refueling Aircraft in NATO Nations' Inventories	30
	Appendix III: Characteristics of Sealift Vessels in NATO Nations' Inventories	32
	Appendix IV: Comments From the Department of Defense	34

Tables		
	Table 1: Increases, Decreases, or No Change in Airlift, Sealift, and In-flight Refueling Capabilities	5
	Table 2: Events in the 2-Year Defense Planning Process and Annual Defense Review	11
	Table 3: Countries' Increases in Transport Aircraft Since 1990	14
	Table 4: Countries That Have Not Increased Their Transport Aircraft and Airlift Capability Since 1990	15
	Table 5: Countries' Inventories of Large Amphibious and Sealift Vessels	16
	Table 6: Countries' Inventories of In-flight Refueling Capability	17
	Table 7: Force Restructuring in Selected Countries	19
	Table 8: Characteristics of Transport Aircraft	30
	Table 9: Tanker Aircraft, by Type and Fuel Offload Capacity	31
	Table 10: Characteristics of Sealift Vessels	32

Figures	Figure 1: NATO Members' Active Duty Forces and Percent of Conscripts	18
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Contents

Abbreviations

DOD	Department of Defense
MNC	Major NATO Commanders
NATO	North Atlantic Treaty Organization
SDR	Strategic Defence Review



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

National Security and
International Affairs Division

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September 30, 1999

The Honorable Ted Stevens
Chairman

The Honorable Daniel K. Inouye
Ranking Minority Member
Subcommittee on Defense
Committee on Appropriations
United States Senate

In 1991, the North Atlantic Treaty Organization (NATO) revised its strategic concept to reflect the reduced threat of a large east-west military confrontation. The concept revision provided for major changes in NATO's integrated military forces, including reductions in size and readiness; improvements in mobility and deployability for contingencies such as crisis management, search and rescue, and peacekeeping; and greater use of multinational formations. Because of instability in and around the Euro-Atlantic area and the possibility of crises at the periphery of the alliance, the strategic concept was revised again in 1999 to further emphasize the need for greater mobility and deployability of forces to meet these potential crises. The United States has the capability to deploy troops and equipment over large distances. Many of our European allies, however, did not see the need for this kind of capability because during the Cold War, they were planning to fight in place with logistical support provided by fixed facilities and their civilian economies.

Concerned about European allies' ability to share in the cost of providing a common defense and specifically whether they are improving mobility and deployability, you asked us to undertake two studies: one to assess how the European Economic and Monetary Union, the enlargement of the European Union, and other factors may affect countries' ability to share in the cost of NATO over the long run and another to address NATO force planning and implementation issues. On June 30, 1999, we reported to you on the first study.¹ This study identifies (1) how NATO determines its force requirements and each member's contribution to meeting those

¹*NATO: Implications of European Integration for Allies' Defense Spending* (GAO/NSIAD-99-185, June 30, 1999).

requirements and (2) how NATO allies have responded to the need for increased mobility and deployability in their military forces.

To address this study, we assessed the forces of 13 NATO members² to determine whether their military forces had become more mobile and deployable. To make this assessment, we consulted with Department of Defense (DOD) officials and other experts and developed 10 indicators: (1) the number of active duty personnel; (2) the percent of the force that is a professional volunteer force rather than a conscripted force, and thus generally more deployable; (3) airlift inventory; (4) sealift inventory; (5) in-flight refueling aircraft inventory; (6) the number of trucks to transport heavy equipment, and petroleum, oil, and lubricants; (7) the number of transport helicopters; (8) the number of satellite communication terminals; (9) the number of mobile airfield communications systems; and (10) changes in types of training. We analyzed data on these indicators obtained from U.S. embassies in 13 countries and did follow-up work in 6 countries³ that represent over 80 percent of the 13 countries' active duty personnel. (App. I summarizes our country-specific findings.)

Results in Brief

NATO establishes its force goals through an iterative 2-year defense planning process that starts with an analysis of the threat and other NATO missions, such as search and rescue; incorporates political and affordability considerations through multiple negotiations with each country; and ends with the members' defense ministers' adoption of force goals. Through this process, NATO commanders and planners identify the forces needed and seek commitments from member countries to develop the forces necessary for the broad range of potential NATO missions. The force planning process differs from the process for generating forces for specific operational missions such as those in Bosnia. Although U.S. and NATO officials believe that the planning process is a fair method for distributing the burden of providing for NATO's common defense, the

²The United Kingdom, Norway, Denmark, the Netherlands, Belgium, Spain, Portugal, Italy, Greece, Turkey, Luxembourg, Germany, and Canada. We did not include Iceland, which does not have a military; France, which does not participate in the NATO defense planning process; or the Czech Republic, Hungary, or Poland, which have only recently joined the alliance.

³The six countries are the United Kingdom, Germany, the Netherlands, Spain, Italy, and Turkey.

process does not quantify the costs associated with what each country is asked to contribute.

As NATO members' forces have become smaller in size and the composition of those forces has changed, NATO allies have become more mobile and deployable as envisioned by the strategic concept. Our analysis of 10 indicators for the 13 countries' military forces indicates that each country has acquired specific equipment to increase mobility, and some have reorganized and restructured forces to make them more deployable. Table 1 shows, for example, whether countries have increased, decreased, or maintained the same airlift, sealift, and in-flight refueling capability. It shows that for these indicators almost all countries have either increased or maintained existing capabilities, which combined with force reductions would indicate greater mobility and deployability of existing forces.

Table 1: Increases, Decreases, or No Change in Airlift, Sealift, and In-flight Refueling Capabilities

Country	Airlift	Sealift	In-flight refueling
Belgium	^a	0	0
Canada	+	-	+
Denmark	0	0	0
Germany	+	+	0
Greece	+	+	0
Italy	+	+	+
Luxembourg	0	Not applicable	0
The Netherlands	+	+	+
Norway	0	0	0
Portugal	0	0	0
Spain	+	+	+
Turkey	+	+	+
United Kingdom	-	+	-

Legend
 + = increase
 - = decrease
 0 = no change

^aBelgium has one less aircraft, but that was offset by the increased capacity of two aircraft purchased to replace two older aircraft.

Source: GAO analysis.

Other indicators we assessed also show general gains in the mobility and deployability of forces. However, the alliance still faces challenges to continue to improve mobility and deployability capabilities. Recognizing that challenges still exist, NATO launched the Defense Capabilities Initiative at the April 1999 summit.

Background

NATO, a military alliance of 19 European and North American countries, receives support from its members in two ways. First, countries, at their own expense, maintain forces and assets that they pledge to NATO through a defense planning process. Second, countries make contributions to NATO's commonly funded budgets. NATO does not quantify the cost of the forces that national governments commit to the alliance, although a country's level of defense spending helps approximate this measure.

In establishing force goals, NATO considers the missions it may be facing in the future. Before the end of the Cold War, NATO's primary mission was to defeat a large-scale invasion by the Soviet Union and its allies with little or no warning. Accordingly, the alliance planned, through its defense planning process, to maintain (1) large numbers of forward-deployed forces, (2) the ability to reinforce Europe by safeguarding the Atlantic sea lanes, and (3) a robust nuclear deterrent. This plan enabled countries like Germany to rely on the civilian sector for support elements such as hospitals and transportation assets. In addition, host nations agreed to support forward-deployed forces from other countries, and those countries and NATO funded the development of substantial infrastructure, including aircraft shelters, prepositioned weapon storage facilities, and fuel storage and distribution networks.

The end of the Cold War transformed the European security environment and made highly unlikely a large-scale attack on Western Europe; nevertheless, potential risks to security from instability or tension remained. In 1991, NATO revised its strategic concept to reflect the changed security environment from the threat of a single, massive global war to risks posed by diverse multinational contingencies. Specifically, the concept called for NATO to move from a large, static force structure to fewer, but more mobile, forces that could react to a wider range of contingencies. In many cases, this required countries to reorganize their militaries, acquire transport assets for mobility and sustainability, acquire deployable communications, and refocus training exercises to enable them to deploy forces outside their countries' borders.

NATO Defense Planning Process

NATO establishes its force goals through an iterative 2-year defense planning process that starts with a threat assessment and mission analysis by NATO military commanders and planners. NATO assumes it may face missions ranging from small search and rescue missions to the largest possible invasion of NATO territory. Based on the force requirements generated from these assessments, NATO commanders and planners seek commitment from member nations to develop the necessary forces. This is done through negotiations among NATO international civilian and military staffs and member countries' military and political representatives. During this process, a range of political and affordability considerations are taken into account to determine what forces each country should have available for NATO to fulfill its missions. This aspect of the defense planning process is completed when NATO defense ministers adopt the force goals.

Although affordability is a consideration when developing members' force goals, the alliance does not actually estimate the cost of the goals, and the process therefore does not necessarily ensure a strictly equitable sharing of the defense burden. Additionally, NATO's force planning process does not ensure that forces will be available for specific operations. When specific operations are approved, NATO embarks on a force generation process to obtain a commitment of forces from its member countries.

Development of Force Goals

The basis of the force goal development process is guidance that NATO members' defense ministers develop biennially and the North Atlantic Council approves at a meeting at the defense ministers level.⁴ The ministerial guidance establishes overall aims for members' planning and force structure during a 6-year planning period. NATO staff draft the guidance, and the defense ministers approve it in the December preceding the first year of the planning process. For example, Ministerial Guidance approved in December 1998 will guide the development of force goals to be approved in the spring of 2000.

⁴The North Atlantic Council comprises permanent representatives of all member countries and has effective political authority and powers of decision in the alliance. The Council also meets with higher level officials such as foreign ministers, defense ministers, and heads of government, but its decisions have the same status and validity, regardless of the level of officials that meet.

The development of NATO force goals is rooted in the defense requirements review conducted by the major NATO commanders (MNC).⁵ The review is developed in even-numbered years, and its output is usually issued in January of odd-numbered years. MNCs develop the review based on NATO strategic intelligence guidance and planning scenarios illustrative of the kinds of operations they could be called upon to execute during the 6-year planning cycle. Through modeling of the scenarios, planners generate a set of force requirements necessary to execute the full range of possible missions. Planners then rely on the ministerial guidance to determine how many situations and the scale of which they need to be prepared for at one time. Through this process, the overall requirements of the alliance are established. The planners then look at the forces each of the allies was asked to provide in the past and determine what each nation should be able to contribute toward meeting the new requirements in the future. Part of the future requirements for each country is based on a concept called reasonable challenge. Under this concept, force requirements are based on what a country could be expected to contribute and additional requirements that represent a fair and reasonable challenge to the country, above and beyond the requirements in its national plans.

The results of this analysis serve as the basis for the MNCs force proposals. The military planners then develop for each member country the force proposals for forces, capabilities, and facilities to be provided to enable the alliance to accomplish the full range of NATO missions during the 6-year planning period.

The draft proposals are then evaluated in a series of meetings with an expanding number of participants whose views and analyses are incorporated through a process of negotiation. When these proposals are first developed, they are shared with the member countries' military planners in "bilateral" meetings between two parties: the MNC planners and the country military representatives. These meetings are held in March of odd-numbered years in the country whose force proposals are being developed. After the military planners incorporate the results of this meeting into revised force proposals, NATO's civilian and military staffs examine the draft force proposals. "Trilateral" meetings are then held among the MNC planners, the country military representatives, and the

⁵Major NATO commands are the Supreme Allied Commander Europe and the Supreme Allied Commander Atlantic. As of September 1, 1999, under NATO's new force structure they will be called Strategic Commanders.

civilian and military staffs. The trilateral meetings are held at NATO headquarters in January of even-numbered years.

Finally, in each of a series of "multilateral" meetings, which include the parties from the trilateral meetings and representatives of all the member countries, one country's force goals are debated. Force goals are assigned to the country under review based on consensus minus one. That is, all the countries except the country being reviewed must agree to the assignment of the force proposal to that country. When that occurs, usually during March and April of even numbered years, the force proposals are forwarded for approval by the defense ministers at NATO's Defense Ministerial meetings in June of even-numbered years. Force goals have four parts:

- Force tables that show the required forces, by specific type of asset or unit, that include readiness and command characteristics such as number and types of ships, aircraft, or units.
- Force goals stated in narrative statements that qualitatively describe the required capability, such as a nuclear, biological, or chemical capability and its priority.
- Long-term requirements that are outside the 6-year planning horizon.
- Military assistance requirements, or unassigned force goals, that countries can volunteer to undertake. (NATO military authorities in practice work to minimize or eliminate these force goals, according to officials from the U.S. Mission to NATO.)

Review of Force Goal Implementation

A country's status in achieving an assigned force goal is reviewed in an annual defense review. A full defense review is conducted in the autumn of even-numbered years. In odd-numbered years, the preceding year's review is updated. The review process is similar to the force goal development process in that a series of meetings are held with an expanding list of participants. The mechanism for this review is the defense planning questionnaire, to which each country is asked to respond by July, on the status of achieving each force goal. Countries can classify the status of a force goal in one of five ways: (1) fully implemented, (2) partially implemented, (3) extended implementation, (4) under consideration, and (5) will not be implemented. For those goals that are not being fully implemented, countries are required to provide an explanation.

MNCs initially assess the questionnaire responses and follow that assessment with trilateral meetings, beginning in September, that include

the country representatives and representatives from NATO's civilian and military staff. Thereafter, all the members review each country's questionnaire response in multilateral meetings in the Defense Review Committee in October. The result of this review is captured for each country in a report that summarizes the status of the country's force goal achievement. In addition, the Military Committee assesses the military suitability and attendant risk associated with any resulting shortfalls in force availability. On the basis of the country chapters and the military assessment, the Defense Review Committee submits to the North Atlantic Council a general report, in which it recommends a NATO 5-year force plan for adoption by the Defense Ministers. Table 2 shows the chronological order of events in the force goal development process and annual defense reviews.

Table 2: Events in the 2-Year Defense Planning Process and Annual Defense Review

Month	Planning process	Annual defense review
December	Ministerial Guidance issued	
January (odd-numbered years)	Defense requirements review report is issued	
March	Major NATO commanders' discuss draft force proposals with nations	Questionnaire is updated and distributed to nations for responses
July		Countries reply to questionnaires
September		Trilateral meetings are held for defense review update
October		Multilateral meetings are held for defense review update
November		Multilateral meetings continue
December		Defense ministers agree and issue update year General Report
January (even-numbered years)	International staff and international military staff jointly screen major NATO commanders' force proposals	
March	Each individual country's representatives meet with all other country representatives present	Questionnaire is updated and issued for full defense review
June	Defense ministers adopt force goals	
July		Countries reply to questionnaires
September		Trilateral meetings are held for full defense review
October		Multilateral meetings are held for full defense review
November		Country chapters and general report are submitted to North Atlantic Council for approval
December	Ministerial Guidance issued	Defense ministers agree and issue General Report

Source: GAO Summary of NATO Documents.

Out-of-Cycle Requirements

The planning process allows for dealing with unforeseen events that occur outside the planning cycle. Out-of-cycle consultation with allies can be conducted when a country is contemplating important changes to commitments and plans that would substantially impact the common defense. Out-of-cycle force goals may also be developed for emerging requirements that should not wait for the next biennial cycle.

Force Planning Differs From Operational Planning

Force planning as conducted in the defense planning process and operational planning for specific operations are quite different. The former requires countries to identify and commit forces to the alliance to meet various missions envisioned in the planning process. On the other hand, in planning for a proposed contingency operation such as that in Kosovo, NATO defines the missions, tasks, and force structure of the NATO force for the specific operation. The forces committed in the defense planning process are not automatically available to the alliance for these proposed operations. Through a separate force generation process, NATO's military headquarters determines the resources required for the specific contingency operation under consideration, and each NATO member decides what resources it will provide to address those requirements. Although all members must agree to NATO's conduct of contingency operations, they are not obligated to provide forces identified or committed for them during the defense planning process.

Alliance Members Have Become More Mobile and Deployable, but NATO Still Faces Challenges

Our analysis indicates that each of the 13 allied countries we studied have achieved greater mobility and deployability either by procuring additional assets or by reorganizing their force structures. While we were able to develop consistent data that compares airlift and sealift assets and personnel (which fall under the first five indicators we used) among the 13 countries, the data on trucks, transport helicopters, communications, and training (which fall under the last five indicators) are less consistent among the countries. Thus, we describe achievements in the latter in terms of the specific country and make no comparisons among countries. Despite the 13 countries' achievements, NATO may be challenged in fulfilling its missions because of the changing nature of the contingencies it is likely to face in the future.

Airlift Inventory

In evaluating countries' airlift capabilities, based on increases in the quantity and capacity of their transport aircraft, we found that NATO allies

as a whole have more lift capability now than they had in 1990, but some countries have achieved more than others.⁶ Seven of the 13 countries for which we collected data increased airlift capability, 4 countries made no change in airlift capability, and 1 country (the United Kingdom) decreased airlift capability.⁷ In one country a change in quantity was offset by a change in capacity, and we concluded that capability had neither increased nor decreased.

Despite NATO's progress, the alliance still depends heavily on the United States for airlift capability. For example, only the United States has the capability to airlift unusually large or heavy weapon systems such as a Patriot missile system. (Tables 3 and 4 show the progress made in acquiring airlift assets by country. App. II contains information about the characteristics of the assets described in the tables.)

⁶We define capacity as the ability to move troops and tons of equipment.

⁷Although the United Kingdom did not increase airlift, its inventory of transport aircraft is among the largest in the alliance. With a traditionally global outlook, the United Kingdom has maintained more mobile and deployable forces than its European counterparts and has focused most of its efforts on restructuring its forces and acquiring major combat capabilities such as attack helicopters and cruise missiles.

Table 3: Countries' Increases in Transport Aircraft Since 1990

Country	Assets	Changes since 1990
Canada	32 CC-130E/Hs, 5 CC-150s (Airbus 310s), 6 CC-115s, 2 CC-142s	Added six C-130s (two C-130H-30s) and five CC-150s; eliminated three Boeing 707s, one CC-132, and eight CC-115s. The CC-150s have greater capacity than the 707s and the CC-132s, and CC-115s are about half the size of C-130s and cannot carry the same types and volume of cargo.
Germany	86 C-160s, 7 A310s, 1 Tu-154 1 707	Added seven Airbus A310 aircraft and added one Tu-154 from the East German inventory, while eliminating one C-160 and 3 707 aircraft for a net gain of four aircraft.
Greece	10 C-130Hs, 5 C-130Bs, 4 C-47s, 1 747, 3 A-300s	Added five C-130Hs, one 747 and three A-300s; eliminated 2 C-130Hs and retired four old C-47 aircraft. The three A-300s are leased by the military.
Italy	11 C-130Hs, 32 G-222s	Added one C-130H and has 18 C-130Js on order.
Netherlands	2 F-50s, 4 F-60s, 2 C-130H-30s	Added all transport aircraft; eliminated 12 older F-27s. The eight new aircraft represent an overall increase in payload and range.
Spain	7 C-130Hs, 34 C-212s, 18 CN-235s	Added 2 C-130Hs and 11 CN-235s.
Turkey	6 C-130Bs 7 C-130Es 19 C-160Ds, 54 CN-235s	Added 6 C-130Bs and 54 CN-235s; eliminated 40 old C-47s and 1 C-160D. This represents a net increase in both cargo and troop transport capacity and results in a significantly modernized transport fleet.

Source: The countries' ministries of defense and the International Institute for Strategic Studies (IISS) *The Military Balance 1998/99*, *The Military Balance 1990/91*, and *Jane's World Air Forces 1997-98*.

Table 4: Countries That Have Not Increased Their Transport Aircraft and Airlift Capability Since 1990

Country	Assets	Changes since 1990
No change in airlift capability		
Denmark	3 C-130Hs	No change in transport aircraft inventory.
Luxembourg	None	None.
Norway	6 C-130Hs	No change in transport aircraft inventory.
Portugal	6 C-130Hs, 18 C-212s	No change in transport aircraft inventory.
Decrease in airlift capability		
United Kingdom	55 C-130s, 3 Tristars	Added one Tristar; eliminated five C-130s. The loss of five C-130s represents a decrease in cargo capacity not completely offset by the addition of the Tristar. However, 25 C-130Js are on order.
Data inconclusive regarding airlift capability		
Belgium	11 C130Hs, 2 A310-200s, 3 HS 748s	Lost one C-130 in an accident and replaced two Boeing 727 aircraft with Airbus A310-200s. The A310-200s are more capable than the 727s in both payload and range, but the loss of the C-130 means a loss in the ability to carry certain types of cargo.

Source: The countries' ministries of defense, IISS *The Military Balance 1998/99*, *The Military Balance 1990/91*, and *Jane's World Air Forces 1997-98*.

Sealift Inventory

In evaluating countries' inventories based on increases in the quantity and capacity of their naval vessels, we found, as with the airlift inventories, that NATO allies as a whole have greater sealift capability now than in 1990 although some countries have achieved more than others. Seven of 12 countries⁸ increased sealift capability, 4 countries made no change in sealift inventories, and one decreased sealift capability. (Table 5 shows the progress made in acquiring sealift assets, by country, and app. III provides information on the characteristics of the assets.)

⁸We did not include Luxembourg in our sealift analysis because it is a landlocked country.

Table 5: Countries' Inventories of Large Amphibious and Sealift Vessels

Country	Assets	Changes since 1990
Increase in sealift capability		
Germany	1 roll-on, roll-off vessel	Added one. A civilian shipping company owns it, but the military has absolute priority in its use.
Greece	10 amphibious vessels	Replaced five old smaller amphibious vessels with two new amphibious vessels; three more are on the way.
Italy	3 amphibious vessels	Added one amphibious vessel.
Netherlands	1 amphibious vessel	Acquired one amphibious vessel.
Spain	5 amphibious vessels	Acquired one new amphibious vessel and two newer amphibious vessels to replace three old amphibious vessels.
Turkey	8 amphibious vessels	This represents an increase of one amphibious vessel.
United Kingdom	8 amphibious vessels and 2 roll-on, roll-off vessels	Added one amphibious vessel. Also added two roll-on, roll-off vessels, which are leased and not equipped to enter war zones.
No change in sealift capability		
Belgium	0	No change.
Denmark	0	No change.
Norway	0	No change.
Portugal	0	No change.
Decrease in sealift capability		
Canada	2 auxiliary vessels	No dedicated sealift assets; reduced auxiliary vessels, which can carry limited amounts of cargo, troops, and equipment, by one.

Sources: The countries' ministries of defense and IISSs, *The Military Balance 1998/99*, *The Military Balance 1990/91*, and *Jane's 1997-1998 Fighting Ships*.

In-flight Refueling Capability

In-flight refueling capability increases the deployability of national forces because it can extend the range of aircraft. Prior to 1990, only three NATO countries other than the United States had in-flight refueling capability; today that number has doubled to six. Turkey, Italy, and the Netherlands have developed in-flight refueling capabilities that they did not possess before 1990. The Netherlands is using its newly acquired capability to participate in air operations in the Balkans. Further, the Netherlands and Belgium have agreed to the joint use of their assets and Luxembourg army assets for peace support operations under the auspices of the United Nations, the Organization for Security and Cooperation in Europe, NATO, or the Western European Union. Through this agreement, Belgium has access to the Netherlands' refueling capabilities, and the Netherlands has

access to Belgium's airlift assets. Table 6 shows the 13 countries' in-flight refueling aircraft capabilities.

Table 6: Countries' Inventories of In-flight Refueling Capability

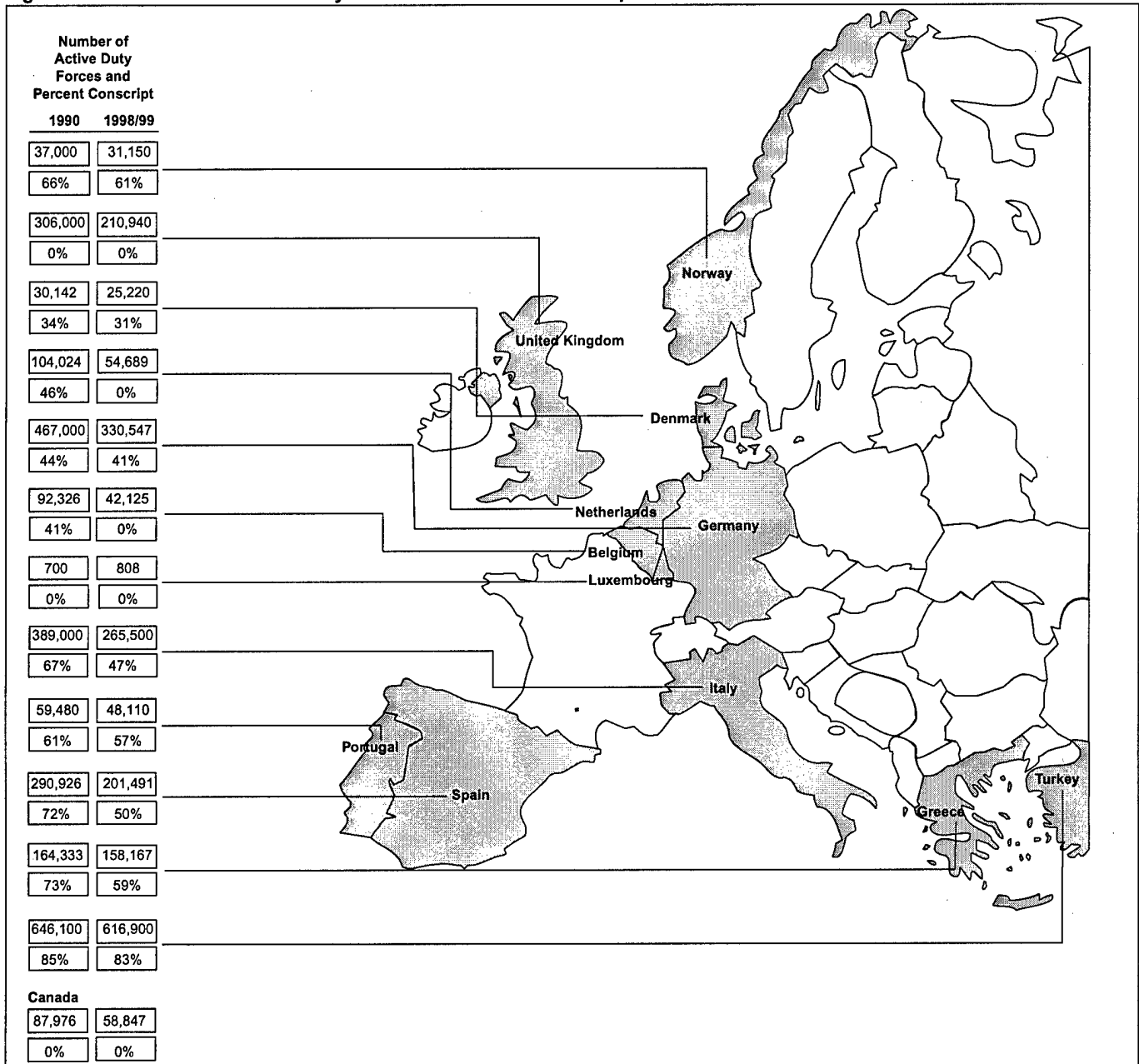
Country	Assets	Changes since 1990
Increase in in-flight refueling capability		
Canada	5 KC-130 tanker/transport	Five KC-130s have replaced two CC-137 tanker/transport
Italy	4 707-320 tanker/transport	All added
Netherlands	2 DC-10 tanker/transport	All added
Spain	5 KC-130s, 4 707 tanker/transport	Added two 707 tanker/transport
Turkey	7 KC-135R	All added
No change in in-flight refueling capability		
Germany	None	No change
Belgium	None	No change
Denmark	None	No change
Greece	None	No change
Luxembourg	None	No change
Norway	None	No change
Portugal	None	No change
Decrease in in-flight refueling capability		
United Kingdom	2 Tristar K-1 tanker/transport, 4 Tristar KC-1 tanker/cargo, 3 VC-10-K-2 tankers, 4 VC-10-K-3 tankers, 12 VC-10C-1/C-1K tanker/ transport	Reduced by two VC-10-K-2 tankers and one VC-10C-1/C-1K tanker/transport

Source: The country ministries of defense, IISS *The Military Balance 1998/99*, *The Military Balance 1990/91*, and *Jane's World Air Forces 1997-98*.

Personnel

In general, the alliance members have made progress in establishing smaller militaries, as envisioned by the strategic concept, and more professional militaries. Professional forces are generally more deployable, as many European countries have legislation limiting the deployability of conscripts. Of the 13 countries from which we collected data, 12 have reduced the total end strengths of their militaries, and 10 have changed the composition of their forces by increasing the proportion of professional forces (see fig. 1).

Figure 1: NATO Members' Active Duty Forces and Percent of Conscripts



Source: Countries' Ministries of Defense.

Force Reorganization and Restructuring

The strategic concept recognized that the changing security environment required different force structures and capabilities. Accordingly, some countries have reorganized their force structures, and others have begun to reorganize their force structures from largely territorial defense forces to force structures that can deploy outside their territory. The forces of all six countries we visited had reorganized. In most cases, countries reorganized because of the changed security environment and financial considerations. Although force restructuring was not in response to any specific NATO force goals, it was consistent with the direction of the new strategic concept and emphasized by officials in the countries we visited. The countries' restructuring is summarized in table 7.

Table 7: Force Restructuring in Selected Countries

Country	Force restructuring
Germany	Developed reaction forces, which do not contain conscripts, for peace support, rescue and evacuation, or relief operations. Forces are maintained in a high state of readiness for rapid response to NATO defense operations. Main force for territorial defense largely comprises conscripts maintained at lower readiness levels than during the Cold War, since Germany assumes it will have 12 months' warning as opposed to 48 hours for any aggression.
Italy	Implementing a new defense model that calls for a reduced but more flexible and readily deployable force capable of undertaking a wider range of operational capabilities. Also participating in more diversified operational scenarios in a more multinational joint context.
Netherlands	Military restructuring, begun in 1991 and expected to conclude in 2000, is intended to increase ability to sustain prolonged crisis management or peacekeeping operations and meet NATO's collective defense requirements. Has eliminated conscription and is now an entirely professional force. Is disbanding three tank battalions, increased the number of combat-ready armored infantry companies from six to nine, plans to increase combat-ready division by 800 personnel, and consolidated medical services into a joint brigade. Each of three partially active mechanized brigades will be capable of deploying one battalion-sized task force for SFOR-type operations. ^a
Spain	Reorganized and has begun to modernize its army. Cut the number of army personnel in half and closed many small bases and detachments. Will also end conscription officially in 2003.
Turkey	Finished restructuring of forces in 1993. Has developed more independent, deployable brigades and leased or purchased tanker aircraft for greater flexibility. New force structure provides for a minimum of one-third of the land forces to be combat ready.
United Kingdom	Defense review envisions a joint rapid reaction force comprising air, ground, and naval assets. Will restructure its army to retain two deployable divisions, one based in Germany and the other in Britain, and will establish an additional mechanized brigade. It also plans to convert airborne brigade to mechanized brigade and reduce front-line naval forces, including destroyers and frigates.

^aSFOR = Stabilization Force, NATO's ongoing operation in Bosnia.

Source: GAO analysis.

**Trucks, Transport
Helicopters,
Communication, and
Training Capabilities**

The data for these indicators were less consistent across countries due to definitional problems, so we have not made any comparisons between or among countries, but rather have noted change in a country between 1990 and the present. Most countries' defense ministries reported little change in inventories of transport helicopters and trucks for heavy equipment and fuel. Notable exceptions are the Netherlands, which added 13 CH-47 Chinook helicopters to its inventory where they previously did not have any, and Denmark, which more than doubled the number of its heavy equipment transports, from 31 to 65.

Many countries have acquired satellite communications terminals and other mobile communication assets; not all countries responded to our queries about this indicator, however. These types of assets are necessary to allow units to deploy from areas where they have preexisting communication links. For example, Luxembourg, Belgium, and Portugal had no mobile satellite communication terminals in 1990, and all have that capability today. Similarly, Norway had no mobile airfield communications capability in 1990 and does today.

Since 1990, NATO members have increased their focus on multinational exercises and on exercises and missions other than countering a large-scale invasion as called for in the 1991 strategic concept. Some countries stated that increased deployments have reduced the frequency of exercises but that out-of-area deployments have provided valuable experience. For example, Spain not only has participated in NATO operations in the Balkans but also has executed other deployments, most recently to Central America, when it sent engineers and supplies in the wake of Hurricane Mitch. Similarly, Belgium has deployed units to Rwanda and the Congo in addition to its NATO activities.

**Despite Progress,
Challenges Remain**

Although alliance members have made progress in increasing mobility and deployability, challenges remain. Recognizing that challenges still exist, NATO launched the Defense Capabilities Initiative at the April 1999 summit to encourage member countries' greater movement toward mobility and deployability of their forces by working together to develop assets that support each other's forces. This represents a shift from the alliance's position that each country is responsible for the sustainability requirements and logistics resources for the forces it contributes. The five areas identified for improvement under this initiative include deployability and mobility of alliance forces; sustainability and logistics; effective

engagement capability; survivability of forces and infrastructure; and command and control and information systems.

Scope and Methodology

To describe how NATO establishes its force requirements and how it identifies what it asks each member to contribute, we obtained and reviewed documents relevant to the defense planning process from U.S. Department of Defense and NATO officials. We interviewed DOD and State officials as well as scholars and defense analysts to obtain their perspective on the process. We also visited the U.S. Mission to NATO in Brussels, Belgium, and conducted in-depth interviews with U.S. Mission officials; NATO international staff and international military staff; and U.S. European Command staff. We also interviewed military officers from Belgium, Germany, and Norway.

To determine how NATO member militaries have become more mobile and deployable since the adoption of the strategic concept in 1991, we identified criteria in the 1991 strategic concept that reflected the force structure attributes the alliance wished to forge (that is, more mobile, flexible, and deployable forces). Using these criteria, we developed tentative indicators that reflect mobility and deployability. We reviewed these draft indicators with the help of expert analysts from the Brookings Institute, the National Defense University, and the Cato Institute; officials from the Office of the Secretary of Defense's Program Analysis and Evaluation Division, the Department of the Navy, and the Joint Chiefs of Staff, Washington, D.C.; the Logistics Management Institute, McLean Virginia; and U.S. and international military and civilian officials at NATO. Based on this review we selected 10 indicators on which to collect data.

We collected data for three points: 1990, the last year before the adoption of the 1991 strategic concept; the most recent available data; and future plans. We then identified six countries for in-depth fieldwork to validate and expand on the information we received and obtained input from those countries' ministries of defense on the status of their forces' movement toward greater mobility and deployability. We selected these countries based on the coverage of NATO they represented in terms of budgets and forces and in terms of variance of progress toward the goals of mobility and deployability. We also solicited input from DOD desk officers for the selected countries, country delegation members at the U.S. Mission to NATO, NATO international staff, and European Command staff. We also collected data from published sources such as Jane's and International Institute for Strategic Studies.

We have not made judgments about what constitutes sufficient progress, whether any particular country has made enough progress in enhancing force mobility and deployability, or whether any particular country can participate in or accomplish a specific mission.

We conducted our review from August 1998 to September 1999 in accordance with generally accepted government auditing standards.

Agency Comments

In written comments on a draft of this report, the Defense Department concurred with our findings. (DOD's comments are reprinted in app. IV). DOD also provided technical comments, which we incorporated where appropriate. In oral comments on this report, the Department of State concurred with our findings.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 15 days from the issuance date. At that time, we will provide copies of this report to other appropriate congressional committees; the Honorable William S. Cohen, Secretary of Defense, and the Honorable Madeleine K. Albright, Secretary of State. We will also provide copies to other interested parties upon request.

If you or your staff have any questions concerning this report, please contact me or Jim Shafer at (202) 512-4128. Key contributors to this report were Muriel Forster, Hynek Kalkus, and Patricia Martin.



Harold J. Johnson, Associate Director
International Relations and Trade Issues

Fieldwork Observations, by Country

National priorities, independent of the North Atlantic Treaty Organization (NATO) requirements, have influenced NATO members' progress in changing their force structures to meet the new security environment. To better understand the changes that these militaries have undergone, quantitatively and qualitatively, we visited six NATO member countries—the United Kingdom, Germany, the Netherlands, Spain, Italy, and Turkey—seeking in-depth information about our indicators and other factors that would pertain to enhanced mobility and deployability of their forces.

The United Kingdom

Historically, the United Kingdom has maintained a global outlook that requires it to maintain more mobile and deployable forces than most of its European counterparts. The United Kingdom has focused on restructuring its forces and procuring weapons such as attack helicopters, cruise missiles, and the Eurofighter, an attack aircraft. The United Kingdom's Strategic Defence Review (SDR) completed in July 1998 recognized a need for more airlift and sealift capabilities and logistics support for their forces.

The United Kingdom has reduced its forces, all of which are professional, by over 30 percent and is restructuring them to form joint rapid reaction forces to be operational in 2001. These forces will consist of two echelons, the first of which will be at a very high state of readiness to provide early entry forces, and the second of which will provide follow-up forces. The first echelon will comprise a maritime task group; air power; land forces, including an armored battle group; a special forces component; and a fully equipped, rapidly deployable headquarters to command the forces. The SDR also calls for a restructuring of the United Kingdom's reserve forces. For example, the United Kingdom recognizes the need for additional medical support in major operations such as the Gulf War but finds it too expensive to maintain in the active force structure and hopes to use reservists for such tasks.

The SDR specifically calls for enhanced strategic lift to enable movement of the joint rapid reaction forces to an overseas theater. In the near term, it calls for the acquisition of four C-17-like aircraft to meet short-term strategic airlift needs in addition to the 25 C-130Js already on order and the addition of four roll-on, roll-off container ships for strategic sealift needs. In the long term, it recognizes the need to replace the rest of the aging transport fleet, possibly with the European Future Large Aircraft. Additionally, the SDR acknowledges the need for additional medical support. According to a United Kingdom Ministry of Defense official, prior

defense cuts resulted in severe shortages in medical support. U.S. officials and other military experts said that the results of the SDR are consistent with NATO's vision for what allied forces should look like and could serve as a model for other countries.

Germany

In 1990, Germany's military found itself in a position unique to any NATO state. Reunification added about 100,000 East German troops to Germany's military, but the treaty enabling reunification mandated that the military be reduced to a maximum of 370,000 troops. Further, Germany had spent the past 40 years preparing to defend its territory from an invasion and did not foresee sending any combat forces outside of Germany. Therefore, it invested less in logistics and support, since it expected to use civilian assets such as hospitals and trucks, and more in combat forces.

In 1994, Germany issued a white paper that detailed its restructuring actions based on the reunification and the need for additional changes to reflect the changed security environment. One key decision was to develop rapid reaction units that would consist entirely of professionals or temporary career volunteers.¹ The rapid reaction units total 53,000 men and include air, naval, and ground units.

German officials believe in the need for and benefits of conscription. For national and NATO defense purposes they want to maintain the ability to mobilize a 680,000-man force. To do this, Germany needs a large number of skilled reservists, which are available through conscription. Germany's ability to significantly increase its forces in case of a major war may contribute to other European allies' abilities to restructure their forces into smaller, professional militaries. At the same time, Germany maintains that its ability to contribute up to 53,000 rapid reaction forces to a NATO or other coalition force is significant. Also, over 50 percent of Germany's regular officers and noncommissioned officers are recruited from its pool of conscripts, and without conscription the overall quality of the military would probably decrease, since entire segments of the population would not consider military service. Finally, Germany does not accept that professionals are necessarily better than conscripts. According to German

¹Temporary career volunteers are conscripts that have volunteered to serve for an additional 2 to 13 months beyond their basic military service of 10 months and can be deployed for duties other than national or NATO defense missions, which is all that is asked of regular conscripts.

officials, units with conscripts have proven themselves in military exercises, military competitions, and peacetime support operations. For example, German units with temporary career volunteers that are in Bosnia have performed as well as units of professional armies, according to the Stabilization Force Commander.

Germany is now undertaking another broad defense review by a blue ribbon panel representing all segments of German society. This review will take at least a year to complete and will cover all aspects of Germany's defense policy. Although the review may lead to more improvements in Germany's ability to react to a crisis, until it is completed, Germany will probably not undergo any major changes in its current policies.

The Netherlands

The Netherlands has made numerous changes in its force structure, but limited defense spending may impact sustainability. Changes to date in the structure illustrate a move toward NATO-desired mobility. In 1991, recognizing it unlikely that its forces would be needed for home defense, the Netherlands began to restructure its forces. As the country determined to act militarily only in partnership with others, its goal was to increase mobility and the ability to integrate with other forces in the alliance. It has reduced its forces by about 50 percent and now has an all-volunteer force, which eliminates restrictions on where they can be deployed. In addition, the Netherlands has changed its force structure to have more rapidly deployable, flexible, and mobile units. However, according to the Clingendale Institute, a Dutch think tank, the force structure changes are still insufficient. According to the Institute, the Army needs additional combat personnel to enable it to sustain its forces in the field for longer lengths of time.

The Netherlands plans to add about 800 additional personnel to its combat-ready infantry companies and engineer and logistics units and is considering consolidating logistic support among the services. The country has increased both its airlift and sealift capability since 1990. Current plans focus on equipment purchases: two amphibious transport ships, Patriot missile upgrades, and Apache helicopters—all high-priced items. However, the Netherlands plans no increases in its defense budget, which at 1.9 percent of the gross domestic product is already under NATO's average of 2.8 percent of the gross domestic product.

According to U.S. embassy officials, the Netherlands has added some courses to its training requests in response to NATO force goals. For

example, Dutch forces will attend civil-military affairs training in the United States, since the Netherlands has been designated a lead country in establishing a civil-military unit.

Spain

Spain joined NATO in 1982 and joined NATO's integrated military structure in 1999. According to U.S. and Spanish officials, Spain recognized in the early 1990s that the integration would require a reorganization and modernization of its armed forces. Since 1990, Spain has reduced its active duty forces by 30 percent and reduced its proportion of conscript forces from 72 percent to 50 percent. During this effort, Spain reorganized its army and cut its force level by half. Conscription will end officially in 2003, but will as a practical matter end sooner.

According to U.S. officials, modernization in the army is less advanced than the reorganization process. Modernization of the C-130 fleet is scheduled to be completed this year. Since 1990 Spain has increased its sealift capacity by acquiring one amphibious vessel. Spain's newest ship is an oiler/supply ship. Spain plans to add another amphibious vessel, which will be configured with command and control capability.

U.S. officials described Spain as having a "small but robust military," but it is not a power projection force. Further, while recognizing the need for greater mobility and deployability and making advances in that direction, Spain believes it will never operate alone, that it will always be part of some multinational coalition or operation. Therefore, Spain will limit the resources it devotes to strategic acquisitions such as lift. However, according to U.S. officials, Spain does much for the alliance, at great domestic political cost, that tends to be overlooked, such as making basing agreements and serving as an air bridge. For example, over the last 4 years, Spain has permitted 50,000 U.S. flights from its bases for various operations and contingencies. It has also contributed to the operations in Bosnia and Albania. Spain contributed about 1,500 troops to both the United Nations Protection Force and the NATO-led Implementation Force. The current commitment for the Stabilization Force is about 1,100 troops, which given rotation requirements represents a commitment of about one-third of Spain's nine-brigade army. Spain also commits one frigate each to NATO's standing naval forces in the Atlantic and the Mediterranean, which represents one-third of its frigates.

Italy

In response to the changed security environment and NATO's strategic concept, Italy has adopted a new defense model and is now implementing it. This model calls for a reduced but more flexible and readily deployable force capable of undertaking a wider range of operational capabilities and participating in more diversified, multinational operational scenarios. Italy has reduced its active duty personnel level by 30 per cent and plans to reduce it another 22 percent by 2005. About 47 percent of the armed forces are conscripts, but Italy hopes to reduce that percentage to 11 per cent by 2005. According to U.S. officials, however, this goal is optimistic.

U.S. officials said that Italy does not have a power projection force and that deploying more than 5,000 troops outside its territory would stretch its lift and sustainability resources. Italy has provided support to the alliance that has been domestically unpopular, such as the use of Aviano Air Base. Italy also has 400 policemen in Bosnia performing civil police duties. According to U.S. officials, Italy took the lead in this initiative, which NATO was unable to persuade any other ally to perform. Since 1993, Italy has maintained 1,800 troops in Bosnia, which in addition to land, navy, and air infrastructure for land and air operations requires a total commitment of about 10,000 personnel, according to Italy's Minister of Defense. In 1997, Italy led a coalition of 7,000 troops from 11 nations in the United Nations-mandated Operation Alba to provide internal peace and restore governmental authority in Albania. Italy provided 3,000 troops and coordinated the operation through its completion in August 1997.

Turkey

Turkey's security challenges differ from other NATO members, and this difference affects its strategic posture. Turkey borders Iran, Iraq, and Syria; has cultural and historical connections to the Balkans and Caucasus; and is near the Middle East and central Asian energy sources. Therefore, Turkey's defense planning is focused more on responding to crises in this region and being reinforced with forces from its allies than on deploying its forces great distances outside its territory. According to U.S. and Turkish officials, this focus is entirely consistent with NATO interests. In addition, Turkey is containing civil unrest in the country's southeast quadrant. For these and other social and economic reasons, Turkey plans to reduce the size of its armed forces and the proportion of conscripts in its forces slowly. Since 1990, Turkey has reduced its active duty forces less than 5 percent and its conscript active duty forces from 85 percent to 83 percent. A Turkish official said that the deployment and disposition of conscripts in the armed

Appendix I
Fieldwork Observations, by Country

forces are not constrained in any way and that conscription therefore does not present the same problems it does for other NATO allies.

As a result of its experience in the Gulf War, Turkey realized that its division-based army had not been easy to move to southeast Turkey, so it has since reorganized to achieve more independent deployable brigades. Turkish forces have participated in numerous operations, including the United Nations Protection Force in Bosnia, with over 1,460 personnel; in Operation Alba with about 700 personnel; and numerous other United Nations missions. Currently, it has about 800 personnel, equivalent to half a brigade, in Bosnia.

Characteristics of Transport and In-flight Refueling Aircraft in NATO Nations' Inventories

The range of transport aircraft varies depending on the loads they carry. In table 8, we show the ranges for the payload listed in parentheses. Payloads are rounded to the nearest half ton for cargo and numbers of passengers or troops if listed that way. Nations may have reconfigured their specific aircraft, which affect these measures.

Table 8: Characteristics of Transport Aircraft

Aircraft	Range in miles	Maximum payload in tons/passengers
707-320	3,625 (40-ton payload)	44.5/219
727-300	2,880 (maximum payload)	20/189
A310	5,523	55 /270
A310-200	4,200 (220 passengers with bags)	36/280
C-130B	2,090	-/92
C-130E	2,420 (maximum payload)	22.5/92
C-130H	2,238 (20-ton load)	25/92
C-130H-30	2,238 (20-ton load)	23/128
CC-150 ^a		
C-160	1,151 (maximum payload)	17.5/91
C-212	519 (maximum payload)	3/25
C-47	2,700	4
CC-115	754 (maximum payload)	9/41
CC-132	1,335 (3-ton payload)	5.5/50
CC-137	4,300 (maximum payload)	45.5/219
CC-142	1,357 (with 50 passengers)	7/50
CL-215	1,301 (2-ton payload)	4/26
Cn-235	950 (maximum payload)	6.5/48
DC-10-30	4,606 (maximum payload)	53/380
F-27	1,150 (5-ton payload)	6.5/45
F-50	2,146 (5.5-ton payload)	6.5/48
F-60	1,208 (7.5-ton payload) or 1,841 (50 troops)	8.5/55
G-222	783 (maximum payload)	10/46
HS 748	1,898 (4-ton load)	8.5/58
Tristar C-2A	5,998 (400 passengers with bags)	48.5/400
Tu-154	2,299 (maximum payload)	20/166
YS-11-200	680 (maximum payload)	7/60

(Table notes on next page)

**Appendix II
Characteristics of Transport and In-flight
Refueling Aircraft in NATO Nations'
Inventories**

*The Canadian designation for an A310.

Source: *Jane's All the World's Aircraft*.

Tanker aircraft in NATO members' inventories are detailed in table 9. We converted their maximum fuel capability into U.S. gallons.

Table 9: Tanker Aircraft, by Type and Fuel Offload Capacity

Aircraft	Maximum fuel offload capability in tons/gallons
707 tanker/transport	61.5/18,917
CC-130T	12/3,600
CC-137 ^a	61.5/18,917
DC-10-30	100/30,760
KC-130	35/10,769
KC-135R	101.5/31,221
Tristar K-1/KC-1	150/46,140
VC-10 K2	81/24,884
VC-10 K3	88/27,130

^aCanadian designation for 707 tanker/transport.

Sources: Various *Jane's All the World's Aircraft* and the *U.S. Naval Institute*.

Characteristics of Sealift Vessels in NATO Nations' Inventories

Sealift vessels are described in table 10 by class, size, and capacity for lift by either square footage or capacity of troops or equipment.

Table 10: Characteristics of Sealift Vessels

Country	Number/class/type	Size in tons	Lift capability in troops/vehicles
Canada ^a	2 Provider replenishment vessels	24,700 full	16,678 square feet
Germany	1 Germania roll-on, roll-off vessel	8,720 full	Not available
Greece ^b	2 Chios LSTs	4,400 full	300/not available
	2 Inouse LSTs	5,800 full	400/18 tanks
	3 Ikaria LSTs	4,080	200/16 tanks
	2 Roussen LSMs	1,095	50/4
	1 Nafkratoussa LSD	9,357 full	200/18
Italy	2 San Giorgio LPDs	7,665 full	400/30-36 armored personnel carriers or 30 medium tanks
	1 San Giusto LPD	7,950 full	400/30-36 armored personnel carriers or 30 medium tanks
Netherlands	1 Rotterdam LPD	12,750 full	611/170 armored personnel carriers or 33 main battle tanks
Spain	2 Castilla LPAs	10,709 light	1,657/not available
	2 Cortes LSTs	4,975 light	374/500 tons of vehicles
	1 Galicia LPD	12,250 full	611 troops or 170 armored personnel carriers or 33 main battle tanks
Turkey	1 Osman Gazi LST	3,773 full	900/15 tanks
	2 Ertugal LSTs	5,800	395/2,220 tons cargo
	2 Sarucabey LSTs	2,600 full	600/11
	1 Cakabey LSM	1,600	400/9 tanks
	2 Bayraktar LSTs	4,080 full	200/16 tanks
United Kingdom	2 Fearless LPDs	12,120 full	400/15 main battle tanks
	4 Sir Belvedere LSLs	5,674 full	340/17 or 18 main battle tanks
	1 Sir Galahad LSL	8,585 full	343/18 main battle tanks
	1 Ocean LPH ^c	20,500 full	Most equipment for a marine commando battalion
	2 Sea Crusader roll-on, roll-off vessels	23,986 gross tons	2,300 lane meters of space

(Table notes on next page)

**Appendix III
Characteristics of Sealift Vessels in NATO
Nations' Inventories**

Legend

LPA = landing platform attack
LPD = landing platform dock
LPH = landing platform helicopter
LSD = landing ship dock
LSL = landing ship logistics
LSM = landing ship medium
LST = landing ship tank

Note: Information was not always available in each category. Vessels in italics are those added to the inventories since 1990.

^aCanada does not have Amphibious or roll on, roll off vessels, but does use its replenishment vessels for sealift. Its lift is measured by available square footage of space.

^bThree additional Chios class vessels are under construction and are all scheduled for commissioning by the end of 1999. They are scheduled to replace older LSTs and LSMs.

^c This vessel is primarily a helicopter carrier but can carry almost an entire marine commando battalion and its equipment.

Source: The country ministries of defense, IISS The Military Balance 1998/99, The Military Balance 1990/91, and Various years of Jane's Fighting Ships.

Comments From the Department of Defense



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24 SEP 1999

Mr. Harold J. Johnson
Associate Director, International Relations
And Trade Issues
National Security and International
Affairs Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Johnson:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report, "NATO: Progress Toward More Mobile and Deployable Forces," dated September 9, 1999 (GAO Code 711374), OSD Case 1889.

The DoD has reviewed the draft report. It is a balanced report that clearly and succinctly lays out the facts to support its conclusion that "the Alliance has become more mobile and deployable as envisioned by the (1991) Strategic Concept."

Suggested technical changes for clarification and accuracy have been provided separately.

The Department appreciates the opportunity to comment on the draft report.

Sincerely,

Franklin D. Kramer



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