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Restructuring NATO Forces--Northern Tier

code 23

ADBO06701

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6 June 1975

Final Report - 6 June 1975

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Prepared in partial fulfillment of graduation requirements for:

U.S. Army Command and General Staff College, Fort Leavenworth, Kansas
66027

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Restructuring NATO Forces--Northern Tier		5. TYPE OF REPORT & PERIOD COVERED Final Report 6 June 1975
7. AUTHOR(s) Michael J. Woodcock, MAJ, FA, Great Britain		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Student(s) at the U.S. Army Command and General Staff College during Academic Year 1974-75		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS U.S. Army Command and General Staff College ATTN: ATSW-DD Fort Leavenworth, Kansas 66027		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 6 June 1975
		13. NUMBER OF PAGES 41 pages
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Distribution limited to U.S. Government agencies only; Proprietary Information; 6 June 1975. Other requests for this document must be referred to U.S. Army Command and General Staff College, Fort Leavenworth, Kansas 66027.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This study was prepared by a student(s) in partial fulfillment of graduation requirements for the U.S. Army Command and General Staff College.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) See Reverse Side		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

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Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

The purpose of the study was to determine the specific measures which should be undertaken to improve NATO with particular emphasis on restructuring NATO forces.

This extensive study argues that NATO forces stationed in Europe are not deployed, organized, equipped and trained as the result of a rational examination of the capabilities of the Warsaw Pact. A candid appraisal of NATO members is offered with particular emphasis on degree of participation, readiness and combat effectiveness of forces and problem areas. Concluding that NATO has enough men and equipment, the study emphasizes the need for improvement in mobilization techniques and organization of reserves, reorganization of the defense, improved system of obstacles, extensive surveying of positions and standardization of tactics and equipment.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

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ADVISOR: Major

"RESTRUCTURING NATO FORCES - NORTHERN TIER"

A Student Research Paper by
Major I.F. Woodcock, RA, (British Army),
for elective course U 990 - NATO Study Effort.
25 April 1975.

RESTRUCTURING NATO FORCES - NORTHERN TIER

INTRODUCTION

NATO forces stationed in Europe are not deployed, organized, equipped and trained as the result of a rational examination of the capabilities of the Warsaw Pact. Rather, they result from national boundaries, national economic strengths and social and military perspectives, from agreements made at the end of World War II and from subsequent national obligations. NATO is an international organization where decisions about national contributions can only be made with the consent of the national government involved. Even decisions made at meetings of Heads of Government require ratification by national parliaments. This point is central to an understanding of the situation because suggestions for improving any particular national contingent are rarely completely applicable to another. The approach taken by the AD 70 study, of identifying overall areas of weakness and asking each nation to take steps to correct them and to report regularly on progress, has proved successful and is a model for further action.

That NATO needs overhaul is undeniable when, despite spending more on armaments than the Warsaw Pact,¹ there is still doubt about its ability to defend the Central Region, or to secure its flanks.

AIM

The aim of this paper is to investigate the present structure of NATO in Northern Europe and to suggest improvements. 5

NATO'S PRESENT STATUS

There are two areas of equal military importance to NATO in Northern Europe. They are the North East Atlantic Region, including Greenland, Iceland, Norway, Denmark and Britain, and the Central Region of Western Germany. Neither can be considered in isolation. The NATO contingents from North America and Northern Europe are divided between these two tasks, though some may be deployed for either. Estimates of NATO's ability to withstand an attack by the Warsaw Pact in the Central Region must consider the possibility and timing of North American and British reinforcements. This would depend on the outcome of the maritime war in the North Eastern Atlantic, which would in turn be dependent on NATO's ability to hold Northern Norway and Denmark in order to bottle up the Soviet Northern and Baltic fleets and to deny airfields on the Atlantic coast to Russian aircraft. The balance of forces shown in the "IISS Military Balance 1973-1974"² which is widely used as a source for comparative judgements, shows all the Soviet forces in Europe, though some of these are targeted for the Atlantic war, while failing to show all the NATO forces, including some which might participate in either region. As "The Military Balance" points out,³ judgements cannot be made by quantities alone, especially when equipments such as tanks and guns vary widely in capability. Tactics, logistics, states of training, readiness and motivation are at least as important but are difficult to measure without the test of recent war. In addition, Russian ability to reinforce is also vulnerable to attack, especially from US air forces based on land and at sea in Southern Europe. The balance is therefore complex

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and difficult for either side to estimate. The organization and principle formations and equipments of NATO forces, extracted from "The Military Balance" are at Annex A. Warsaw Pact forces are shown at Annex B. It can be seen that, given sufficient warning of the Soviet intention to attack, and the political will to mobilize, NATO has adequate military strength, at the present time, to resist invasion. With more time, its greater economic capability and manpower pool could outmatch the Pact. In these circumstances there are two points in time when comparative degrees of mobilization might give the Soviets a sufficient margin to make victory possible. The first is an attack without warning, probably with some preliminary movement covered by a major exercise or using a mock insurgency situation as a deception. This preliminary movement could be detected but correct and speedy evaluation might be difficult. The best signal would be the deployment of SLBM craft. This could be done gradually, but once deployment reached a certain level it would certainly trigger some response. The danger is that NATO politicians might consider mobilization by our own forces as inflammatory and leave the moment of decision until too late. Assuming a correct, early decision a second danger point occurs, at least from the point of view of deterrence, after all the NATO forces in Europe have been deployed and the US forces with stock-piled equipment have been flown in. At this stage the Warsaw Pact has a steady stream of Category 2 and 3 divisions becoming available while there are no similar separate formations and reserves of equipment ready in NATO for up to 90 days. The US could match this to some degree by the rapid mobilization and forward deployment of reserve

aircraft, while there would be between 250,000 and 500,000 European individual reserves in armed battalions (not grouped in divisions) supplementing NATO's defence. Nevertheless, it represents a low point for NATO in its ability to match the Pact. Measures to improve NATO should therefore include ways to increase day to day combat readiness and plans for increasing deterrence by mobilization in a steady flow of formations which can easily be counted.

THE GERMAN MODEL

The West German forces are now being restructured in order to increase combat readiness, to achieve greater integration with more ready reserves, and to release a greater percentage of funds from pay and operating costs to the provision of equipment. Although West Germany is the likely theatre of war in (if it should occur), and the West Germans therefore have a strong motivation to provide for its defence, their model for restructuring has lessons for the rest of NATO. At the present time their 36 brigades are below strength and funds are lacking for re-equipment (though current equipment is excellent). The new organization will have 24 full strength brigades (8 divisions) and 12 cadre brigades (3 divisions and 3 separate brigades). The 24 ready brigades will be 40% regular and 60% conscript. The 12 cadre brigades will be 25% regular and will be responsible for all basic training. To take account of changes in equipment, loss of proficiency with time, and personnel losses, two men are named for each place in the cadre brigades and they are liable

to call out for only three years following conscription, after which they are placed in the territorial reserve. The territorial reserve is itself closely integrated with the regular force. It provides specialist combat units and all kinds of support including the functions of rear area protection, civil affairs, and traffic control and contributes to supply and repair. An improvement in deterrence might be made by forming this reserve into brigades or divisions in order to have its military potential given due weight. West German reserve forces can be called out by the Defence Minister and can all be mobilized within three days.⁵

OTHER NORTHERN EUROPEAN FORCES

All European forces in NATO, except Britain and Luxembourg, have conscription. The German model is therefore appropriate to them. Belgium is already moving along somewhat similar lines. The Government is proposing to reduce the period of conscription but to increase the strength of the regular cadre to about 50%. Other countries are being less constructive. The Netherlands (whose socialist party wishes to withdraw from NATO) propose to reduce the period of conscription and to reduce the overall size of their forces by 20,000 (50% regular). The new measures will leave only 12 combat ready manoeuvre battalions with armoured equipment. Another 12 battalions should be available, though with less equipment, in about three days, while another 6 battalions have cadres and would become available in about one or two weeks.⁶ Denmark has already reduced conscription to 9

months and is halving its ~~land~~⁷ meagre land force. Defence against a Warsaw Pact amphibious assault would depend heavily on the German division in Schleswig-Holstein and the timing of the political decision to mobilize the Danish reservists, local defence units and Home Guard. In Norway the peacetime establishment only contains one brigade group, stationed in the North, with some independent battalions and supporting units, though 11 further brigade sized formations could be mobilized rapidly in war. These are indifferently equipped for armoured warfare on the frozen Northern plain but could hold indefinitely in rugged country, provided they were given air cover and protection from amphibious flank assaults.

The French armed forces are numerous, have good, modern equipment and have a sound scheme for mobilization. Unfortunately, even the Corps deployed forward in Germany is not fully integrated with other NATO forces and has rather different tactical concepts. While other contingents are moving towards a realistic, conventional defence, the French force is unequivocally based around the nuclear firepower of its Pluton missiles.

The British forces are all-volunteer and have volunteer reserves liable for call-out, world-wide, on the Queen's order, but there is no longer a large pool of trained man-power available from conscripted service. The combat readiness of formations in Germany is somewhat reduced at the moment by the loss of combat arm units for short tours of duty in Northern Ireland. Most volunteer reserves and some regular units stationed in the United Kingdom have specific tasks in Rhine Army, but some are assigned for support of the flanks, including the Commando

Brigade (Royal Marines), the Parachute Brigade and snow-equipped elements of the ACE Mobile force. This force is to be reduced and re-organized but will retain snow-trained soldiers and marines for the reinforcement of Norway. The commitment to reinforce the Southern flank is being dropped, but there are to be no reductions in AOR or to the Berlin Infantry Brigade. There will however be a considerable reorganization in which brigade headquarters are to disappear. The overall effect of these reductions will be to free 40% of the budget for the procurement of equipment. It may also have the psychological benefit of concentrating British minds on their priority one task in Europe rather than their traditional task of imperial policing.⁹

NORTH AMERICAN FORCES

Canada's forces in Europe have been concentrated at Lahr and Baden Soellingen. The ground force consists of a small brigade group. One of the three brigade groups in Canada is earmarked for the ACE mobile force, while about half of the Canadian Navy and Air Force is tasked for duty in the North Atlantic. The forward deployed force has proved difficult to maintain politically and does not meet Canada's stated first priority, which is the defence of Canada (and is interpreted as surveillance of the coast-line, including the arctic).

The United States has 4 1/3 divisions deployed in CENTAG with equipment for a further 2 2/3 divisions held in stockpiles. Two more armoured brigades, (with their equipment, but without their dependents), are about to be deployed, within the

present manpower ceiling of 199,000, to replace sundry logistic elements which are being withdrawn. The United States maintains forces outside the Central Region in Turkey, Greece, Italy, Spain, the Azores, the British Isles, Iceland and Greenland. They make the greatest contribution to the maritime and air forces and to the security of the flanks. Much of their air and sea power is not counted in "The Military Balance's" annual review of "The Theatre Balance between NATO and the Warsaw Pact" although it is relevant and can be brought to bear in the area. ¹⁰

NUCLEAR AND TECHNOLOGICAL CONSIDERATIONS

At the present time both Russia and the United States have a sufficient arsenal of thermonuclear weapons to survive a first strike against their delivery systems and to reply with a completely destructive attack against the other's homeland. While the SALT talks may have given Russia an advantage in throw weight the US retains an advantage in numbers of warheads and alternate means of delivery. The testing of the new air launched ICBM ¹¹ and the widespread availability of air refuelling actually extends the US capability well beyond the scope of the systems covered by the agreements. (Although bombers armed with ICBMs are covered by the SALT II talks there is no attempt to define what constitutes a bomber nor a separate agreement about the number of air launched ICBMs which can be made).

In Europe both countries have large quantities of so-called "tactical" nuclear weapons. So far Russian delivery means seem to be restricted to rockets, with a total of about

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7,000 large warheads. US weapons include the Pershing, Sergeant, Honest John and Lance missiles and 203mm and 155mm cannons. There are about 7,000, comparatively small, warheads available. Since 155mm cannons, in particular, are widely used by NATO armies this gives NATO a distinct advantage in the number of potential delivery means available. Both Russia and the USA keep the nuclear warheads under guard by their own national contingents and keep control of release procedures. In NATO, however, both Britain and France are also nuclear powers with SLBMs at sea and with nuclear bombs for their aircraft. France also has the Pluton missile. This must complicate Russian risk calculations because there are circumstances in which one of the European countries might feel compelled to use nuclear weapons, although, in similar circumstances, the US might prefer not to risk escalation.

The theory of deterrence requires a clearly defined escalatory chain from first aggression, through conventional warfare and the exchange of "tactical" nuclear weapons, to the full scale Armageddon of strategic missiles and bombs. It has been held that only by having US troops in sufficient numbers in Europe can this chain be made credible. Yet the Europeans have as much to lose by the "tactical" exchange as the Soviets and US by the "strategic". (The practical difference being the target area). On the other hand the West Germans wish to keep every inch of territory and many believe that the Soviet advance could only be contained by use of nuclear weapons. Another factor which plays on this complex situation is the desire of many US politicians to withdraw from the role of world leader and to remove, or at least reduce, the force deployed in Europe. (Recent events in South East Asia have shown the strength of this lobby). 13

A possible answer to the problem of use of "tactical" nuclear weapons lies in the US development of terminal guidance for missiles and artillery shells. The great advantage of the nuclear warhead is that its enormous explosive effects compensate for inaccuracies in delivery so that destruction of hard targets, such as bridges, tanks and artillery can be assured. One nuclear shell is more effective than many thousands of conventional rounds fired from the same cannon. Thus nuclear weapons also offer savings in nuclear support and cost (in war). On the other hand few believe that their use on land can be contained. It would almost certainly escalate to the "strategic" exchange. Terminally guided weapons compensate for their relative lack of explosive effect with extreme accuracy. Air launched missiles used in Viet Nam proved capable of destroying bridges and moving tanks. The cannon launched guided projectile (CLGP), now under development, has also destroyed moving tanks.¹² A variety of warheads are also being developed for Lance. Its whole range of 113 kms can be exploited by the use of distance measuring equipment (DME), giving it sufficient accuracy to attack tanks with its Redeye type, IR homing, terminally guided, sub-missiles (TGSB).¹³ It can also deliver minelets and cluster bombs. Use of these weapons confers similar logistic advantages to those of nuclears, it avoids collateral damage and carries no risk of escalation. The artillery devices require both the delivery means and the observer and target designator to be surveyed in accurately on the same grid. To cope with moving targets, near instantaneous communications and computer assisted fire direction means are also a necessity. Obviously, obstacles or defences which can make targets slow down, bunch, or halt, increase the probability ¹⁴

of hits with indirect fire. These requirements are much more easily met in defence, where survey can be pre-planned and matched to obstacles, which can be made more effective by cover from direct fire weapons. When these new warheads and target designators have been produced in quantity, and are in the hands of troops trained to use them, a forward defence with fewer men against conventional ground attack seems quite possible. ¹⁴

The air battle is a different problem. Air defence systems, using doppler effect radars, now have the capability to detect aircraft flying in ground clutter and to attack them with guided weapons beyond the range of weapon release for free fall bombs or direct fire guns and rockets. The Soviet Union has radars and missiles effective at all normal heights, backed by excellent rapid firing, radar directed guns and by missile armed interceptors.

On the other hand, the USAAF (and USN and USMC) has had combat experience against most of these systems and has proved its capability to deliver "smart" munitions despite them. ¹⁵ It has certainly developed a strong electronic warfare capability. Furthermore, in a Warsaw Pact invasion of NATO territory, the Pact would wish to mass its air defences in Europe to provide sufficient depth of cover. This would expose its vital rail and waterways to air attack, principally from the South. Even the Soviet Union cannot afford to do both adequately therefore the overall defence is likely to be thin and contain gaps. These can be exploited by NATO aircraft, whose long range, high speed at low level, advanced nav-attack systems and "stand off" armaments make them markedly superior to most Soviet aircraft now in inventory. This advantage is compounded by the greater flying experience of

most NATO pilots.¹⁶

These two aspects come together in the realm of nuclear deterrence. If a conventional defence with fewer men can be credibly established, and if aircraft can penetrate the Soviet air space in sufficient depth to hit vital targets, then the present posture, based on "tactical" nuclear weapons, linked to the strategic deterrent, is no longer necessary. Nuclear armed aircraft targeted on the Soviet Union could be used to deter the Soviet use of nuclear weapons in support of an invasion of Europe. An assured second strike capability would still be needed to deter a pre-emptive, strategic nuclear attack, but this would no longer be linked to the battlefield.

In these circumstances US forward deployed forces would become less vital to the alliance in the Central Region, though still crucial to the defence of the flanks.

COMBAT READINESS AND MOBILIZATION

There has been a rash of papers and articles in recent years on the subject of improving NATO by restructuring.¹⁷ Many of the detailed proposals have, however, been aimed at reform of the US posture rather than the European. Dr Canby's ideas for tailoring the force to meet the specific Soviet threat by improving its short term firepower and mobility at the expense of the capability for sustained combat appear to have influenced most of the other writers. They have considerable merit but do not translate readily to the non-US contingents. The West German forces, for example, actually provide the largest land force

contingent and have already tailored it for the greatest possible tooth to tail ratio by close integration between regular, reserve and territorial reserve elements. In the same way, the British Army has already undergone several "purges" of non-essential manpower and is about to shed all its brigade headquarters and reduce its logistic elements still further in an attempt to give more bite to its forward deployed forces.¹⁸ These forces are integrated with an equal number of volunteer reserves in the United Kingdom.

The smaller European forces of the Netherlands, Denmark, Norway, Luxembourg, and, to some extent, Belgium, have a much more pressing problem than improving efficiency. After 30 years of peace, despite the threat from the Soviet force in being, it is proving increasingly difficult for these countries to maintain even their present meagre military strength. The continued trend is for reduction of the overall size of force and for shorter periods of conscription. The answer to this problem lies in the closer unity of Europe through the European Economic Community, the Western European Union, FINABEL¹⁹ and, in NATO, the EUROGROUP. It may be possible to link fair shares in defence to arrangements already made about trade, the funding of Common Market and NATO central budgets, European regional development and other economic and social agreements. The aim should be to establish minimum standards of size of force and cost in proportion to the size and wealth of each country, and minimum standards for length of conscription, proportion of professional cadre, training, equipment and terms of call out. This is not impossible. The Market has addressed just as

difficult an issue in its common agricultural policy with some success. NATO has managed to maintain its agreement on infrastructure funding, which has provided pipelines, airfields, communications systems and other common facilities. While the significant growth of collaborative projects for the provision of equipment in Europe shows that there is widespread recognition of the fact that Western European states are already mutually interdependent.

In the North, Denmark is within the Common Market and could therefore be approached through it. Norway is not. Neither country has a combat ready force capable of withstanding a sudden attack by the large amphibious, airborne and armoured contingents of the Warsaw Pact which are targeted against them.²⁰ Yet neither permits the troops of other NATO countries to have forward bases to assist in the defence. Both countries could do more. Their defence contributions seen either as a percentage of gross national product or as a sum per capita are amongst the lowest in NATO,²¹ while their policy on forward basing, originally intended to prevent a counter build-up by the Soviets, has long since been invalidated by the growth of Warsaw Pact forces in Poland, East Germany and the Kola Peninsula. Their present weakness is a positive invitation to invasion, while the denial of bases places an undue financial burden for the provision of specialized amphibious and airborne equipment on those countries, like Britain, which have agreed to reinforce them in emergency. The other Scandinavian member of NATO is Iceland. It does permit forward basing but it has no defence forces of its own. Thanks to a large group of Communist representatives in its Parliament it

is a less than enthusiastic member of the alliance. It does not belong to the Common Market or other European institutions and is on bad terms with Britain and West Germany over fishing rights. Its geographical position makes it vital to the defence of Western Europe. Its ports and airfields are essential for the containment of the Soviet surface and underwater fleets, for refuelling, for counter attack against any invasion of the North Cape and for control of the lines of communication between Western Europe and North America.

The Soviets' only ice free port in Europe with access to the oceans is at Murmansk. It has been developed into an enormous military base. "Civilian experts" have now been deployed further West on Svalbad and have established ports and airfields there which could be rapidly occupied by the military. To ensure the junction of the Baltic and North Sea fleets in the North Atlantic the Soviets would need to seize the North Cape, Jutland and, possibly, Iceland. Their exercises, and the growth of their amphibious and airborne forces, indicates that they are preparing for this contingency. With airfields and ports on the North Atlantic coast they would be in a position to isolate the Central Region. To prevent this occurring by open aggression NATO maintains some ready reinforcements. These consist of the ACE mobile force, (some of which also has a commitment to the Southern flank), an amphibious and airborne task force in Britain and, possibly, a US marine division (which also has a Southern flank commitment). The adequacy of this reinforcement would depend on the extent of the Scandinavian resistance to invasion, the air and sea situation and other concurrent tasks. The situation is certainly not good

and is potentially more dangerous than the Central Region. It deserves more attention than it receives, but it is more political than military in nature and the early retirement of Sir Walter Walker has muffled military criticism.²²

The other European forces which need political encouragement to improve are in the Netherlands and, to some degree, in Belgium. Each country is required to produce a Corps for NORTHAG but neither ~~contains~~^{maintains} a full division in combat readiness. The other elements of their Corps are in widely differing degrees of readiness and have older, tactically incompatible equipments and troops with rather varied standards of training and discipline. This leaves a heavy burden on the British and German Corps which stand astride the most likely Soviet invasion route. The suggestion made by Lawrence and Record for the redeployment of the US VII Corps from CENTAG to NORTHAG would improve this situation greatly.²³

The French forces, as stated earlier, are ready and well equipped. It is their concept of the early use of nuclears which is out of alignment with other NATO forces. French troops are not, of course, committed to NATO, nor does France belong to the Nuclear Planning Group. This is a weakness in the alliance which only political action can cure. France has recently signed the new Atlantic Charter and co-operates in most NATO activities, so that the possibility of a return to full participation is not too remote. A French decision to permit the US L of C to return to France would make a real improvement. The present L of C through Bremerhaven is ill-sited and vulnerable.

Amongst the most helpful suggestions for the

Improvement of the US force posture are those put forward by Lawrence and Record.²⁴ The forward deployment of the two armoured brigades mentioned at page 7 above is along the lines they suggest for dual-basing and the rotation of formations on short unaccompanied tours, but it falls far short of the total six divisions they recommend. This force would add significantly to NATO's conventional strength but present political trends seem to favour withdrawal and it seems unlikely to be realized. On the other hand, the "one army" concept, now being fostered, will undoubtedly improve the standard of readiness and training of US Army reserves and the Army National Guard. Unfortunately, the Soviet submarine force in the North Atlantic would be too large in the early stages of a war to risk transporting the scarce armoured equipment of an expeditionary force in equally scarce specialist ships, though men and light equipment could easily be transported in aircraft. Enough heavy equipment to replace losses could probably be moved in C5 aircraft and in small quantities aboard different merchant ships, but this would not achieve the rapid peak required to match the probable rate of Soviet mobilization. Until some other form of transportation is available there are two ways of achieving this. First, more armoured equipment could be stock-piled in Europe. This would be costly and would probably not appeal to Congress. The second would be to fly in large numbers of combat aircraft from CONUS, and possibly from the Pacific. The constraints on this plan are the availability of suitable airfields and the readiness of air reserves. NATO has about 220 airfields suitable for the operation of jet aircraft.²⁵ Some of these are in the Southern Region, but, given aircraft of sufficient performance, their use has the advantage of diluting Soviet air defences.

Many European aircraft (Fiat G91 and those now entering service, like Jaguar, Harrier, Alpha Jet and Hawk) do not not require large runways and would be dispersed to sub-sites in war to avoid a Soviet pre-emptive attack. Therefore, more normal airfields would be available than is apparent. The improvement of airfields and their active and passive defences has had a high priority since the AD 70 study so that this situation is continually improving. This programme should continue and include fuel pipelines and communications to concealed sub-sites. With the introduction of the US A10 aircraft these sub-sites will assume even greater importance.

The readiness and availability of aircraft and pilots appears to be very good. In 1974, 89% of the 147 Air Force Reserve Flying Squadrons in the US were rated as "combat ready"²⁶. The Navy and Marine Corps are claimed to be in equally good shape. It should therefore be quite possible to achieve a very rapid build up of air strength to match Warsaw Pact ground strength.

PREPARATION AND TRAINING

Most NATO forces live on, or are deployed in, the ground on which they would have to fight. Knowledge of the ground and time for the preparation of obstacles should confer great advantages to the defender, especially against an enemy who trains to fight from vehicles and bases his tactical and logistical assumptions on achieving a rapid rate of advance. However, these advantages are only theoretical where troops are not deliberately made to study the ground, where troops within units move too

quickly for the build-up of group expertise and where obstacles remain map studies. Without overstating the case, most NATO contingents are subject to criticism on one or more of these points. Although a case can be made for not preparing actual positions, so as to keep the Soviets in doubt, it must be accepted that they are as well able to make estimates of time and space as we are. From a study of the routes from barracks, a knowledge of deployment time and a survey of possible obstacles, it should be quite possible for them to make a reasonably accurate guess at our likely first positions. It therefore makes little sense not to prepare and mark a complete survey scheme for the whole area, with trig points set up on possible gun and OP positions; not to improve all obstacles over a period of time by hardening and steepening banks, clearing fields of fire, extending forest belts and preparing inundations; and not to harden certain roads and buildings and to install pipelines and communications for the support of aircraft. Obviously, this is not a new idea and it is probable that work has already been done along these lines, but it is incomplete and, if it exists, it is not well known by the troops who would use it, which makes its utility in war rather doubtful. Open work, in great depth, beginning at the border and moving West, would give nothing away and would add both to deterrence and the capability to defend.

The problem of short periods of conscription and short tours at Regimental Duty besets many national contingents. Conscription cannot be solved militarily, but armies could compensate by maintaining a sufficient professional cadre of Officers and NCOs to ensure a reasonable standard of unit

efficiency. This is the method which most European armies are moving towards. Short tours are the particular problem of the US Army. To an outsider this appears to be a hang-over from conscription and the Viet Nam war. It is a self imposed handicap for a volunteer army. The British Army is also a volunteer army and achieves a high degree of stability at unit level through its regimental system. This is often misunderstood in the States. First, soldiers receive their basic training at the appropriate training establishment of their arm or service. They will then go to a unit in which they will usually remain, except for courses and tours of duty at service schools and possibly for attachments to reserve units. Officers follow broadly the same pattern in their early years, except that they will usually attend more and longer courses and may fill junior staff appointments. In later years they may alternate between tours at Regimental Duty and at staff or remain entirely in staff appointments. Units (battalions) move from theatre to theatre, in which they will normally serve ^{for} about five years. During this period they are kept up to strength by individual postings from the training establishments. The system is reasonably flexible and some soldiers and many officers do change units during their service. Its advantage is that it achieves stable, cohesive units with a considerable depth of cross-training. Unit postings not only permit the development of theatre expertise and progressive training at battalion level but also at formation level, so that cross-attachments of combat arms are semi-permanent, allowing them to be cemented by long standing personal relationships. It is a workable model which might be worth adopting.

Group cohesion and realistic training are probably the most important factors in evaluating military strength, given opponents with broadly similar equipment, but since they cannot be counted they are usually omitted from comparative estimates. The cohesion of NATO is downgraded by lack of joint training and by the problems of different languages and differing tactical concepts. In an international organization, whose international staff can only suggest and cajole, not direct, this problem is hard to solve. ~~The first~~ ^{An} area, which does require attention, is that of air support for ground troops. If the full strength of US air power were deployed to the European theatre at the moment, lack of practice, lack of suitable radios and laser designators, and lack of linguists, would diminish its ability to support other national contingents. The equipment and training of allied Forward Air Controllers should be given a high priority. The acceptance (and use) of standard operating procedures would be another major step forward. The existence of differing tactical concepts requires a much more long term approach. Mutual understanding and better liaison could be achieved fairly cheaply by increasing exchanges between the Officers and NCOs of national contingents and by the establishment of more combined schools.

STANDARDIZATION AND SPECIALIZATION

NATO's failure to achieve the same degree of standardization as the Warsaw Pact has been considered in another ²⁷ paper. The root of the problem, once again, is NATO's international character and the difference between national interests,

size, economic strength, military traditions and other commitments. The key to progress is through greater mutual understanding and the drawing together of interests. The extended exchange programme and combined training is vital if real progress is to be made militarily.

When NATO was first formed it was hoped to avoid this problem to some degree by national specialization. This failed, because, at that time, it was felt that there was still a need to maintain Western national contingents in Germany as much for the prevention of a Nazi revival as for the deterrence of the Soviets: because the Soviets could not accept nuclear weapons in German hands; because nations were not prepared to give up their air forces or navies; and because nations did not feel that the alliance was a firm enough structure to surrender to it that degree of sovereignty. Similar objections apply today.

US land forces are required in Western Germany to establish the deterrent chain and to re-assure the Europeans of US determination to maintain the alliance. Specialization in the air and sea roles would certainly save money and simplify national tasks, but it would sharpen European fears of a unilateral US withdrawal and would be unacceptable to them. Specialization amongst European forces also has its problems. European unity has not yet reached the point where any nation would feel secure if the defence of its borders, coastline or air space was entirely in the hands of others. This prohibits nations from concentrating on a single role.

One nation which might contribute more by specialization is Canada. Its present contribution is in CENTAG, where it^{is} useful, but not vital. It might be better if this force were 26

withdrawn entirely in return for a commitment to train and equip a division sized force, with air and sea support, for the emergency reinforcement of Iceland. This would be compatible with Canada's first defence priority of defence of Canada and would help to address NATO's weakness in the North Atlantic.

EQUIPMENT

Most reviews of the "balance in the Central Region" give great weight to the numerical superiority of the Warsaw Pact in tanks, artillery pieces and combat aircraft.²⁸ This is rather special pleading, in fact, because there are compensating factors. Apart from qualitative deficiencies in Soviet aircraft and their avionics, armament, ground environment and pilots (which would rapidly diminish their capability and sortie rate), the US actually has a larger inventory, world-wide, than the Soviet Union and could gain a quantitative advantage.²⁹ In the comparison of artillery, NATO has an entirely different approach from the Warsaw Pact. Whereas most Pact weapons are towed, most NATO weapons are on self-propelled tracked chassis. Most have 360° rotating turrets which give excellent protection to the crew and permit the rapid engagement of widely dispersed targets. The ability of the guns to move rapidly is supported by organic survey parties with instruments for fixing positions accurately by day and night. Computers are widely used to assist in survey programmes and for fire direction. This allows fire to be massed rapidly and used in complicated but accurately applied sequences. As a natural support to this capability, NATO units hold consid-

erably more ammunition than Pact units and have more organic (and dedicated) transport for resupply. (~~Fact~~ ^{Despite} Stephen Canby's arguments actual experience has shown this to be more efficient than shared transport at a higher echelon). CLGP will fit exactly into this framework and will add much needed depth to the anti-armour defence. Both Canby and Cliffe ³⁰ are attracted by the merits of Soviet multiple rocket launchers and advocate their use by NATO. In fact they are used by West Germany and France and certainly provide a means for saturating an area with high explosive. Unfortunately they are inaccurate, especially in range. While they may be used for shock effect, to frighten, and disrupt, they are unsuitable for the precise engagement of targets. Tube artillery is accurate, can be massed and used at burst fire to achieve a similar degree of saturation and, with the improved warheads now being produced, has the ability to destroy armoured, as well as unarmoured, targets. ³¹

The Soviets do have an indisputable advantage in numbers of tanks, but even this is not all that it seems to be. Recent tank battles in India and the Middle East have shown that the NATO 105mm tank gun is more than a match for the Soviet 115mm smoothbore in the hands of trained men. The greater depression of NATO tank guns gives NATO tanks better ground protection in tank versus tank engagements. Because they will be mainly used in defence, NATO tanks can engage from concealed, defiladed positions and can expect to gain favourable exchange ratios. Furthermore, tanks are vulnerable in many situations without the support of dismounted infantry, and Soviet organizations are weak in this arm. Tanks still have difficulty in crossing obstacles

and are vulnerable to mines. Modern, portable, anti-tank weapons such as Dragon and Milan give dismounted, defending infantry a reliable means of killing tanks at ranges of up to 2,000 metres while weapons such as Tow and Swingfire can kill at nearly 4,000 metres. (These weapons are all much more sophisticated and capable than the Soviet Sagers which defeated the unsupported tank counter attacks of the Israelis at the beginning of the October 1973 war on the canal). Tanks are also vulnerable to attacks from armed helicopters, especially after penetrating the FEBA. They can also be successfully destroyed by aircraft using homing weapons or even cannon and bombs. (NATO tanks share most of these vulnerabilities but, because they would mainly be used in defence, need not expose themselves so much as the aggressors'. The open air flank is being closed by the deployment of new radar directed gun and missile systems for the defence of combat units).

It can be seen therefore that numbers alone are a poor guide to actual capability. In the ground battle, the main problem is to offset the imbalance in tanks. This is already being addressed by the introduction of increased quantities of anti-tank missiles, some under-armor. To achieve the early deterrent peak, and, in the case of the US, to solve the problem of transporting heavy equipment, it would be worth considering the formation of reserve anti-tank units, specially trained in armoured fighting vehicle (AFV) recognition and use of the particular missile systems. These could be attached to formations and would give them a significant and quantifiable increase in their anti-tank capability. The same considerations apply to

shoulder launched anti-aircraft missiles (especially Blowpipe, with its forward hitting and light anti-armour capability). Reserve units could specialize in aircraft recognition and use of the systems to shorten and simplify training and could add considerably to formation defences in emergency. The advantage of this idea is cost. First the cost exchange ratio of several missiles for one tank or aircraft is strongly in favour of the missiles. At some stage it would become an uneconomic proposition to build enough tanks to have a chance of overcoming a much cheaper defence. This would apply to a lesser degree to aircraft used for ground attack. The second cost advantage over solutions using regular forces is that reserve forces are cheaper to maintain, and by simplifying and specializing their training they could be just as effective in this role. These troops would, however, be in addition to those already deployed in full time units, because missiles alone cannot provide an adequate defence. It is the mix of armour, infantry, artillery, engineers, signallers, airmen and logistic troops which provide this. The missile troops would provide added strength at just the time when it would have the most deterrent effect and would be most needed practically.

CONCLUSION

NATO has enough men and equipment to defeat an invasion of the Central Region by the Warsaw Pact forces provided it has the political will to mobilize in time. The possible need for "tactical" nuclear weapons will fade as the strength of anti-armour defences increases, firstly with the introduction of more direct-fire missiles and secondly, when

the terminally guided, indirect-fire munitions are issued. The effectiveness of these weapons could be enhanced by a programme of work to improve natural obstacles and to provide a close network of fully surveyed positions. These preparations could in turn be supported by giving units more stability and time to train, learn the ground and gain cohesion.

The two critical points for NATO, in the event of mobilization by the Warsaw Pact, are at the earliest warning and after approximately two weeks of build up. Rapid additions to NATO's crust could come from the forward deployment of US aircraft (which calls for more preparation of airfields and sub-sites) and from ready-reserve units of anti-tank and anti-aircraft specialists. This plan avoids the difficulties inherent in moving heavy equipment. Greater deterrence in the latter phase could come from grouping NATO's many trained reservists in distinct, division-sized formations, which could be counted and assessed more easily than the present, rather amorphous, organizations.

NATO has not yet reached the stage of interdependence where national specialization is a possibility. Improvements in standardizing tactics and procedures need to be made by increasing exchanges, combined schools and by language training.

Finally, although the Central Region can probably be secured, the Atlantic Region is weaker and too dependent on warning time. The solution to this is political and requires urgent attention.

NOTES

1. Figures quoted by the US Arms Control and Disarmament Agency on 26th January 1975 for the decade 1963 to 1973 showed that NATO spent \$110,420 million on armaments, while the Warsaw Pact spent \$94,310 million. Reported in "The Times", London, on 27th January 1975
2. "The Military Balance, 1973-1974", published by the International Institute for Strategic Studies, 18, Adam Street, London WC2 6AL in September 1973. See Appendix 1, Pages 87 to 92.
3. Ibid, Page 87.
4. See John Erickson's article "Soviet Military Capabilities in Europe" in the March 1975 edition of the RUSI Journal, Pages 65 to 69. He argues that Soviet military doctrine regards the ability to make a pre-emptive attack against NATO ("getting in and under") as essential. In this respect the current build up in the forward deployed formations is worrying. "The basic framework has been retained (that is, there seems to be no expansion of the nominal order of battle), but existing forces are being "filled out" with extra equipments and weapons, as well as being supported by material stored close to the frontier lines and available to reservists who can be flown in. Already about one third of the complement of GSEF is rotated annually by air transport, where Aeroflot can supply up to 200 medium range transports. In the tactical air forces existing regiments have again been "filled out" with up to 25% more aircraft, while the hardening of aircraft

shelters is almost complete. Soviet artillery (which already outnumbered NATO holdings by 3:1) has been similarly increased, while further mobility has been added with amphibious reconnaissance vehicles, improved APCs and modern, self-propelled guns! '(The D-30 122mm howitzer, mounted on a tank chassis, is coming into service with Soviet motor rifle divisions)'. The first echelon now consists of "some 8,700 tanks, over 100 motor rifle battalions all within the compass of the 16 tank and 15 motor rifle divisions in East-Central Europe".

Clearly the Soviets have increased their ability to surprise NATO and to avoid early interdiction. This makes it more important for NATO to maintain a sufficient force in permanent readiness and to achieve rapid reinforcement. This argument is developed later in the paper.

5. "Survival", Jan/Feb 1973, Page 1. Published by the International Institute for Strategic Studies, 18, Adam Street, London WC2 6AL.
6. "Survival", Jan/Feb, 1975, Page 2.
7. "The Military Balance, 1973-1974", Page 19.
8. Ibid, Page 24.
9. The British Defence White Paper published by HMSO on 13 March 1975
10. "The Military Balance 1974-1975"; Pages 95 to 102.
11. "The Americana Annual 1975" (Yearbook of the Encyclopaedia

- Americana), published by Groelie" Inc, 1975, page 366.
12. "International Defense Review" Vol 8, No 1/Feb 1975, Page 113, published by Interavia, Geneva.
 13. "International Defense Review" Vol 7, No 1/Feb 1974, Page 105.
 14. See Adelphi Paper No 109 "The Alliance and Europe: Part IV, Military Doctrine and Technology" by Dr Stephen Canby, Pages 31 and 32 for a useful unclassified source for details of "stand-off" technology.
 15. Ibid, See footnote on Page 30 for comment on the cost/effectiveness of "smart" bombs, especially their use in making attacking aircraft less vulnerable to ground-based air defences.
 16. Alain c. Enthoven and Wayne F. Smith in "How much is Enough? Shaping the Defense Program, 1961-1969" (Published by Harper and Row, N.Y., 1971) calculated that NATO aircraft have a 200% margin of superiority, on average, over Pact aircraft. Now Soviet aircraft such as the MIG 23 and 25 and SU 19 have eroded the airframe superiority but improvements in NATO avionics and armaments may have actually increased the gap.
 17. The seminal paper appears to be Dr Stephen L. Canby's RAND study of June 1973, entitled "NATO Military Policy: Obtaining Conventional Comparability with the Warsaw Pact". His Adelphi Paper 109 expands this same theme. His work is quoted by Colonel Richard Lawrence and Jeffrey Record in their Brookings Institution

staff paper of 1974 entitled "US Force Structure in NATO.- An Alternative" and by Brigadier Kenneth Hunt in Adelphi Paper 98, "The Alliance and Europe: Defence with Fewer Men". He has also influenced Mr R. Komer, who has written a number of articles on improving NATO by reducing its logistic elements, tailoring the combat elements to meet the specific threat posed by the Pact and increasing standardization. Amongst these is "Treating NATO's Self-Inflicted Wound" published in "Foreign Affairs", No 13, Winter 1973/74. Another interesting study is in Adelphi Paper 89, "Military Technology and the European Balance" by Trevor Cliffe.

18. British Defence White Paper, 1975, Pages 16,17, 24 and 114.

19. FINABEL is a group containing France, Italy, the Netherlands, West Germany and the United Kingdom, which aims at increasing co-operation in military doctrine and equipment procurement.

20. See RUSI Journal of September 1973, Pages 21 to 30, for a gloomy view of Scandinavian defence by the former C-in-C of AFNORTH, General Sir Walter Walker, in an article entitled "The Defence of the Northern Flank".

21. British Defence White Paper, 1975, Page 3.

22. See Note 20 above. Despite a considerable success in the handling of confrontation with Indonesia in Borneo, which seemed to assure General Sir Walter Walker a longer and even more illustrious career, he was retired after serving as C-in-C of AFNORTH. This was thought to have been a direct result of his

persistent criticisms of Scandinavian unreadiness.

23. See Note 17 and "US Force Structure in Europe - An Alternative" Pages 70 to 76.

24. Ibid.

25 "NATO Facts and Figures", published by the NATO Information Service, Brussels, October 1971, Page 143.

26. RUSI Journal, March 1975, Pages 48 to 55. "The Transformation of US Mobilization Policies: Implications for NATO" by Abbot A. Brayton and especially Page 51.

27. "NATO Standardization" by Major M.J. Woodcock, RA. (To be published in the "Military Review" later this year.

28. See, for example, the British Defence White Paper, 1975, Pages 5 :

29. See "The Military Balance 1974-1975", Page 100, and also Stockholm International Peace Research Institute (SIPRI) Yearbook 1974, published by the MIT Press, 1974, at Page 51. Neither of these sources states the full extent of Western holdings because they omit some aircraft held by reserves and aircraft of good performance currently used for training.

30. In Adelphi Papers 109 and 89 for example.

31. See "International Defense Review", Vol 7, No 4/August 1974,

Page 475 in an article entitled "RAF Strike Command" by Derek Wood, for a description of the much improved Soviet aircraft now being introduced into East Germany, including MIG 25 Foxbat, SU 19 Fencer and the supersonic bomber, Backfire. Also see RUSI Journal, March 1975, Pages 65 to 69 in John Erickson's article, "Soviet Military Capabilities in Europe", for details on the deployment of these aircraft, plus MIG 23 Flogger and SU 20 Fitter B. This article also deals with the build up of army equipment, including the self-propelled version of the 122mm D-30 howitzer, which is being introduced into Soviet motor rifle divisions. It is possible that this is intended for primary use in the anti-tank/assault gun role, as it was used by the Egyptians in October 1973, rather than to replace current towed pieces.

Although there is no doubt that the Soviets are making qualitative improvements, at the present time, the advantages in capability of NATO equipments listed in this paragraph still hold true.

10 FORCES

ARMIES

ANNEX A

NUMBER AT - TIME DUTY	ARMOR DIV	MCH DIV	INF DIV	ASH DIV	MACHINE DIV	MOUNTAIN DIV	AIRMOBILE DIV	PARA MILITARY	RESERVES	REMARKS
1,500	3	4	3 1/3	1			2		621,900	
2,000 * MARINES					3				39,100*	Includes Air Element
3,000		1/3	1	1/3					19,000	
5,300	3*		1 1/3	1/3	1/3 +				55,300	* Each has 8 manœuvre Bns.
8,000 MARINES										
12,400*		5		1		2/3		85,000	450,000	* Includes 116,400 volunteers * Includes 150,400 volunteers
14,000*	5	4	1	1		1		20,000	510,000*	+ On immediate recall
15,400	1/3	1	1/3	1/3				15,000	8,000	* To be cut to 12 months
16,000	2/3	1 1/3			1/3 -			3,200	300,000 +	+ 40,000 on immediate recall
2,800 MARINES									80,000	* To be cut to 4,000 with 50% Volunteers
4,000*		1/3								
550			1/8					350		
8,000			1/3						135,000*	* Formed in 11 Bdes with supporting elements.
06,500	2 1/3		6 1/3	1/3	1/3	1 2/3		80,700	450,000	
65,000	2 1/3	3	12	1/3				75,000	750,000	
20,000	1		3 + 11*	1/3				99,000	160,000	* Cadre division
										OMITTED
										NO TROOPS

NOTE. There are 23 Combat ready divisions in Northern Europe at all times.
This could be increased by approximately 10 divisions in 7 days.

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NAIR FORCES

AIR FORCE S

ANNEX A

	BOMBING FORCE		INTERCEPT	RECCE	STRIKE	OTHER TACTICAL AIRCRAFT	TRANSPORT	MARITIME (PATROL & ASW)	HELICOPTERS
	LONG RANGE	MED TANKERS							
STRATEGIC	437	66	585	20		40			
STRATEGIC RESERVE		8							
COMBAT				234	1728	612	679		
COMBAT RESERVE					168	32	352		50
TERRITORIAL GUARD			90	56	500	100	168		
				120	1050		400	440	60
NAVY RESERVE				30	180	30	40	150	60
AIR CORPS				20	156				20
RESERVE			15	10	50	10			20
NAVY						1,000			10,000
			24	80	254	200	110	50	235
		65		45	338		180		50
				60	408		40	12	200
				18	108	30	12	44	100
				20	105		30		10
				20	60				
					30				
				16	16		50	50	40
				72	135		10	5	40
				40	40		90	26	200
				36	160	40	44		25
				40	110		57	12	30
		OMITTED							
	437	139	920	901	5556	2094*	2262	819	11,140

Notes: "The Military Balance 1973-1974 and 1974-1975", "The Stockholm International Peace Research Institute Yearbook 1974" and "International Defence Review" August 1974.

The "Other Tactical Aircraft" column includes some training and communication aircraft, but not all.

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ANNEX A

NAVIES

NATO FORCES

OCEAN	NATION	SUBMARINES			CRUISER	AMPH	LPH	CARRIER	DESTROYER ESCORT	CONVAYERS	MINE SWEEPERS	AIRCRAFT			
		NUCLEAR	DIESEL	NUCLEAR DIESEL								STOLE	PROGOL	ASW	
															SSBN
ATLANTIC	USA	27		30	2	4	3	22*	2	63	10*	500	110	40	44
	CANADA				2					11			30		6
	BRITAIN	4		8	22	1	2	20*	2	71	45	240	45	90	160
	FRANCE	3									30				
	NETHERLANDS				6				24	6	45		44		24
	NORWAY				15			9	7	40	15				
BELGIUM										30				5	
BALTIC	N. GERMANY				8			24	17	50	61	72	12		23
	DENMARK				6				10	21	18				8
MEDITERRANEAN	USA	2		9		2	1	5	1	17	5	120		20	20
	FRANCE				19	2	1	24	2	42	31	40	50	30	30
	ITALY				9			22	3	26	61		26		54
	GREECE				7			22		13	16				
	TURKEY				15			*		22	25				3
PACIFIC	USA	12		24	10	8	3	31	3	74	2	750	125		80
	CANADA				2					10			20		6
TOTAL		48		71	123	17	10	179*	13	407	203	1722	462	180	463

- Sources are "All Hands", March 1975, The Magazine of the US Navy; The Military Balance 1973-1974 and 1974-1975; The RUSI and Brassey's Journal 1974 and "International Defense Review" August 1974.
- There are considerable difficulties in recording correct totals because of problems with classifying types of ship and because small ships are listed for some countries but not, for instance, for the USA. Columns marked thus * show that numerous small craft exist but have been omitted.
- This list does not include US Navy and Marine Corps reserves or underway replenishment ships. The aircraft column include land based aircraft, in some cases, and are not additional to those shown in the Air Force tabular.

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NATO FORCES

STRATEGIC MISSILE & MISCELLANEOUS

ANNEX A

ICBMs: 32 SSBN, each with 16 Polaris (10-14 MIRV)
 19 SSBN, each with 16 Polaris A3 (3 MIRV)
 or 876 SSBNs with approximately 2700 warheads.

24 Minuteman 1
 450 Minuteman 2
 54 Titan 2
 529 Minuteman 3 (3 MIRV)
 or 1054 ICBMs with 2112 warheads

Total Regular Forces

Army	2,520,000
Navy	1,002,400
Air Force	1,142,100
Tanks	10,570
Combat Air	3,500*

* But this does not include
 some trainers and reserve
 aircraft which actually have
 a better performance than some
 of the aircraft included
 for the Warsaw Pact.

ABMs
 70 Spartan
 70 Sprint

BRITAIN: 4 SSBN, each with 16 Polaris A3 (3 MIRV)
 or 64 SSBNs with 192 warheads

FRANCE: 3 SSBN, each with 16 SSBN M-1 missiles.
 or 48 SSBNs

18 SSBN S-2 IRBM

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NATO FORCES

STRATEGIC MISSILE & MISCELLANEOUS

ANNEX A

ICBMs: 32 SSBN, each with 16 Polaris (10-14 MIRV)
19 SSBN, each with 16 Polaris A3 (3 MIRV)
or 300 SLBMs with approximately 5000 warheads.

24 Minuteman 1
450 Minuteman 2
51 Titan 2

529 Minuteman 3 (3 MIRV)

or 1054 ICBMs with 2112 warheads

ABMs
30 Spartan
70 Sprint

BRITAIN: 4 SSBN, each with 16 Polaris A3 (3 MIRV)
or 64 SLBMs with 192 warheads

FRANCE: 3 SSBN, each with 16 USBS M-1 missiles.
or 40 SLBMs

16 SSBS S-2 ICBM

Total Regular Forces
Army 2,520,000
Navy 602,400
Marines 2,500
Air Force 1,142,100
Tanks 10,370
Combat Air 3,500*

* But this does not include
some trainers and reserve
aircraft which actually have
a better performance than some
of the aircraft included
for the Warsaw Pact.

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ANNEX B

ARMIES

(By Divisions)

LOCATION	TANK			MOTOR RIFLE			AIRBORNE	AMPHIBIOUS
	1	2	3	1	2	3		
East Germany	USSR							
	DDR	10		10				
Poland	USSR	2			2			
	Polish	2	2		4	4	1	
	USSR	2			3			
Czechoslovakia	USSR	2	2	3	2	3		
	Czechoslovak							
Hungary	USSR	2			2			
	Hungary		1		2	3		
Rumania	Rumanian		1	1	4	4	1/3	2/3
	Bulgarian		2/3	1	4	4		
European Russia	USSR	5	15	2	12	19	5	
	USSR			2	2	4		
Southern Russia	USSR		3		8	10		
	USSR	4	4	16	7	11		
TOTALS		29	28 2/3	9	55	47	9 1/3	1 Annex 2/

In addition the USSR has 130,000 KGB border guards and 130,000 MVD troops for internal security.
 Total Warsaw Pact combat and direct support troops in the whole European theatre is 1,220,000.
 Total numbers of tanks, including stockpiles in Southern Region, is 28,100.

WARSAW FACT FORCES AIR FORCES

ANNEX B

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TASK	LOCATION	NATION	BOMBING FORCE			INTERCEPT	RECCE	STRIKE	TRANSPORT	HELPS	
			MED	LONG	TANKS						
STRATEGIC	FAR EAST	USSR	200	40	15						
	EUROPE	USSR	500	100	55						
AIR	FAR EAST	USSR				650	2 ABZ				
DEFENCE	EUROPE	USSR				200	0 ABZ				
TACTICAL	FAR EAST	USSR				250	150	600			
AIRCRAFT	EUROPE	USSR				1,000	350	2,000			
		DDR				294		40			
		POLAND				152	72	270			
		CZECH				252	30	168			
		HUNGARY				72		36			
		RUMANIA				200	10	80			
		BULGARIA				149	47	72			
	TRANSPORT	FAR EAST	USSR						500	600	
	AIRCRAFT	EUROPE	USSR						1200	1900	
			DDR						34	85	
		POLAND						35	140		
		CZECH						40	180		
TOTALS		HUNGARY/RUMANIA/BULGARIA.	700	140	50	5598	719	3276	1892	2678	

WARSAW PACT FORCES

NAVIES

ANNEX B

FLEET	NATION	SUBMARINES						LPH	Amph	Csr	Dest	Coast	Mine	AIRCRAFT	
		SS		Nuc		SS	Strike							AEM	
		SSEN	SSB	D	B										
NORTHERN	USSR	22	12	15	10	15	96	1	50	4	40	77	50	150	20
BALTIC	USSR						53		30	7	45	160	100	30	10
	DDR								13		2	122	27		
	POLAND					5			15		1	100	20	10	10
BLACK SEA	USSR			10	10		6	1	60	5	54	160	100		
	BULGARIA						2		20		2	48	20		
	RUMANIA														
PACIFIC	USSR	22	10	5					22		15	50	15		
TOTALS		44	22	30	30	55	197	2	307	26	192	770	225	445	40

1. Nuclear submarine carrying ballistic missile (nuclear)
2. Diesel
3. Nuclear submarine carrying cruise missiles
4. Diesel
5. Nuclear attack submarine
6. Diesel attack submarine
7. "Boatman" class
8. Includes small landing craft
9. Cruise
10. Destroyer and ocean going escort
11. Coastal escort, mine, etc.
12. 100 classes of anti-air/air warfare ships.

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WARSAW PACT FORCES

STRATEGIC ROCKET & MISCELLANEOUS

ANNEX B

ICBMs: 1572

209 SS7 Saddler and SS8 Sassin

100 SS9 Scarp

4,019 SS11

100 SS13 Jevage

IR & MRBMs: 300

100 SS5 Skean IRBM

200 SS4 Sandjal RBM

AIR DEFENCE: 2,800 SAM launchers at 1650 sites.

4,500 SA2 Guideline

SA3 Goa

SA4 Ganef

5,300 SA5 Griffon

SA6 Gainful

Submarines shown under naval forces carry a total of 720 SLBMs.

Total Regular Forces

Army 2,341,000

Navy 279,500

Air Force 725,000

Divisions 167

Tanks 37,000

Combat Air 10,470